Human-Computer Interaction Series

Lene Nielsen

Personas – User Focused Design

Springer

Human-Computer Interaction Series

Human-Computer Interaction is a multidisciplinary field focused on human aspects of the development of computer technology. As computer-based technology becomes increasingly pervasive - not just in developed countries, but worldwide - the need to take a human-centered approach in the design and development of this technology becomes ever more important. For roughly 30 years now, researchers and practitioners in computational and behavioral sciences have worked to identify theory and practice that influences the direction of these technologies, and this diverse work makes up the field of human–computer interaction. Broadly speaking it includes the study of what technology might be able to do for people and how people might interact with the technology. In this series we present work which advances the science and technology of developing systems which are both effective and satisfying for people in a wide variety of contexts. The human–computer interaction series will focus on theoretical perspectives (such as formal approaches drawn from a variety of behavioral sciences), practical approaches (such as the techniques for effectively integrating user needs in system development), and social issues (such as the determinants of utility, usability and acceptability).

For further volumes:
http:www.springer.com/series/6033

Lene Nielsen

Personas - User Focused Design

Springer

Lene Nielsen
Interaction Design Group
IT University of Copenhagen
Copenhagen
Denmark

ISSN 1571-5035
ISBN 978-1-4471-4083-2 ISBN 978-1-4471-4084-9 (eBook)
DOI 10.1007/978-1-4471-4084-9
Springer London Heidelberg New York Dordrecht

Library of Congress Control Number: 2012943351

Translation from the Danish language edition: *Persona- Brugerfokuseret design* by Lene Nielsen,

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Contents

Introduction: Stories About Users

In 1997, when I for the first time was going to work with ‘multimedia’, as it was called back then, it quickly dawned on me that I had to become more informed about who the users were. The task was to develop a small piece of software to help an unemployed person clarify what kind of work he or she wanted to do. I had spent a day with a lot of jobseekers and interviewed some of them. In order best to share my understanding of the job-seeking users with the project team that I worked with, I wrote a little story about 30-year-old Bente who falls pregnant while an apprentice in a shop and as a consequence abandon her apprenticeship. Later on, Bente gets jobs at various industrial companies, mostly temporary jobs and seasonal work. She feels secure in working with routine tasks so that she does not have to put too much thought into things but can concentrate on the work and let her mind wander. The last place she worked suddenly closed down and since then her job opportunities have been limited. Bente would like to get started on an education but is afraid that this is incompatible with a husband and raising a family. She would like to do something in commerce or something to do with people.

I also wrote short stories about Hans, Birgül, Lars, and Karl. The descriptions were a summary of my impressions of the real-life people that I had met. The descriptions were presented to the project team and sparked a lot of concrete debate; also, about who was not part of the target group and the user descriptions were later used to describe the solution.

With the fictitious user descriptions, we had a specific tool making it possible to discuss the future product. I found that this was a very powerful tool and began to explore how the descriptions were otherwise usable. Not until much later did I discover that this way of working is called personas and scenarios.[1]

Thus, a persona is a description of a fictitious user. A user who does not exist as a specific person but who is described in a way so that the reader can recognise the

[1] My first article on personas was published in (Nielsen, 1998), the translation is ‘Scenarios as development tool’. In the article, I coin what was later to be known personas, as model users.

L. Nielsen, *Personas - User Focused Design*, Human–Computer Interaction Series,
DOI 10.1007/978-1-4471-4084-9_1, © Springer-Verlag London 2013

description and believes that the user could exist in reality. A persona is described based on relevant information from potential and real users and thus pieced together from knowledge about real people.

The descriptions of personas are used by designers, developers, project participants, and others to get ideas for design of products, IT systems, and services. The descriptions help project participants to identify with users and think of these instead of themselves. And they provide all participants in a project with the same understanding of who the users are.

The word 'persona' comes from Greek and means 'mask'. When we work with personas, we assume the mask of the users in order to understand them and their needs in the development of new products. To put yourself in the shoes of the users gives you an idea about what their wishes are and how they will use the product to be designed, whether it is a website, a mobile phone, or a new bike.

Also, a persona makes it possible to create a clear idea about what the user will use the product for and in what situation or context the product is to be used.

1 A Career with Personas

I was lucky to be able to continue pursuing my interest in product development in a research project, which in 2004 became a PhD thesis about personas and scenarios—'Engaging Personas and Narrative Scenarios'.[2] The theoretical basis is, briefly stated, an understanding of stories, their sequence of events, and how we understand fictitious persons.

Throughout the years, this has lead to a number of articles and even more classes and lectures. I'm still developing the method further, and today, it includes my experience from my practical work with using personas in development and innovation projects. Together with the theoretical work, the practical experiences have become the method 'ten steps to personas' which this book follows step by step (Fig. 1).

Each chapter describes a step and the purpose of this step, how you in practice can plan the work with personas, and what theoretical considerations are associated with the individual step. The book describes the advantages and disadvantages of personas and is a guide to get around the whole method.

I have worked in Denmark and the cases I present in the book are Danish. Some cases might be very special to Denmark, but I hope that my international audience will understand the specific contexts and be able to learn from the cases. For the last chapter, I have asked persona specialist from around the globe to contribute with their country-specific experiences.

The book is addressed to project managers and project participants who want to start using personas for developing new products and services, for project teams

[2] You can find my Ph.D. dissertation at http://personaer.dk/wp-content/samlet-udgave-til-load.pdf. See Nielsen (2004).

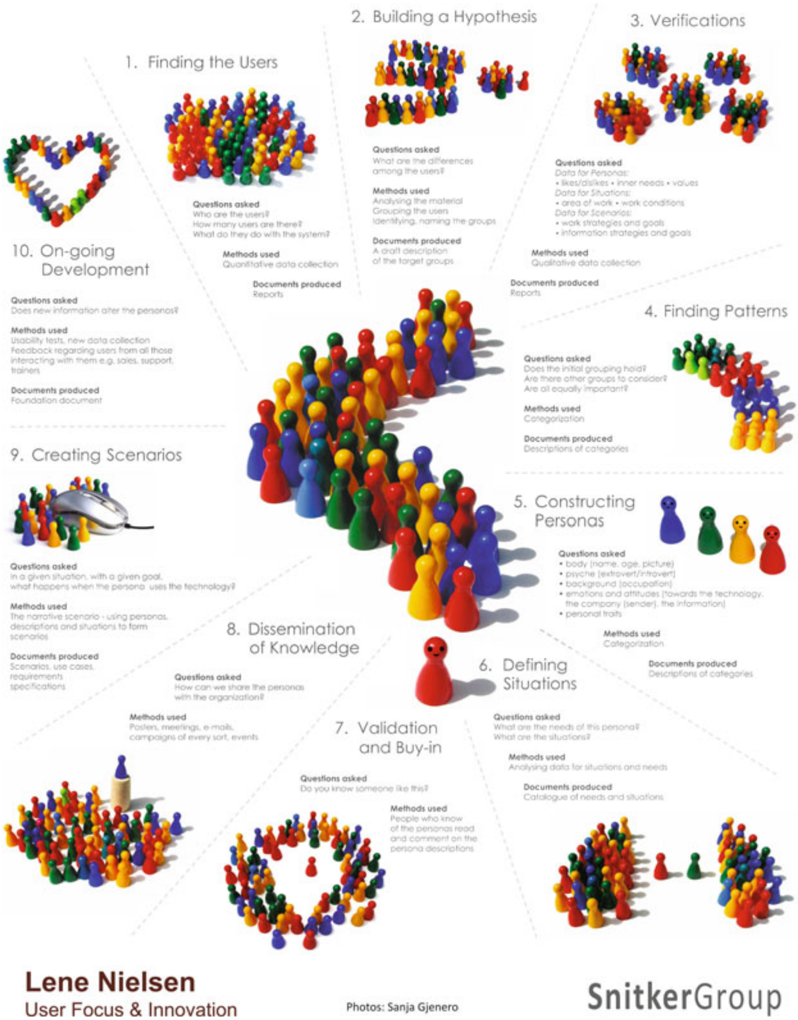

Fig. 1 The poster illustrates the 10 steps to personas

who need to look at existing products through the eyes of the users, etc. For example, this could be IT systems and mobile services that are to be redesigned. Marketing departments can use the book to understand the needs of the users when they want to target information and campaigns for the user. Finally, the book is also addressed at students who want to employ the method in practice for their projects and who also need to understand the theoretical considerations that go with each step.

The work with personas is about using the everyday experiences of the users and their needs as a starting point when developing new products. To get design closer to the everyday lives of the users is nothing new and was promoted within IT system development in the movement that has been called the Scandinavian design tradition. Here, IT systems were designed in dialogue with the users.[3] This turned into a school of design understanding where the users participate in the design process itself, and thus, the design is democratised. Including the users in the design process is the opposite of an artistic understanding of the designer as someone who by experimentation with materials and form gets inspiration to create a unique product or work.

The persona method does not necessarily include real users but instead representations of the users. This leads to inclusion of the users' perspective in all aspects of the design process. The method does not always focus on democratisation but on communicating user understanding to all participants in product development.

Often, the method is perceived as a usability method. But as it will become apparent, personas are more of a design method covering all phases and all aspects of a development project. It has a wider focus than usability.

The scientific foundation upon which the method is built is in its essence qualitative and has a holistic perspective on humans as being specific and dependent on the context they participate in.

2 To Be Able to Enter into the Lives of the Users

When we develop products, it is important to remember that we always design to someone that is different from ourselves. Others do not necessarily have the same interest in technology as I have and this can be difficult to imagine, when you work with technology all day long. That is why we need to be able to envision the user's needs and wants in connection with what we are working with for the time being, without having to be interested in what the users otherwise thinks and are interested in. Imagine that you have to design a new bike, then it is not necessary to understand whether the users like dogs or what party they support. But it is important to understand their need for biking—is it for transport or sport, their attitudes towards bikes; do they buy cheap or expensive; do they value aesthetics, maintenance or equipment, attitude towards traffic; and do they own a car or is a bike the only transporting device they have?

Several research projects have shown the IT system developers, designers, and engineers talk about users without having met any.[4] To be able to do so, they draw on their individual and general knowledge of people they find is like the users. This is the same everybody does when facing strangers; we use our cognitive ability to categorise people into fixed types based on our previous meetings with persons and our cultural background. A category could be like the following: she has large earrings and wide, long skirts, then she must listen to new age music; he wears a tie and a suit, then he is probably very formal. The person that the developers and designers talk about is unfortunately quite often a stereotypical and

[3] Read more on the Scandinavian design tradition at Bødker et al. (2000).

[4] See, for example, Orr (1996) and how it is described and how workers at Rank Xeros talk about the users.

one-dimensional version of the users, for example, the stupid user who is unable to use their brilliant product, or a user based on segmentations, for example, the modern segment that likes expensive red wine and fancy cars.

The persona method tries to break with the automated perception and instead to create empathic descriptions of the user. With the version of the method I have suggested, I, at the same time, attempt to go against that the individual designer can have his or her own perception of the user. Instead, a common and aligned understanding is created that is shared among the project team.

To work with personas requires a broad understanding of the entire lifeworld of the user.[5] The one reading the persona description must be able to understand and get engaged in the persona even though it is just a description in text and images. This requires that the information presented can create a level of involvement. Thus, when gathering data, we have to not only ask about what kind of work the users do, what their workflow is like, and what the purposes of using the product will be but also ask about their beliefs and attitudes. Always focus on the area at which the design is targeted. Here follows an example with the description of Karina that focuses on how much she reports to the authorities.

Karina, 40 years old, higher commercial course, holder of diploma in business studies. Works in a payroll office of a larger company where she has worked for 15 years

Background

Karina has been married to Anders for 13 years and they have two children, a boy and a girl of 11 and 13 years old, respectively. Anders works in sales and is employed at a larger company, also in Horsens. Karina enjoys nature and hiking in rain and wind, doing a Sudoku ensconced in the sofa, or hanging out with the kids. Karina grew up with four younger siblings so she has always been used to extra responsibility and that characterises her outlook on life

Work

Karina is good with figures, she knows touch-typing, is used to a numerical keyboard and tabulation. She is in control; she saves things, files away, and tidies up. She is structured, well organised, thoughtful, and calm and would describe herself as meticulous. She prides herself in doing a good job. Her work practices are governed by a calendar. Karina is adaptable and willing to accept changes if she can see that this will streamline the work flow.

Reporting

Karina prides herself in knowing about digital reporting so that others can consult her. She has build up a routine in using reporting through the portal Virk.dk.

Karina takes in new knowledge best when she sees a demonstration, and she has a good memory. She knows the beaten track inside out but if things do not turn out as expected she can become unsure of herself. She reads error messages if they pop up and attempts to deal with them, but she prefers calling her IT supporter than guessing what the solution may be.

Since Karina does her work well, thoroughly, and on time, it is critical for her if the system is down. She finds it annoying and unacceptable but will just try again later. Sometimes she goes to work very early in the morning to do the reporting because she knows that the system will not be overloaded.

There are many things that could be made better and if she takes the time to call support she makes suggestions for improvements of the system, as this will benefit both her and others.

Karina can see long-ranging perspectives in digital reporting. It can help her skip much data entry because it offers the possibility of reusing earlier entries and automatically retrieving master data for all employees.

Fig. 2 Karina, one of the four personas for Virk.dk

---

[5] The lifeworld can be defined as the reality you take for granted and judge with your common sense. See Schutz and Luckmann (1973), p. 3.

3 Focusing

Gathering relevant data is associated with the ‘focus area’—meaning what the product is about and focuses on. In IT system development, the focus area is often referred to as ‘the domain’. The focus area is part of defining the identities of the various users. The starting point is that we as people are able to have conflicting identities and opinions according to the social context we are part of (Jensen 1998). For example, we can easily hold one opinion privately and a slightly different opinion on the same matter when we are at work because this is necessary due to the context. Someone working professionally with tax matters can have one opinion about paying taxes at work and another as a private individual. Therefore, it is important to look at identities and attitudes within the exact area of focus. If we continue with the example from the homepage of the Danish Tax and Customs Administration, Skat.dk, then the focus area is the perception of the users of the entire tax and customs area as well as their wishes for the homepage, and that could give rise to questions like as follows: How do the users approach having to pay taxes? How do they understand the tax system? What are their expectations regarding digital reporting of taxes?

Offhand, it may seem that personas do not distinguish themselves from segmentation tools as, for example, conzoom® and their division of the Danes into 32 segments or the A.C. Nielsen/AIM’s Mini-Risc model with division of the Danes into 5 segments.[6] But the segmentation descriptions include data gathered wide, and the content of the descriptions is unfocused and covers diverse subjects such as media consumption, earnings, and political conviction. The persona method uses data exclusively gathered within the focus area. There is also a difference when it comes to what is being described. A segment describes a group while a persona is a description of an individual. Try to compare the description of Karina from before with the description of the segment ‘Danish Delight’. Karina is described specifically as a person whom the reader could meet in real life while Danish Delight is an abstract description of a group:

> *Danish Delight* provides a description of a middle-aged Denmark who inhabits the Danish isles and smaller urban communities. A household is made up by couples where the kids typically have left home. Their personal fortunes level is average and within *Danish Delight* you see personal fortunes both considerably below and above average. Typically, *Danish Delight* has no further education but they are or have been employed at various levels within corporate Denmark.
>
> Their housing is typically an owner-occupied single-family home; the dwelling space is between 90 and 130 sqm. Timber-framed houses are not unusual which connects well with the fact that we are often dealing with an older home in the country. (conzoom® 2007: 130 authors translation)

[6] conzoom® segments the population according to where people live. It contains data about and the average age, education, job, type of housing and size of housing, income, capital, media use, use of transportation, consumption, interests, shopping and leisure habits, etc. Mini-Risc segments according to demography, income, life-view, and values

4 Many Names One Concept

The persona method has developed from being a method for IT system development to being used in many other contexts, including development of products, marketing, planning of communication, and service design. Despite the fact that the method has existed since the late 1990s, there is still no clear definition of what the method encompasses. Often, when dealing with companies, I encounter the belief that the method can seem heavy and difficult to work with because there is a specific and right way to work with it. Because of this belief the companies judge that the persona method does not fit in with the way that they work. Other times, it is the project participants who are unwilling to accept the concept of personas. Thus, the company cannot use the method. A widespread attitude is also that the concept of personas itself creates a distance to the real users. Instead, fictitious person descriptions should be called user profiles, archetypes, types, or just plainly people. This way, distance is sometimes created to both the method and the concept of personas. But in my experience, there is no one right way to work with this method but many different ways and that the method can be used in both a long-term process and on a shorter and more pragmatic scale.

A persona is not the same as an archetype or a person. As it has been described, the special aspect of a persona description is that you do not look at the entire person but use the focus area as a lens to highlight the relevant attitudes and the specific context associated with these.

5 Product Development

In the design process, we begin with imagining how the product is to work and look before any sketch is made or features described. If the design team has a number of persona descriptions in front of them while designing, the descriptions will contribute to maintaining the perspective of the users. In the moment when the designers imagine how a possible product is to be used by a persona, ideas emerge. Thus, I will maintain that the actual purpose of the method is not the persona descriptions but the ability to imagine the product. I will designate the descriptions as *scenarios*. It is in scenarios that you can imagine how the product is going to work and be used, in what context it will be used, and the specific, general construction of the product. And it is during the work with developing scenarios that the product ideas emerge and are described. The persona descriptions are thus a means to develop specific and precise descriptions of products. A scenario could, for example, begin like this:

> Dorte sits down by the computer. She installed the signature as soon as she received the letter and pin number. It is uncharacteristic for Dorte to believe that she can manage a reporting quick and easy ‘just before lunch’ so Dorte changes her mind and calls her son and invites him over for dinner. Afterwards they will handle the reporting together.
>
> Dorte and her son have had their dinner and now sit at the computer ready to handle the reporting. They go to Virk.dk and look at the front page. Dorte tries to take it all in. It is new and thus a little daunting but at least it looks nice with those colours, she thinks. She looks at her son. What do we do now? He says: ‘What do you think? We have installed your signature’.

'Yes,' Dorte says, 'we need to find the reporting, but where?' 'Well, look, here in the middle of the page there is a search box, maybe we can try searching for it?' 'Let's try,' says the son. Dorte writes 'Student refund' in the search field and launches the search. A new screen appears with a short list of 'hits'. At the top is a link to the form she wanted. Dorte recognises that the link is to the form because the title of the link is the same as on the paper form she has used before. (Virk.dk)

6 Personas for IT and Products

As the persona method developed from a method for IT system development to also working within product development, a shift in the method occurred. When personas are used for IT system development, it is mainly to explore interaction and navigation. On the other hand, they are not suited to describe what kind of information the system is to contain. Let me give you an example: Virk.dk is a portal handled by the Danish Commerce and Companies Agency. Here, Danish companies can find all the forms needed for reporting to the authorities. For Virk.dk, four personas were created. One of these personas, Jesper, is an accountant. Jesper represents all the users reporting for other companies, including agricultural consultants. When Jesper is used in the scenario, he illustrates what demands all of those who report on behalf of others have to the product, both how they think and how they would like to see the information presented. But Jesper does not represent what information and reporting forms should be available on the site. If Jesper did, there would, for example, not be any reporting forms for agricultural consultants.

In IT system development, there are specific methods to describe the system navigation and interaction, for example, Unified Modelling Language or the user stories within agile development methods, where the scenarios are described in illustrated and narrative stories. It is quite easy to insert the personas into these methods. When personas are used for product development, the scenario takes a different path. Interaction with the product becomes the central issue. Here, the users' process and interaction with the product can more easily be understood if you play out the process as a sort of role-playing. Also, you might not have to deal with the same requirements regarding documenting this. For example, you could film them or describe them as little comic strips. These differences are described in more detail in Chap. 9: Stories About the Future.

7 Two, Four, or Six Personas?

How many personas are required for a project solely depends on how different the users within the focus area are. Differences are often perceived as axes in contrasts. Thus, you often end up with two, four, six personas. You have to remember that personas are a tool to target design and that the entire process is about being able to grasp data and reduce them as much as possible.

Another aspect in the number of personas is that our memory puts limits on how many we can work with. If there are much more than five to six personas in a project, we simply find it difficult to distinguish them from one another and furthermore difficult to remember the details about each individual persona.

8 A Process, Not a User Portrait

The whole purpose of using the method is, as already mentioned, that all project participants get the same understanding of who the users are and within what contexts they use the product. The purpose is also to disseminate this understanding throughout the entire project process. In many project models, a user focus is included, but despite iterative project models that revise a phase several times, the reality is often that knowledge about the users will be included in the beginning of the project or the end, for example, during testing and evaluation efforts. In all the processes in-between, knowledge of the users is often not applied. And in many IT projects, the programmers and graphic designers will not have access to knowledge about the users. This is something that the persona method attempts to rectify, and the condition is that personas and scenarios must be part of all steps in the project work, from feasibility studies to project development and design onto marketing. If everybody in the project begins to use personas and apply scenarios, the knowledge gathered in the beginning of the project will also be used later on in the project process.

Thus, the dissemination of knowledge about personas in the project organisation becomes important. How this takes place should be planned from the beginning of the project. Too many project participants get their first taste of the company using the method when they discover that there are persona posters on the wall or when they see an image of a persona on a mug.[7] Therefore, it's important that designers and developers early on in the process get to experience the strengths of the method. This can happen in workshops where they learn to use personas and experience how using the method could give them new insights into the demands from the users to the products. This way, they will also understand how the method can interact with their other development methods.

I'm not the only one to consider personas as a method to communicate user data to project participants. But my special point of view is that by including as many as possible in the development of personas and by learning as much as possible about using the method, the knowledge will be disseminated. Several have described the method as a communications strategy, but this can lead to focusing too unilaterally on the occurrence of a sender, a message, a medium, and a recipient. In literature

[7] Microsoft has described how they do persona campaigns by hanging small posters on toilet doors and creating mugs with persona descriptions, photos, etc.

about the method we can see, when it's described, how some convert data and describe personas which are communicated to design teams as campaigns, slideshows, and posters. In other words, information about personas will be disseminated in the organisation (Pruitt and Adlin 2006). This understanding does not include very many from the project team and overlooks that the biggest challenge is how to get the entire organisation to accept and use the method actively. If it is seen as a communication strategy, however, it can unfortunately sometimes be part of preventing that the method is used in daily project decisions. Therefore, I think it is more expedient to view the method as a process ensuring user focused design in all phases of the project: a process that includes as many from the project team as possible and that ensures that all have understood what it entails to use the method. Therefore, I suggest a ten-step model that ensures thorough collection of data, that the project team is included in the process, that scenarios are used for innovation and idea development, and that the person who is going to read the persona description is taken into account.

9 Ten Steps to Personas

My process model contains four different main parts: data collection and analysis of data (steps 1 and 2), persona descriptions (steps 4 and 5), scenarios for problem analysis and idea development (steps 6 and 9), and acceptance from the organisation and involvement of the design team (steps 3, 7, 8, and 10).

The ten steps cover the entire process from the preliminary data collection over active use to continued development of personas. As can be seen from some of the cases that will be presented later on, a project doesn't need to follow all ten steps:

1. *Collection of data.* In the first step, you collect as much knowledge about the users as possible. Data can come from many different sources, even from pre-existing knowledge in the organisation.
2. *You form a hypothesis.* Based on the first data collection, you form a general idea of the various users within the focus area of the project, including in what way the users differ from one another.
3. *Everyone accepts the hypothesis.* In this step, the goal is to support or reject the first hypotheses about the differences between the users. This happens by confronting project participants with the hypothesis and comparing it against existing knowledge.
4. *A number is established.* In this step, you decide the final number of personas.
5. *You describe the personas.* The purpose of working with personas is to be able to create solutions based on the needs of the users. The means is to prepare persona descriptions that express enough understanding and empathy for the readers to understand the users.
6. *You prepare situations.* As already mentioned, the method is directed at creating scenarios that describe solutions. The situations are precursors to scenarios.

In this, a number of specific situations are described that could trigger use of the product. Every situation is the basis of a scenario.

7. *Acceptance is obtained from the organisation*. It is a common thread throughout all ten steps that the goal of the method is to involve the project participants. This means that as many as possible participate in the development of the personas and that it is important to obtain the acceptance of the participants of the various steps. That is why all should contribute to and accept the situations. In order to achieve this, you can choose between two strategies: You can ask participants about their opinion or you can let them participate in the process.
8. *You disseminate knowledge*. In order for the method to be used in the project team, the knowledge of the persona descriptions should be disseminated to all. It is therefore important early on to decide how knowledge is to be disseminated to both those who have not participated directly in the process, to future new employees, and to possible external partners. The dissemination of knowledge also includes how the project participants will be given access to the underlying data.
9. *Everyone prepare scenarios.* As previously mentioned, personas have no value in themselves. Not until the moment where a persona is part of a scenario—the story about how the persona uses a future product—does it have real value.
10. *Ongoing adjustments are made.* The last step is about the future life of the persona descriptions. The descriptions should be revised regularly, approximately once a year. There can be new information or the world could change, and there may be new aspects that could affect the descriptions. Decisions have to be made whether to rewrite the descriptions, whether to add new personas, or whether some of them possibly should be eliminated.

10 Meetings and Workshops

The ten steps describe sub-processes with corresponding activities, and certain steps must be planned well ahead of time before you get to the actual activity. Let me briefly outline the stepwise meeting activity.

Pre-meeting

Participants: The central project team.

Contents: During the pre-meeting, you clarify the important questions such as process, timeframe, who participate in the various processes, the communication plan, and the communication products.

Purpose: To get a general view of the entire process and the efforts required from all the parties involved.

Involvement: The participants focus on the process and create a common standpoint for how the project in its entirety should progress.

Expert knowledge from the client and others

Participants: All project participants as well as internal and external experts.

Contents: Together, you collect accessible knowledge internally in the company. External experts are interviewed.

Purpose: To gain clarity of existing knowledge in the company as well as creating consensus about what data needs to be collected and who possibly needs to be interviewed or observed.
Involvement: Act as kick-off for all project participants.

Data collection (with the client)
Participants: A smaller part of the project team.
Contents: Qualitative data, from, for example, interviews, focus groups, and observations, is obtained. I have on some occasions had clients be present for the actual interviews. That provides them with a lot of knowledge and great insight into the everyday lives of the users and it benefits the further process. The clients have played a dual role—both taking notes and acting as the actual interviewers under my supervision. A drawback in connection with this approach is that many are not trained interviewers and that it can be difficult to remain neutral if someone criticises or misunderstands their product. In each individual case, we considered whether it was appropriate and ethical that the client was active during the interviews. The considerations focused on both the benefits of their presence, on financing, and on ethics. All three factors should be weighed against each other.
Purpose: Both to gather knowledge and to give the client an understanding of the everyday lives of the users.
Involvement: Results in specific knowledge to be passed on in the organisation. This takes place both in the shape of anecdotes where knowledge is unreflective but refers to specific incidents and in a reflective but unprocessed shape where incidents are compared across interviews.

Pre-analysis
Participants: The persona manager.
Contents: The interviews are divided into themes. These are noted in manageable shape.
Purpose: To supply a material making it possible for several people to participate in the actual analysis.

Group analysis
Participants: The central project team.
Contents: The group analysis provides the central project team with an understanding of the data material and an understanding of the process. The participants in the data collection can frame their impressions and pass these along to the others in the project team and compare their experiences.
Purpose: To analyse at the same time as knowledge is distributed, formalised, and validated.
Involvement: Results in an understanding of how data becomes patterns that results in personas. Both the unreflective as well as the reflective knowledge come into play.

Closing analysis
Participants: The persona manager.

Contents: It is my experience that the group analysis cannot reach a sufficient analytical level. You therefore often need a final analysis.
Purpose: The final persona categories.

Persona workshop
Participants: All project participants.
Contents: In groups of two to four people, the project participants describe the various personas, which subsequently are reviewed by all participants together. The form varies from long stories to lists. At the same time, you discuss what situations are important for the various users.
Purpose: To give ownership of personas and to express the common understanding inherent to the organisation and which is not based on data.
Involvement: Gives ownership of personas and in-depth knowledge of and insight into them. The anecdotes are expressed and are part of adding depth to the descriptions.

Revision of personas
Participants: The persona manager.
Contents: Here, you revise all persona descriptions in order for them to be consistent.
Purpose: Uniform expression and content.

Scenario workshop
Participants: All project participants, both internal and external, as well as people from marketing and management.
Contents: Here, you act out one or two situations for each persona.
Purpose: Partly concept development and partly a learning process about how you work with personas. This results in both knowledge and ownership. It is my experience that many only begin to understand the potential of the method at this step.
Involvement: Ensures contributory influence in the process and understanding of how the method is used.

Communication of material
Participants: The central project team or the persona consultant.
Contents: Posters and other material of personas are prepared. A document describing the process, collecting all data, describing the analyses, and connecting them with the persona descriptions is also prepared.
Purpose: To have a document where data and persona descriptions are interlinked. This can be used in an argumentation for different solutions. Furthermore, to have a document that provides knowledge about the process and background material for new project participants.

Use
The persona descriptions are present at all meetings and decision points.

11 Other Approaches to Personas

The ten steps approach is my own persona method recipe. But I'm not the only one in the world attempting to explain how to use the method. The entire persona approach stems from IT system development where in the late 1990s, many had begun thinking of how you could communicate an understanding of the users. In literature, various concepts emerged such as user archetypes, user models, lifestyle snapshots, and my phrase, model users. In 1999, Alan Cooper wrote the book *The Inmates are Running the Asylum* where he introduced the concept of personas. The book was a tremendous success and became the beginning of the understanding of personas as a concept describing fictitious users. Despite the fact that a vast number of articles about using personas have been written, there is no unilateral understanding of the application of the method or a definition of what a persona description is. In literature about the method, there are today four different perspectives regarding personas: Cooper's goal-directed perspective; Grudin, Pruitt, and Adlin's role-based perspective; the engaging perspective that I myself use, which emphasises how the story can engage the reader (Sønderstrup-Andersen 2007); and the fiction-based perspective. The first three perspectives have in common that the persona descriptions should be founded on data. The last perspective, the fiction-based perspective, does not include data as basis for persona description but creates personas from the designers' intuition and assumptions; they have names such as ad hoc personas (Norman 2004) and extreme characters (Djajadiningrat et al. 2000).

11.1 The Goal-Directed Perspective

Cooper characterises his persona method as 'goal-directed design'. He describes the method as one that can make designers understand the users. Goal-directed design becomes an efficient psychological tool for looking at problems and a guide for the design process. The central issue in the method is the hypothetical archetype who is not described as an average person but rather a unique character with specific details. The method focuses on choosing one persona as the primary while a number of secondary personas can be used on the side.[8]

A persona is defined by its personal, practical, and company-oriented goals as well as by the relationship with the product to be designed, the emotions of the users when using the product, and the goals of the persona in using the product (hence goal-directed).

[8] About the early history, see Goodwin (2001, 2002), and Brechin (2002). Alan Cooper has written two books, see Cooper (1999) and Cooper et al. (2007).

It is the users' (work) goals that are in focus of the persona descriptions, for example, workflow, goals, contexts, and the attitudes of the persona. The advantage of this method perspective is that it provides a focused design and that it is a communication tool to finish discussions.

11.2 The Role-Based Perspective

The role-based perspective shares goal direction with Cooper and also focuses on behaviour. The starting point of the role-based perspective is criticism, both of the traditional system development approaches and of Cooper's approach to personas. The criticism of the traditional approaches to develop IT systems is directed at the use of scenarios that are criticised for lacking clarity and consistency in the user descriptions. Therefore, the critics suggest expanding the user archetypes that can communicate the most important knowledge about the users and thereby supporting the design process. Cooper is criticised for underestimating the value of user involvement and for seeing the method as one single method that can handle anything (Mikkelson and Lee 1993; Grudin and Pruitt 2002). The role-based perspective uses the criticism as a starting point to further develop the method. The most important additions are as follows: It is important that both qualitative and quantitative materials supplement the persona descriptions, and there should be a clear relationship between data and the persona description (Grudin and Pruitt 2002). Personas can communicate more than design decisions to designers and clients; they can also communicate information from market research, usability tests, and prototypes to all participants in the project. Finally, the method is regarded as a usability method that can't stand alone but should be used in tandem with other methods. The persona description itself should contain information about several issues: how big a share of the market the individual person takes up, how much market influence the persona has, computer proficiency, activities, the hopes and fears of the user, as well as a description of a typical day or week in life of the user. In addition to this are strategic and tactical considerations (Pruitt and Adlin 2006).

The role-based perspective focuses on the users' roles in the organisation (Sønderstrup-Andersen 2007). Personas are an efficient design tool because of our cognitive ability to use fragmented and incomplete knowledge to create a complete vision about the people who surround us. With personas, this ability comes into play in the design process, and the advantage is that a greater sense of involvement and a better understanding of reality will be created.

11.3 The Engaging Perspective

The engaging perspective is rooted in the ability of stories to create involvement and insight. Through an understanding of characters and stories, it becomes possible to create a vivid and realistic description of fictitious people. The purpose of the engaging perspective is to go from designers seeing the user as a stereotype with whom they are unable to identify and whose life they cannot envision to actively involving themselves in the lives of the personas.[9] The other perspectives are criticised for creating a risk for stereotypical descriptions by not looking at the whole person but focusing on behaviour (Nielsen 2004).

The starting point for the engaging perspective is the way we interact with other people. We experience specific meetings in time and place. We mirror ourselves in the people we meet. And we experience others as both identical to and different from ourselves. Also, we experience relationships that are not specific and where someone we meet is anonymous and represents a type. Here, we use our experiences to understand the person and to predict what actions he or she will perform. If the designers see the users as representatives, they create a mental image of the users together with a number of typical and automated acts. These representations prevent insight into the unique situation of the users and reduce the value of the scenario as a tool to investigate and describe future solutions.

An engaging description requires wide knowledge about the users, and data should include information about the social backgrounds of the users, their psychological characteristics, and their emotional relationship with the focus area. The persona descriptions balance between data and knowledge about real applications and fictitious information that, as mentioned, is intended to create empathy. This way the persona method is a means against automated thinking.

11.4 The Fiction-Based Perspective

The personas in the fiction-based perspective are often used to explore design and generate discussion and insights in the field (Floyd et al. 2008). Ad hoc personas are based on the designer's intuition and experience and used to create an empathetic focus in the design process (Norman 2004). Extreme characters help generating design insights and explore edges of the design space (Djajadiningrat et al. 2000). Pastiche scenarios create personas derived from fiction like Bridget Jones or Ebenezer Scrooge and help designers to be reflexive when creating scenarios (Blythe and Wright 2006).

[9] Both within psychology and sociology anonymous meetings are described. Within sociology, the term the anonymous is described as 'a representation of a type', within psychology the term stereotype is used. You can read more about types and stereotypes at Schutz and Luckmann (1973) and Macrae and Bodehausen (2001). The difference between cliches and stereotypes can be described as follows: '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).

12 Criticism

Criticism of the method pertains to empiricism, especially the relationship between data and fiction. The implementation of the method in companies has also come under fire (Rönkkö et al. 2004; Chapman and Milham 2006; Chapman et al. 2008; Portigal 2008).

Because the persona descriptions have fictitious elements, some find it difficult to see the relationship with the real users and the way that the data used is collected and analysed. The fictitious elements apparently prevent the method from being regarded as scientific as one of the criteria for this is that the study must be reproducible. At the same time, the method has been criticised for not being able to describe actual people as they only describe characteristics.

When it comes to implementation, the method is criticised for preventing designers meeting actual users as actual stories and encounters with real users are assumed to give a better understanding of the users' needs. Yet another objection is about the fact that the method does not take into consideration internal politics and that this can lead to limited use.

The criticism is refuted in this book with regard to the method's scientific foundation, with insight into the relationship between empiricism and fiction, and with examples in specific ways to implement the method in the company.

13 Persona, Narrativity, and System Development

I will go into more details about how personas and scenarios are tightly interlinked with narratives. Here, I'm thinking both of the relationship between the fictitious characters and the story and the general narrative structures. Using narratives is nothing new within IT system development where stories have been suggested as a starting point to collect data and as a method to theorise over various project types and project phases. At the same time, focus on stories can play a part in creating insight into what goes on outside and below the official course of events. Thereby, the many, often contradictory and competing, stories and interpretations that circulate in an organisation can be revealed. Stories can also be used when you want to theorise about organisations, IT systems, and IT system development. An organisation can be seen as a collective narrative system where members on an ongoing basis construct and play out sequences of events, both individually and together, to be able to remember and to create meaning in past, present, and future events (Boje 1991, 1995). They can be used in the process of structuring both the IT system development process and the IT system itself. Here, the narrative contributes to creating a partnership and a common understanding of the players involved and their goals. This applies both in relationship to the development and the presentation of the system for the user (Gazan 2005). Stories work on several levels also as templates for gathering and analysing empirical data. This happens in interview situations when you need to determine system requirements. The developers can focus on the users' stories about existing and future practice, analyse them, and this way become more aware of requirements (Alvarez and Urla 2002). The requirements can later on be described in narrative scenarios that are easy to relate to and easy to remember. The scenarios draw on our ability to create meaning individually and together, and to arrange and concentrate information in a narrative form (Carroll 2000). Subsequently, the stories can be used to analyse the process, the mistakes that occurred as well as the political implications of the development and implementation process (Brown 1998; Brown and Jones 1998).

14 The Internet Portal and the Furniture Factory

The two main cases I use in this book follow different sequences of events and show different ways of using the method. I have monitored the Internet portal Virk.dk for several years, both in practice and as a researcher, and this is the case that best illustrates a complete persona process. I came into contact with the cabinetmakers company Andersen (Brdr. Andersen Møbelsnedkeri) in connection with a project about user-driven innovation where the factory owner wanted to use personas to get to know the customers better. The project became an atypical persona project that illustrates how the method can also be used when you have limited funds. I have included this atypical case to show that the method is usable for innovation in many different ways.

14.1 Reporting Through Virk.dk

The first case, the main example in this book, is about the development of personas for the internet portal www.virk.dk (Virk.dk). Virk.dk is owned by the Danish Commerce and Companies Agency and is a web portal where companies report to the public authorities. Many reports to the public authorities are mandatory, for example, reporting taxes and VAT; others will trigger compensations, for example, sickness benefits. The reports are made by the use of forms that can be posted or filled out digitally. The Danish Commerce and Companies Agency would like all reports to be made digitally in the future. In order to make reports online, the company has to have a digital signature. At the portal Virk.dk, there are about 1,300 different forms that all are developed by different suppliers. There are, for example, forms for wage statistics reported to Statistics Denmark. The form itself was developed by Statistics Denmark. Or forms for payment of wages reported to the Danish Tax and Customs Administration and where the Danish Tax and Customs Administration have designed the form.

Shortly after launching the portal Virk.dk, a headline read: 'The Danes turn their back on Virk.dk. Six months after launching, the common portal Virk.dk falls very

Fig. 3 The old and the new homepage of Virk.dk

short of expectations. Only 1,500 companies are registered users against the expected 50,000' (Computerworld 11 February 2004, author's translation).

The reputation of Virk.dk did not improve greatly in the coming years, and in 2007, it was rated no. 10 on the web-magazine Computerworld's list of Denmark's biggest IT scandals over time (Computerworld 20 July 2007). When the Danish Commerce and Companies Agency launched a project to redesign Virk.dk, they wanted a significant improvement, and one of the tools to improve Virk.dk should be personas.

The problem of the project was that only few companies made their reports digitally and that the ones who reported digitally were unable to locate the correct form. In order to solve the problems, the Danish Commerce and Companies Agency also wanted to include those who made the forms. The project participants thus came from both the Danish Commerce and Companies Agency and from suppliers such as the Danish Tax and Customs Administration and Statistics Denmark. Furthermore, project participants from the external suppliers in charge of the web system and graphic design also participated. The persona part of the project would run over a period of 3 months.

The result was a change in focus. Earlier, the portal had emphasised both information and reporting but with the new website reporting came into focus. There is still a lot of information at the site, but this is not what catches your eye first (Fig. 3).

14.2 The Starting Point

The project did not include funds for doing new interviews with users as resources had already been spent on preparing a report about the attitudes of companies towards digital reporting. The work group began by reading and thoroughly analysing the initial report. Meanwhile, interviews with a number of people from

Virk.dk-support, about the users and their typical problems and attitudes towards Virk.dk, were carried out.

The Danish Commerce and Companies Agency has traditionally divided the Danish companies according to line of business and size. Based on the reports and the interviews, we found that what matters is the size of the company. In big companies, there are employees who report a lot. In small companies, the reporting occurs more rarely and the employee has many other tasks to handle. It is also significant whether the person in charge of the reporting is doing the reporting for the company that the person in question works for or as a consultant for a number of companies.

The result was presented for the project team from the Danish Commerce and Companies Agency and for form suppliers. The participants in the workshop confirmed our initial hypothesis. It was decided that Virk.dk has four primary personas: an employee in a big company who does a lot of reporting, an employee in a small company who does not do a lot of reporting, a consultant who reports on behalf of other companies, and one who recently became self-employed who hardly does any reporting at all. In addition to these four categories, there were two secondary personas who, for various reasons, are not as important but still had to be included in the project.

The participants discovered that three job-roles influence whether the personas ever get started using Virk.dk and created three "influencers": an IT manager, a manager, and an administrative employee who receives the forms. These also needed to be described in the persona catalogue but not in an as detailed manner as the primary personas.

14.3 The Personas

In the next workshop, the four persona categories were described as Karina, working in payroll processing of a big company; Dorte, employed in her husband's plumbing firm; Jesper, an accountant in a big accountancy firm; and Michael, self-employed with his own deli and wine shop in a small town. The participants made descriptions, which later were revised by the consultants so that they were uniform linguistically and followed the same basic template.

14.4 Scenarios

When the final development of Virk.dk was about to start, it was important that developers and graphic designers also knew the four personas. Therefore, a final workshop was held where the project managers, system developers, graphic designers, and project participants from the Danish Commerce and Companies Agency participated.

Fig. 4 The four personas for Virk.dk: Karina, Jesper, Michael, and Dorte

The purpose was partly to introduce them to the four persona descriptions and partly to make them aware of how you specifically work with personas (Fig. 4).

The second part of the final workshop was reserved for getting the participants to develop scenarios and in that way gain an understanding of some of the issues that arise when you design a website for four very different user groups. The task put to the participants was to describe what will happen the first time the various personas use the new Virk.dk.

14.5 In Use

After the project, the Danish Commerce and Companies Agency has manufactured a number of posters. One poster for each persona: a poster that describes those who affect the use as well as the secondary personas and a poster that briefly outlines the characteristics of each of the four personas. Today, the Danish Commerce and Companies Agency use their four personas when they envision individual elements for sites and when they need to recruit real people for the ongoing usability tests of the website. The personas have also been used in a project where they were part of a number of future scenarios for digital reporting.

14.6 Furniture and Innovation

The cabinetmakers Andersen, that mainly designs and produced rather expensive tables, was invited to participate in an innovation project called the User Lifestyle Driven project (the ULD project) funded by the Danish state. The starting point was to compare various methods for user-driven innovation. Andersen chose to use personas, and a process was facilitated for them. The process consisted of a short introduction to the method, data collection, a workshop where the project participants together analysed data, persona descriptions, and finally a presentation of the process to the entire factory. The entire process took a year and involved one of the two owners, a furniture designer, and a student assistant. In the last workshop, employees from marketing and sales also participated. I was hired as a consultant to facilitate the process.

14.7 Data

Data were collected by the company's usual furniture designer and an assistant. They interviewed about 50 customers who were shopping at shops selling Andersen furniture. The shops were located across the entire country. The designer and his assistant also went on six house calls visiting customers who had bought the Andersen furniture.

All interviews were transcribed, and I prepared the first analysis that resulted in a number of data cards with statements from the people interviewed. The cards were used in an analysis workshop where the participants grouped the statements and found differences between the customers. Later on, a final analysis summarised the information about the three personas of the factory.

14.8 Personas

After this, the participants described a preliminary version of the three personas. Subsequently, the descriptions were rewritten so that they were uniform linguistically and contained the same information. It was not all that easy for the participants to describe personas as they were not used to writing in prose.

The process ended by a presentation of personas and the process for all employees at the factory.

14.9 Use

The participants had gained a new understanding of who their customers were. After the process, they began working on changing the way that furniture shops presented the furniture of the factory and they changed design strategy. The owner of the factory and their designer were interviewed about the process and about what the method had taught them.

> 'Before I said "we think" but now I can say "we know". We can prove and document our knowledge very convincingly and I feel that we have been very fortunate when we got the possibility of becoming part of the ULD project', says Jørgen Andersen who already has established a group internally in the company to keep working with the methods. 'This is a bit like getting your driver's licence, now we have to learn to drive. We have been given some tools and we need to begin using them.'

Now, we are the ones who know the clients.

Architect Ditlev Karsten has worked with the furniture company Andersen for many years and was therefore included in the process. 'It's a completely natural part of your training to become an architect to look at the needs of the user but it has still been educational to go out and meet the people who buy the furniture that I've designed. Just before we began, I was asked to design a dining table for families with young children but I had no idea how they lived their lives. Were they even sitting down or were they constantly on the go to a sporting activity? My hair is too grey to know but now I have specific insight into the lives of the customers. And they do sit down and we prioritise sitting nicely and eating together', says Ditlev Karsten and Jørgen Andersen comments: 'We used to rely on what the designers brought to the table. It was in the cards that they would know and that they knew the market. Now we have knowledge in-house, it is really positive that we are now the ones who know the customers' (Iversen et al. 2010: 164, author's translation).

Today, the company has developed a completely new strategy for how they can reach new target groups. Before they got to this point, the company went through the ten steps to personas method. Let's look at one step at a time and take a detailed look at each stage in the process.

References

Alvarez, R., & Urla, J. (2002). Tell me a good story: Using narratives to examine information requirements interviews during an ERP implementation. *The Data Base for Advances in Information Systems, 33*(1), 38–52.

Blythe, M. A., & Wright, P. C. (2006). Pastiche scenarios: Fiction as a resource for user centred design. *Interacting with Computers, 18*(5), 1139–1164.

Bødker, S., Ehn., P., Sjögren, D., & Sundblad, Y. (2000). Co-operative design – Perspectives on 20 years with 'the Scandinavian IT Design Model'. In Proceedings of NordiChi. Stockholm, Nordic: Sweden.

Boje, D. M. (1991). The storytelling organization: A study of story performance in an office-supply firm. *Administrative Science Quarterly, 36*, 106–126.

Boje, D. M. (1995). Stories of the storytelling organization: A postmodern analysis of Disney as "Tamara-Land". *Academy of Management Journal, 38*(4), 997–1035.

Brechin, E. (2002). *Reconciling Market Segments and Personas*. Retrieved September 9, 2010, from http://www.cooper.com/journal/2002/03/reconciling_market_segments_an.html.

Brown, A. D. (1998). Narrative, politics and legitimacy in an IT implementation. *Journal of Management Studies, 35*(1), 35–58.

Brown, A. D., & Jones, M. R. (1998). Doomed to failure: Narratives of inevitability and conspiracy in a failed IS project. *Organization Studies, 19*(1), 73–88.

Carroll, J. M. (2000). *Making use – Scenario-based design of human-computer interactions*. Cambridge, MA: The MIT Press.

Chapman, C. N., & Milham, R. (2006). *The personas' new clothes*. San Francisco: Human Factors and Ergonomics Society (HFES).

Chapman, C. N., Love, E., Milham, R. P., ElRif, P., & Alford, J. L. (2008). *Quantitative evaluation of personas as information.* The Human Factors and Ergonomics Society 52. Annual Meeting, New York.

Cooper, A., Reimann, R., and Cronin, D. (2007). *About Face 3.0: The Essentials of Interaction Design*. New York: Wiley.

Cooper, A. (1999). *The Inmates Are Running the Asylum*. Indianapolis: SAMS.

Djajadiningrat, J. P., Gaver, W. W., & Frens, J. W. (2000). *Interaction relabelling and extreme characters: Methods for exploring aesthetic interactions*. In The 3rd conference on designing interactive systems: processes, practices, methods, and techniques, (pp. 66–71). New York: ACM.

Edelstein, L. (1999). *The writer's guide to character traits*. Cincinnati, OH: Writer's Digest.

Floyd, I. R., Jones, C. M., & Twidale, M. B. (2008). Resolving incommensurable debates: A preliminary identification of persona kinds, attributes, and characteristics. *Artifact, 2*(1), 12–26.

Gazan, R. (2005). Imposing structures: Narrative analysis and the design of information systems. *Library & Information Science Research, 27*, 346–362.

Geomatic. (2007). *conzoom® 2007 Klassifikation Danmark*, Geomatic aps, Center for geoinformatik.

Goodwin, K. (2001). *Perfecting Your Personas*. Retrieved September 9, 2010, from http://www.cooper.com/journal/2001/08/perfecting_your_personas.html.

Goodwin, K. (2002). *Getting from Research to Personas: Harnessing the Power of Data*. Retrieved September 9, 2010, from http://www.cooper.com/journal/2002/11/getting_from_research_to_perso.html.

Grudin, J., & Pruitt, J. (2002). *Personas, participatory design and product development: An infrastructure for engagement*. Malmø: PDA.

Iversen, B., Quitzau, M. U., Bjerregaard, B., & Knudsen, J. (2010) *ULDprojektet - Små og mellemstore livsstilsvirksomheders afprøvning af brugerdrevne innovations- metoder.* Herning: Development Centre UMT.

Jensen, I. (1998). *Interkulturel kommunikation i komplekse samfund*. Roskilde: Roskilde Universitetsforlag.

Macrae, N. C., & Bodehausen, G. V. (2001). Social cognition: Categorical person perception. *British Journal of Psychology, 92*, 239–255.

Mikkelson, N., & Lee, W. O. (1993). *Incorporating user archetypes into scenario-based design*. In Proceedings of the Ninth Annual Conference UPA 2000. Chicago: Usability Professionals' Association, Available: www.upassoc.org. 23. Means, B.

Nielsen, L. (1998). Scenarier som udviklingsværktøj. *Designværkstedet*. Retrieved April 7, 2011, from http://design.emu.dk/artikler/9800-scenarier.html

Nielsen, L. (2004). *Engaging personas and narrative scenarios*. København: Samfundslitteratur.

Norman, D. (2004). Ad-Hoc Personas & Empathetic Focus. Retrieved February 2, 2012, from http://www.jnd.org/dn.mss/personas_empath.html

Orr, J. E. (1996). *Talking about machines: An ethnography of a modern job*. Ithaca, NY: Cornell University Press.

Portigal, S. (2008). Persona non grata. *Interactions, 15*(1), 72–73.

Pruitt, J., & Adlin, T. (2006). *The persona lifecycle: Keeping people in mind throughout product design*. San Francisco: Morgan Kaufmann.

Rönkkö, K., Hellman, M., et al. (2004). Personas is not applicable: Local remedies interpreted in a wider context. In *Proceedings of the eighth conference on Participatory design* (Artful Integration: Interweaving Media, Materials and Practices, Vol. 1, pp. 112–120). New York: ACM.

Schutz, A., & Luckmann, T. (1973). *The structures of the life-world*. Evanston, IL: Northern University.

Sønderstrup-Andersen, E. (2007). Personas: En domæneanalytisk tilgang. *Dansk Biblioteksforskning 2, 3*, 61–75.

1: A Slice of the World

The starting point when working with personas is knowledge about the users. *Step 1: Collection of data* is about how you obtain data about the users, what data is, and how you treat the data. When you are designing surveys, these are questions that you have to deal with as well as having to consider whether the data material is of a sufficient quality to deduct assumptions on, in what ways the users differ and what it is that makes them different.

Collecting data is taking a small slice of the world in order to create an understanding of the entire world. Fundamentally, there are two approaches to dealing with data: the positivism approach that understands the world as objective and quantifiable—in this case, quantitative methods are used—and the interpretive approach that understands the world to be populated by people who individually have subjective interests. To understand the subjective worldview of others, the interpreter must apply his or her own worldview to understand the worlds of others (Schutz and Luckmann 1973). This approach uses qualitative methods. The interpretive approach distinguishes between subjective experiences of reality and the research-based objectification of which the understanding and interpretation are part.

When you prepare an interpretation, you simultaneously construct a reading (Schwandt 1998). The interpretation becomes the researcher's construct of the constructs of the parties surveyed. Thus, it is not possible for the interpreter to maintain an objective distance to the subject under examination. When an interview is conducted, the person conducting the interview is part of an ongoing dialogue with the interviewed party and thereby becomes part of the interpretation. As the interpreter, you create the context in which the interview takes place and you create reason from the individual interview and from the totality of interviews of which the individual interview is part.

In the introduction, I mentioned that the persona method has been criticised for the fictive elements being a hindrance for that the method can be regarded as scientifically valid where one of the criteria for scientific surveys is that the survey must be reproducible. This criticism is based on an objectivistic scientific paradigm where science consists of statements that can be verified. In contrast to this is the interpretative paradigm where science is understood as the object of continual

L. Nielsen, *Personas - User Focused Design*, Human–Computer Interaction Series,
DOI 10.1007/978-1-4471-4084-9_2, © Springer-Verlag London 2013

clarification and discussion (Kvale 1996). The persona method is as such qualitative; knowledge of needs, attitudes, and behaviour is gathered; therefore, this criticism can be disproven by the critics having misunderstood the starting point of the method.

In the persona method, the focus area is what the data collection uses as a starting point. But before you begin collecting data, you have to have an understanding of the area that you are to examine. You have to explore the area and discover what important questions and complex of problems exist. Exploration of an area can be done by looking at already existing knowledge, for example, market research or research reports. The understanding that you gain by exploring the area contributes to creating assumptions on what makes the users different; is it income, age, gender, experience with the focus area, or attitudes towards the focus area? Understanding also contributes to deciding who should be interviewed or where observations should be carried out (Rasmussen and Fischer 2008).

Both qualitative and quantitative surveys are based on a number of hypotheses. If you look at the various models that divide the population of Denmark into segments, they are also based on hypotheses. conzoom® is based on the hypothesis that people who live in close proximity are similar. The Gallup Kompas segmentation model is based on, for example, age and attitude towards technology while newspaper reading archetypes is a segmentation model that looks at newspaper readers and is based on media usage.

In a project for JBS—a Danish company that mainly produces male underwear—the purpose in using personas was to understand the shopping habits of the customers and their attitudes towards underwear. Before we collected any data, we had a hypothesis that shopping habits and preferences would differ depending on age and that the place where you bought your underpants would reflect your preferences. We used these hypotheses to frame our data collection. We stopped 20 men at two selected locations that reflected our hypotheses about differences in shopping venue and asked six questions, a sort of 'vox pop' interview.[1] We selected the men that we spoke to so that we covered various ages.

1 Preparation

Before you begin thinking about what method to use, it's important to realise what the goal of the survey is and what questions you want to clarify. When this is clear, you can choose an evaluation paradigm suitable for the goal and questions of the survey and whether it is going to be a quantitative or qualitative survey. At the same time, it's also important, already at an early stage, to deal with the quantity of data, the time it will take to interpret the data, and how the data should be presented.

[1] Vox pop interviews (vox populi—the peoples' voice) are, for example, used for news features to hear the common man's opinion. For vox pop interviews, you stop a number of people in the streets at random and ask them their opinion.

When we collect data for personas, the process differs from other types of data collection as this entails a specific purpose connected with the process: Firstly, the data will make us able to discover what it is that makes the users differ. Secondly, we need to describe a fictitious user so that the person reading the descriptions can identify with the life of the user. Thirdly, the reader must be able to imagine the user in such a vivid and present manner that it become possible to get design ideas on behalf of the user which means that the data we collect should support a description with which the reader can identify. Fourthly, we need data about needs and demands that can support situations and scenarios. Thus, it becomes important to include how you can obtain the necessary information that can help determine how the users differ and at the same time support the descriptions.

Here is a guide that can be used as a decision-making tool for designing surveys (Preece et al. 2006)[2]:

Determine the Goal of the Survey

The goal of the survey is to discover what makes the users differ within a given area of focus.

Think about who is going to use the persona descriptions. Are they for development, marketing, or both? Whom among those who is going to use the descriptions can influence the knowledge to be presented?

Think about why the survey was launched. Is it a need to examine the users' needs or is it to examine their attitudes towards a specific concept?

When we work with personas, it is most often to discover how the users differ respectively, what needs they have, and when they will want to use a given product. If we also would like an answer as to how many users there are of each type we need to prepare a plan for how to obtain this information.

Examine the Specific Questions You Want Answered

Describe the questions you want answered. Do these questions lead to sub-questions?

Choose Evaluation Paradigm and Techniques

Use the information above as a starting point to choose your evaluation paradigm and what will be the best way to proceed to obtain the information desired? If the information is associated with a development over time, you may need to use a diary format, and if the information is quantifiable, you may need to use questionnaires.

Identify the Practical Issues

There are a lot of practical issues to be clarified before a survey is launched, for example, is the data collection associated with travel or other time-consuming factors? Often, the time-consuming recruiting of respondents is overlooked.

[2] The guide DECIDE (Determine goals, Explore the questions, Choose the evaluation approach and methods, Identify the practical issues, Decide how to deal with ethical issues, Evaluate, analyse, interpret, and present the data) originates from Preece et al. (2006). I have added an extra issue,7, that is specific for personas.

In that regard, you also need to think about how much they should receive for taking part in the survey. As part of the practical issues is also how information is to be collected and how is to be transcribed.

Decide How You Want to Treat Ethical Issues

How is sensitive information to be treated? How can you ensure the anonymity of the respondents? How do you ensure that the respondents understand what it is that they are part of? It should also be examined whether you are working within an area where there are official rules regarding the storage of data.

Evaluate, Interpret, and Present Data

Decide how data is to be interpreted. Should it be interpreted statistically? Should you use user quotes? Should user quotes be sound or image files? Should the result be delivered in a report or as a presentation? All these considerations are of importance to the contents and planning of the survey.

Decide Whether You Have Enough Information to Describe Personas and Prepare Situations and Scenarios

Here, it's important to discover how we can obtain knowledge about the focus area and ask questions. This applies to both knowledge about the personal areas of the users to be used in the persona description and knowledge about context and product technical issues that are to be used for scenarios.

All these issues should be clarified before launching the survey. By and large, it's worthwhile to consider whether it's a good idea to have 20 unstructured interviews if you only have one day for interpretation and data should be presented on two slides.

2 Methods

The choice of method depends on the task at hand, time, resources, and not least the purpose of the data collection. In the choice of method, you should also look at available pre-existing information. For personas, it can be necessary to combine qualitative and quantitative methods as we may need to know attitudes and needs as well as how large a section of a given category a persona represents. If there are tasks to be studied in connection with the data collection, this also affects the choice of method. Do you, for example, need to know something about the focus area in order to understand the tasks completed? Is it of importance whether the task is completed as a sequence or whether it consists of sub-tasks that are carried out simultaneously? If you, for example, are dealing with a purchase, regardless of whether it is online or in a shop, this takes place as a number of acts. Whether the task is performed by individuals or whether there are other employees involved is also of importance for what method is chosen. Also, whether the task contains a lot or a little information and whether the information is complex or simple. At the same time, it is important to understand that getting hold of users costs both time and money.

There is a lot of literature describing methods of data collection, and I am not going to describe the various methods in detail but instead present a selection of methods, their advantages and drawbacks, and what you have to take into considerations when the methods are to be used for personas.

The methods that I am presenting are different when it comes to time consumption, level of detail, as well as the uncertainty associated with the results. The prerequisites required for using the technique are also different, for example, practice in hosting focus groups, interviews, and performing observations, as is the type of knowledge and insight you get from the area studied, and finally differences in how much information is collected (Table 1).

3 Examples of Data Collection

In the following, three examples of how data were collected and how data supported persona descriptions are presented. The methods differ regarding time use, level of detail, uncertainty, and what prerequisites are required to use the method. At the same time, they are different according to what knowledge and insight into the area under examination they deliver and whether the information is collected as quantity or in depth.

3.1 TYPO3

The first example stems from a research project that attempted to introduce usability in the development of an open source content management system—TYPO3 (Nielsen et al. 2006). We asked the users to perform an everyday task while using TYPO3. At the same time, they had to describe what they were doing. We observed their actions and subsequently asked them to explain to us what they had done. Below are excerpts of our notes after an observation and the subsequent interview:

> Yvonne is an editor; she is employed by a big Danish public authority and uses TYPO3 once in a while but not that often. Her work consists of editing a specific area containing advice and suggestions. She has no influence on the design and mostly she works in a way where she copies an existing advice and rewrites it in a new document by changing the text. When she needs to buy an image, she calls the web editor who then comes to her and does this for her.
>
> She is happy with the system and considers it stable. In the organisation, a manual has been prepared based on the specific needs of the individual user and their variant of TYPO3. The manual e.g. shows in detail what she should do to upload or change a document. Yvonne follows the manual every time she needs to use the system because she cannot remember what she did last time she used it. Yvonne is not an experienced user and she is unable to talk and use the system at the same time.
>
> By nature, Yvonne is patient and not prone to complaining.
>
> Yvonne shows us how overwhelming the system is to her even though her tasks often can be characterised as ‘copy and paste’ and then replacing text and images with something new.

Table 1 An overview of data gathering methods their advantages and disadvantages

Methods	Read existing material	Questionnaires	Interviews	Focus groups	Observations	Dairies (participants are asked to note activities in diaries. Entries can be collected via mobile phones, e-mails, or as written diaries)
Is used for	Alternative understandings of users, tasks, and contexts Inspiration for own research	Specific information	To understand individual attitudes and opinions	To investigate attitudes and opinions Research in areas for conflicts A focus on dynamics and relations between people	Observe users, their daily life, and tasks while it happens Insight into work tasks	Longitudinal studies Sensitive studies Studies where participants are scattered over large distances
Creates knowledge about	Procedures, rules, standards, and/or legislation on the area	Questions that demands specific types of answers: yes/no Choices between certain possibilities Assessments	Creates a room for talking to people Interviews can be: Structured—a fixed questionnaire that is strictly followed Semi-structured—a questionnaire with no fixed sequence	To look at the terminology established and used in a group Attitudes and perceptions (wishes, motivations, values, experiences)	What the users do in their daily life	Problems that the users encounter Consumption, e.g. of media and services Experiences and attitudes Can catch the activities while they happen and in the contexts they happen

Creates knowledge about		Free text Can include both quantitative and qualitative questions	Unstructured—a theme-based conversation			Activities can be ordinary or special. They can happen often or rarely The dairies can be structured with specific categories to enter They can be unstructured with room for collecting, dating, and describing events
Advantages	Easy available.	Good for getting answers to specific questions Answers from large and varied groups of people Answers questions of how many	Good for investigations of subjects and to get new knowledge Provides in-depth insight Answers questions of why	Good for insights from many people in a short time Focus groups can be used during the whole design phase: before the design begins in connection with redesign, early in the design phase in connection with competitor analysis and prototypes, and later in the design phase to identify and prioritise features	Good for understanding of the different nature of tasks and contexts	Easy to get knowledge from many, easy to get insights from participants that are not easy accessible

(continued)

Table 1 (continued)

Disadvantages	Is often not written for the specific area in focus.	Does not give answers on why people answer as they do	Interview takes time—both the actual interview, the transcription, and the analysis A limit to how many can be interviewed There is a discrepancy between what people say and what they do.	No focus on the individual Difficult to deal with sensitive subjects The group can create social control The group can create a false consensus	Demands time and engagement—can create a lot of material Requires that the researcher respects those observed	It can be difficult for the participants to remember to enter data. It can be time-consuming to enter data

'It is difficult to get the general idea of this because there is so much', she explains. When she replaces text she begins by finding the place first in 'web view', then she goes back to the back-end and finds the document in the hierarchy. 'I always become a bit nervous when I change something, what if I change something and it can be seen out there?'

Yvonne got an introduction to TYPO3 at an internal seminar and thought that it was easy to use while she was at the seminar but once she got back to the office it was difficult to remember what she had been taught. She says that if the system has been changed since her last log in: 'I don't even think that I would notice'.

Based on our observations and interviews, we began to understand what Yvonne's duties at work were: She works with editorial material where she very intermittently has to edit and upload a lot of pages. These were Yvonne's duties at work: She copies a page to the place in the hierarchy where the new text should be. She replaces an old text with a new text. She does not work with images but gets help. She cannot remember what to do. She is afraid that what she does will suddenly end up on the Internet. The following reflects Yvonne's attitude towards IT and the system in question: She finds it difficult to transfer her knowledge from other systems to this system. She does not understand IT but she is able to use IT. Yvonne's personality is she needs comfort and security. She is meticulous. She is patient. She is not prone to complaining. Please note that regarding the data collection, the focus is on data about the work area (what is done, how the job is done, how the system is used) and on the more personal areas (attitudes and personality). These data were compared with our observations and interviews with other users and were a step on the way towards a persona description.

3.2 Virk.dk

As mentioned, data comes from many different sources, also from pre-existing knowledge in the company that you work with. Regardless of the sources you use, the focus area is key, and this means that if you use pre-existing information, you need to look at this information through the lens of the focus area. I will illustrate this with an example from Virk.dk.

When we were preparing personas for Virk.dk, a target group analysis had already been prepared about the attitudes of the various lines of businesses regarding digital reporting. The analysis consisted of four parts: a register analysis, interviews with company representatives, a questionnaire with 800 Danish companies, as well as results from four focus groups (Epinion 2006). The problem with these analyses was that there was no focus on the actual reporting but instead on the attitudes of the lines of businesses towards reporting. If you look at the area 'reporting', then it is always a person doing the reporting and not a line of business. Thus, we went through the reports to see whether they said anything about those doing the reporting and about the actual reporting. This way, knowledge about reporting was brought to the surface of the material. At the same time, it meant that quite a lot of the knowledge from the surveys was not applicable in this context.

Originally, the persona method is qualitative, and knowledge creates a deeper understanding of circumstances, needs, and desires of people. For Virk.dk, this meant that data preferable should come from those using Virk.dk and not from management in the companies where the people doing the reporting are employed or from others that are in contact with the people doing the reporting. Ideals are one thing, reality something different. With the financial resources available, it was not possible to interview end users. Instead, the reports were supplemented with interviews with employees from the support centre in Communication and Marketing in Virk.dk (Kommunikation og Markedsføring—KMV).[3] The support centre came to act as an indirect point of access to knowledge about the users of Virk.dk which meant that we had to use some reservations in the processing of the data: The respondents had knowledge *about* the users. The users with questions about and problems in connection with reporting of sickness benefits dominated as KMV aggressively had marketed the possibility to report sickness benefits through Virk.dk. The employees were in contact with people who were not heavy users of Virk.dk as they spend a lot of time supporting weak IT users. Many calls were about the system being unstable and the frustration and problems of the users regarding the digital signature.

In the data processing, emphasis was put on sorting hypotheses regarding the users and get to the core of the information that could be documented.

3.3 Andersen Furniture

Before the data collection for Andersen, there was no formalised information about the customers of the factory. Andersen knows what shops sell their furniture and the sales people of the factory know the buyers in the shops but never meet the end users. From the beginning of the project, there were a number of hypotheses about the customers where we assumed that they were different depending on whether they lived in big cities or in smaller cities and that the interest in furniture was not the same among the young as the older generation and that the interest was the most pronounced among the young.

From the beginning, it was decided that data would be collected through a number of visits in shops selling Andersen furniture. Here, randomly selected customers would be interviewed. The visits would take place Saturday mornings where it is well known that you find the most customers. In order to take the hypotheses into consideration, the respondents had to differ in age and the shops to be located throughout Denmark. The interviews would be about purchase of furniture in general and only a few questions in the end about the knowledge of the customers about the furniture of the factory. In addition to this, in-depth interviews would be conducted

[3]The support centre has a double function as the employees both support users who call with troubles and phones out to companies when they have campaigns running.

with end users who had bought furniture from the factory. The contact with these customers would be obtained through the furniture shops.

Overall, approximately 50 people were interviewed in four towns and in Copenhagen, the capital of Denmark. The shop interviews lasted about 10 min, and the respondents had different ages but it turned out to be difficult to find the very young in the shops as the furniture is expensive and it requires a certain income to be able to afford this kind of furniture. Thus, most interviews were conducted with people aged 40 and older.

Subsequently, six home visits with in-depth interviews lasting 1–2 h were conducted. All the interviews were transcribed so that they were ready for analyses in the next process.

References

Epinion. (2006). *Målgrupper*. Intern rapport udarbejdet for Erhvervs- og Selskabsstyrelsen. Epinion A/S.

Kvale, S. (1996). *Interviews – An introduction to qualitative research interviewing*. London: Sage.

Nielsen, L., Bødker, M., & Ørngreen, R. (2006). How do you get developers to care for the itches of others?: Introducing usability to an open source community. In *The sixth Danish human-computer interaction research symposium* (pp. 13–14). Århus: Aarhus University Press, University of Aarhus, Denmark.

Preece, J., Rogers, Y., & Sharp, H. (2006). *Interaction design*. New York: Wiley.

Rasmussen, C. V., & Fischer, L. H. (2008). *Målgruppeanalyse*. Copenhagen: Nyt Teknisk Forlag.

Schutz, A., & Luckmann, T. (1973). *The structures of the life-world*. Evanston, IL: Northern University.

Schwandt, T. A. (1998). Constructivist, interpretivist approaches to human inquiry. In N. K. Denzin & Y. S. Lincoln, red, *The landscape of qualitative research* (pp. 118–137). Thousand Oaks: Sage.

2: The First Connections

One of the most important criteria for well-founded personas is that the material is sound. When step 1 is concluded and the relevant data collected, we need to work out what differentiates the users so that we can find both the number of personas and what constitutes their differences. Hopefully we will end up with descriptions like Karina, Jesper, Dorte, and Michael where the reader has no doubt that they are different people with different living conditions and background. *Step 2: You form a hypothesis* describes how you can analyse the data and then formulate a hypothesis concerning what differentiates the users from each other within the focus area.

You have to consider segmentation as the art of finding stories and patterns in your material (Mulder and Yaar 2006). I have always considered the process from the collected information to deciding the number of personas to be the most difficult. When collecting information about the users, you need to remember that the purpose of personas is to reduce a wealth of information so you can handle it in a development process. The challenge is not least that personas are a way of communicating data to all participants in the process so the readers can identify with the everyday lives of the users. At the same time, the descriptions must support the memory so all easily can remember the chosen personas. The goal is thus both to establish the number of personas and to determine what should be included in the descriptions.

1 Get the Meaning Across

In the next part, I will describe the various methods to analyse qualitative data. The qualitative methods differ from other methods by regarding information as subjective as everyone understands the world seen from their own perspective, conditions, and preconception. When information is subjective, it becomes impossible to differentiate between the way we understand the world and that which we may know. The way to access information is to interpret the data collected. Information is compared and this way knowledge emerges. Information

L. Nielsen, *Personas - User Focused Design*, Human–Computer Interaction Series,
DOI 10.1007/978-1-4471-4084-9_3,

must both make sense when you look at the individual parts and when you look at all the parts as a unity (Guba and Lincoln 1998). You could say that you need to be able to understand the individual interview, but it also has to make sense when you look at this in relation to the picture that the interviews make up together.[1] The purpose of the analysis is to deduce an applicable meaning (Kvale 1996; Kjørup 2003).

The way that the meaning emerges can be described as follows: First, *a coding* takes place where you look for units of meaning that each are given an explanatory headline. An example is as follows: In an examination about using personas, several quotes are about the decision-making process. 'This was the idea of our manager. He had been introduced to a persona in a seminar and launched this project because he felt it was a good idea and then money was also allocated for the project'. This quote could be given the headline 'management decision' while another has the headline called 'random decision'. At this stage in the process, it is important that the interpretation is critical towards whether the units fit the general purpose of the study.

Then, a *categorisation* takes place where groups of units are organised in themes that subsequently will be given descriptive headlines covering the contents, in this example both goes into a category called 'the decision-making process'. The categories can be formed either based on a hypothesis or directly based on the data collected. The themes are scrutinised to see whether there are conflicts or coincidences among them. If there are units that cannot be contained in a category, they will be rejected.

Finally, the *meaning formation* is rounded off where the themes are read both individually and in relation to the other themes in order to create a cohesive meaning. In this particular study, both the differences in why and how the participating companies use personas and a general impression of what is the common denominator for the use in all the companies.

The interaction between the parts and the whole is presented in the analysis methods: contrasting pairs, affinity diagrams, and coordinates. The three methods are based on literature about the persona method and personal experiences (Fig. 1).

1.1 Contrasts

Analysis based on the size of the different user groups and whatever contrasts they may include is a frequently applied approach. The various preferences of the users are set up in a number of contrasting pairs within the various parameters, and this

[1] The interpretation follows the principle of the philosophical hermeneutics, the circle, where a text is understood from its separate parts, and at the same time, the parts are seen as elements of a totality.

Fig. 1 Søren H. Laursen, M.Sc. student at ITU, has printed transcripts of five individual interviews on coloured paper. Every interview is cut up into six themes with subcategories that subsequently have been pasted on coloured background paper

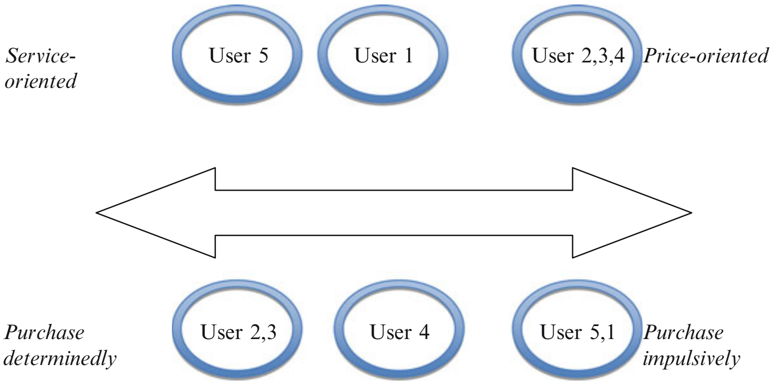

Fig. 2 The example illustrates various users' behaviour in connection with online shopping

provides an image of how many users are where (Goodwin 2002). When you are done, you have a general idea of all the users. Naturally, this method requires that you can create contrasting pairs, which is not always the case.

In Fig. 2, the contrast axes show that most users are price-oriented and focused when they are shopping while a smaller group shop impulsively and emphasise service. That means that there are two groups and thus two personas. You can therefore focus on the characteristic features of the two groups, for example, age and gender, and use them to describe the two groups.

1.2 Affinity Diagrams

The purpose of affinity diagrams is to show the affinity between various elements. Here, relationships are depicted without consideration for how many users there are

Table 1 This table illustrates a cluster hierarchy

Purchase behaviour			
Impulse purchase		Determined purchase	
Sudden decision	Purchase of small items	Spent time deciding	Purchase of larger items
Stumbled on to something that were bought	Bought a rubber spatula	Checked prizes	Bought a flat screen TV
Accidentally purchased	Purchased a key ring	Read reviews	Bought a kitchen machine

in each category. The diagrams consist of collections of themes (clusters) described by keywords where each cluster is grouped according to its relationship to other clusters. The relationships are surveyed by grouping clusters next to each other when they are connected in one way or the other. If there is no clear relationship, they are placed far apart. This way, you get a hierarchy of clusters (Table 1).

If we use the example of online shopping as our starting point, then there are a number of statements from the users where some say that they suddenly stumbled on to something that they bought. This creates a cluster about impulse purchases. At the same time, many also say that it is the little things that they buy impulsively. So now, we also have a cluster called ‘purchase of little items’. A third cluster is called ‘purchase of larger items’. Small items are close to impulse purchase while larger items are placed far away from impulse purchases. The clusters that are placed in close proximity constitute a group, and in this case, it can be named ‘impulse’. The result is a number of contexts that can express differences. Based on the differences, it is possible to create a hypothesis about how many personas there are and what makes them different (Fig. 3).

When all themes have been grouped in a finished diagram, it is often difficult to see how many personas are to be represented. I usually keep working with the diagram in order to get to different contrasting pairs that can be plotted into a system of coordinates.

1.3 System of Coordinates

Systems of coordinates combine relationships and contrasts and can also show how many belong to each group. It is a method that I often employ and it is a mix of the two previously mentioned methods. I deduce the number of personas by means of a system of axes stating differences and that has room for many dimensions. In the following, I will go through an example of how I use the axes and how I arrive at the final number of personas.

For the furniture company Andersen, there were three axes (Fig. 4).

When we looked at the three axes, we discovered a convergence between opinions about style and focus on known designers so these axes could be expressed by

Fig. 3 In the illustration you see a number of clusters with a headline. Every cluster has a number of subgroups (Affinity diagrams, CC: Copyright Jason de Runa 2007)

1. An axis concerning interest in design and knowledge of designers

– ⟶ +

2. An axis concerning emphasis on functionality when choosing furniture

– ⟶ +

3. An axis concerning style. Is style seen as individual expression or is style perceived as furniture bought to fit together e.g. (couch, dining table and chairs match)

⟵⟶

Style is individual *Style is matching furniture*

Fig. 4 The outcome of the analysis is a series of axes

one coordinate. The three axes were plotted in a system of coordinates in which the individual customer was placed (x is a customer) (Fig. 5).

Based on the system of coordinates, we were able to divide data into four categories: the customer who focuses on known and famous designers and who thinks that

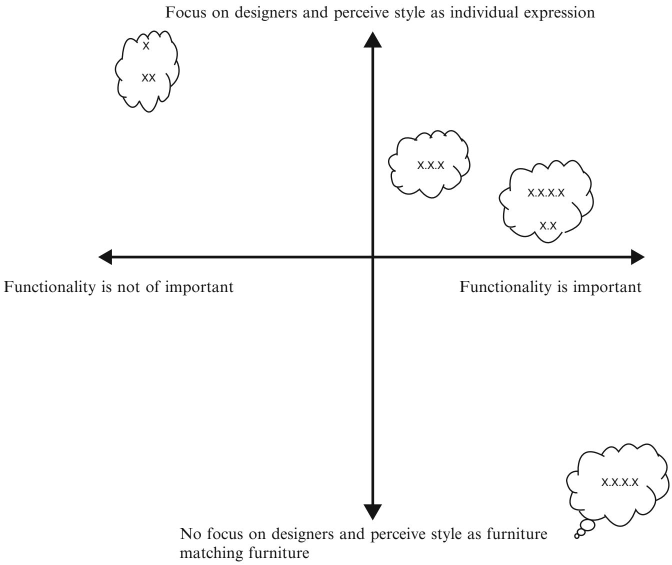

Fig. 5 The axes are placed in a system of coordinates

style is something that you individually create and who does not emphasise the functionality—termed 'the modern'; the customer with less focus on known designers who thinks that style is something that you individually create and who emphasises the functionality—termed 'the style makers'; the customer without focus on known and famous designers who believe that style is something individual and who, to lesser extent, emphasises the functionality—termed 'the classic'; and, finally, a customer who does not focus on known designers, who believes that style equals matching furniture, and who emphasises the functionality the most—termed 'the functional'.

Then, we looked at the common denominator within each of the four groups, such as age, education, income, attitude towards quality, etc. The common denominator would later be used in the individual persona descriptions.

When we took a new look at the group the modern, it dawned on us that from a production point of view, this group was not interesting for the company. The group prioritises that furniture is shaped by known designers and thus would not buy the furniture of the factory. Therefore, it was not necessary to make a persona for this group.

2 Use of Secondary Data

As was the case in Virk.dk, it is not always possible to get access to collecting your own data material. Instead, you have to settle for the accessible data. The data foundation for Virk.dk came from an analysis based on interviews and focus groups

Table 2 The table shows who does the reporting

Who does the reporting?	1–3 employees	4–15 employees	More than 16 employees	Total
Owner/manager	55 % (171)	30 % (94)	7 % (16)	33 % (281)
Administrative employee (accountant, budgets and accounts manager, bookkeeper etc.)	37 % (115)	65 % (202)	89 % (204)	61 % (521)
Auditor	5 % (14)	1 % (4)	2 % (5)	3 % (23)
Spouse	1 % (4)	1 % (4)	0 % (0)	1 % (8)
No one in particular	1 % (2)	1 % (4)	1 % (2)	12 % (8)
Others	1 % (4)	1 % (4)	0 % (1)	1 % (9)
Total	100 % (310)	100 % (312)	100 % (228)	100 % (850)

about digital reporting as well as from interviews with employees in the support centre. In Table 2, you can see one of the tables we used as a starting point (Table 2).

In the table, you can see that the smaller the company, the more the owner is doing the reporting himself or herself. The larger the company, the more an administrative employee is doing the reporting. There are also very small businesses that employ an accountant to do the reporting.

Thus, our hypothesis was: You can report for your own company (as owner or administrative employee). The company can be small with under 15 employees. If the company is small, it is the owner or the spouse who is in charge of the reporting. The company could also be big with more than 15 employees. In that case, it is an administrative employee who does the reporting. Or you could be employed to report for other companies, for example, as an accountant or an agricultural adviser.

When we had formed our hypothesis about the three groups, we started drawing on our interviews with the support centre staff to get access to more personal characteristics in the different groups.

3 Group Analysis

It is also possible to include the project organisation in the analysis. In several projects, I have worked with letting participants be part of the analysis. It provides understanding of the data material and also illustrates that the analysis work is almost art in its own right. Furthermore, in the analysis process, there is an ongoing verification of the available data which continually is compared to pre-existing knowledge in the organisation. A typical group analysis process is:

1. The material is made ready according to the principles about categorisation.
2. Every category is described on a card the size of a playing card.
3. The project participants are asked to group and name the categories.
4. When the categories are ready, the project participants are asked to pair the categories in contrasting pairs.

5. When the contrasting pairs are ready, all the material is noted down.
6. Subsequently, a new round of analyses takes place where categories are compared to the original data to verify the contrasting pairs. At the same time, the final number of personas is established and that which characterises each individual persona.

It may seem very elaborate, and when you are a trained analyst, it is definitely quicker to do the analysis yourself. But during the group analysis the knowledge is disseminated and immediately verified by project participants and the ones who have collected the data. It creates an engagement that should not be underestimated.

The focus of the next step is to confirm whether the interpretation is correct and whether the number of personas is adequate.

References

Dahler-Larsen, P. (2002). *At fremstille kvalitative data*. Odense: Odense Universitetsforlag.

Goodwin, K. (2002). *Getting from research to personas: Harnessing the Power of Data*. Retrieved January 20, 2010, from http://www.cooper.com/journal/2002/11/getting_from_re-search_to_perso.html

Guba, E. G., & Lincoln, Y. S. (1998). Competing paradigms in qualitative research. In N. K. Denzin & Y.S. Lincoln, red, *The landscape of qualitative research* (pp. 118–137). Thousand Oaks: Sage.

Halkier, B. (2002). *Fokusgrupper*. Frederiksberg: Samfundslitteratur.

Kjørup, S. (2003). *Menneskevidenskaberne*. Samfundslitteratur: Roskilde.

Kvale, S. (1996). *InterViews – An introduction to qualitative research interviewing*. London: Sage.

Mulder, S., & Yaar, Z. (2006). *The user is always right: A practical guide to creating and using personas for the web*. Berkeley, CA: New Riders Press.

3: Food for Thought

Step 3: Everyone accept the hypothesis is about whether you can confirm that the analysis is true and how you can use this next step to get as many as possible to feel ownership. The scientific designation of the process to get the analysis accepted is verification. Verification means confirmation, and in this case, it is about both asking the questions whether the data are good enough and whether they are adequate for the process ahead. In this chapter, I will go through partly what it means to have your data and your analysis confirmed and partly how you can include others in this work.

When you talk about whether a study is verifiable, it means whether you can trust the outcome of the study. That data are reliable does not mean, in qualitative research, that you are looking for a verifiable truth but rather that knowledge is obtained in a responsible and transparent manner. Therefore, it is part of the verification that the one behind the study must be explicit in motivating and describing every step in the process together with a presentation of the prerequisites of the study. Qualitative studies can move in many different directions and assume many different shapes, but there is a common principle: the study should be described in a way that makes it possible for outsiders to follow and understand how the study was planned, how it was analysed, as well as how the conclusions are reached. If this is possible, it is also possible to assess the quality of the study.

The verification happens on three levels that I will briefly go through: are the results of the study general, *generalisability*; are they consistent, *reliability;* and has the study examined what it set out to examine, *validity* (Halkier 2002; Kvale 1996).

1 Is It Possible to Generalise?

In the study, it is important to deal with whether the results obtained can be generalised to a bigger area. This can happen by, for example, arguing in favour of how the case that you are working with can shed light on a similar or bigger issue as

DOI 10.1007/978-1-4471-4084-9_4,

described in existing literature. The generalisation can be achieved both by means of argumentation and by comparison to existing material.

A project about staff canteens in Denmark can illustrate how you can work with generalisation. In the introductory phase, we read a lot of scientific reports and spoke to a number of researchers. The phase was rounded off by talking to experts with specific experience regarding canteen, food, and health policies. At a relatively early point, the analysis started to take shape. What separates staff canteens from each other is whether the work place has a food policy or not. In subsequent interviews with experts from the canteen area, we introduced this hypothesis and received both confirmation and elaboration.

This leads to refining the result and rejecting some underlying hypotheses. So at the same time as we were gathering data, the result was verified through generalisation.

2 Is the Analysis Reliable?

In qualitative studies, the reliability can be achieved by assessing whether data have been collected and processed in a proper manner. This requires that the data collection and the data processing are described explicitly and in a way that makes the processes transparent. Based on the descriptions and argumentation, the reader can assess whether a proper job has been done. A transparent process is especially important when the result is unexpected or goes against the pre-understanding of the company. In a presentation of an analysis result, I experienced that the management was unwilling to accept the conclusion because it went against their preconceptions of their target group. By introducing how the data were collected, how many we had spoken with, and how the information had been analysed, the management was able to understand the result and accept it.

3 Is the Study Valid?

Validity can be viewed as a discipline of argumentation where there are two ways to assess the validity of the analysis. You can control data, ask questions about data, and theorise over data; this can be done by asking yourself whether you have examined what you set out to examine and whether the analysis makes sense. Or you can achieve validity by getting feedback about the interpretation, for example, by sharing your material with people who are familiar with the issue.

When working with personas, some of the questions you should ask about your data are: What or who can confirm whether the data is sufficient and whether it is correct? Do I have the data that makes me able to fill out a persona description?

Have I also got emotional data, such as the likes and dislikes of the users, their expectations, attitudes, and values concerning the focus area? Have I collected enough data to create situations? When will the users, for example, use what we are going to design? In what context will it be used? Have I collected enough data to describe scenarios? Have I understood the end goals of the users? Have I understood what strategies the users will apply?

Before we developed personas for Virk.dk, we included others in the validity. In the first workshop, the purpose was to introduce the collected data and the interpretation of this data. The participants came from the client and from interested parties. Together, they had a lot but unsystematic knowledge about the users that came into play when they were confronted with the analysis.

Based on the information material, we had spotted an introductory pattern dividing users in seven categories with the following headlines: the IT weak all-round employee, the all-rounder with midlevel IT proficiency, the technically oriented, the technically oriented specialist, the professional, the self-employed accountant, and the entrepreneur. As we presented the categories to the interested parties, it sparked debates about whether the categories made sense and whether the categories were appropriate. Regarding the question whether the categories made sense, it was critical for the validity that the interested parties were able to recognise the categories. In the debates concerning whether they were appropriate, the group came to the conclusion that it is not sensible to call anyone 'the all-rounder' as this could create negative connotations. And it was discussed whether it made sense that two of the categories had a division of the users which solely focused on their IT proficiency while the rest of the categories did not focus on IT. This led to new designations for the categories, and some of them were merged while others were downgraded. From the discussions new stakeholders appeared – those the users may have to interact with when reporting digitally. They were named satellites at the workshop because they orbit around the users.

For further validity, several internal reports about Virk.dk were obtained from the client. Often, you can find a number of internal reports in the company once you start looking. It was also the case here where the Danish Commerce and Companies Agency's staff over the years had prepared a number of internal memos and reports about the users, for example, in connection with internal user test and introduction meetings about digital signature.

Both the discussions at the workshop and the reports were part of verifying data. You could say that if the participants understand how you arrived at a certain finding and can accept what is separating the users, then the argumentation is clear and consequently both reliability and validity are ensured. If the participants at the same time have knowledge about the focus area and can accept the analysis, then it can be assumed to be general and thus reliable.

But if it is not possible to get people in the organisation to verify a result, you can also approach experts or compare with reports from areas like the one you are dealing with.

4 Oppositions

Presenting the analysis can sometimes lead to opposition from the project participants. Often, a project group has certain attitudes towards and hypotheses about what makes the users differ within the given focus area. These assumptions are part of a common understanding of the users in the entire organisation. The attitudes can stem from prejudice or strategic decisions about what target groups you are attempting to reach. When the analysis shows a completely different picture, it can be difficult to accept. The work with Virk.dk contained an example of how an organisation has assumptions about the target group. Traditionally, the Danish Commerce and Companies Agency has divided the companies in Denmark according to line of business. However, Virk.dk is a portal for reporting, and the common denominator of the users is that they, to a larger or smaller degree, have an administrative function and that they all have to do reporting. That means that their focus is on getting the job done, to live up to any demands, and on meeting deadlines. Here, it is of no importance what line of business they belong to. In this case, the result was accepted without problems, and the project group experienced that it made sense. Other times, you may experience that the analysis result goes against the assumptions of companies, and this makes it more difficult to accept the result. As a manager once said to me when I was presenting an analysis result that went against his perception of the clients, 'I don't believe that'.

At this stage, the data of the persona process has been presented and the analysis confirmed and hopefully accepted. The next step is making the decision about the final number of personas.

References

Halkier, B. (2002). *Fokusgrupper*. Frederiksberg: Samfundslitteratur.
Kvale, S. (1996). *InterViews – An introduction to qualitative research interviewing*. London: Sage.

4: The Final Number

The analysis has now been concluded, and a picture emerges of how many personas the project should have. But the final number has yet to be decided. *Step 4: A number is established* includes strategic decisions about who belongs to the user group. This also contains decision about what areas that are to describe the various personas. As this step entails certain strategic implications, it may be important also to include the decision-makers in determining the final number. One of the questions often put to me is: 'How many personas must we have in order to be covered?' But as one of my partners said, 'It should be more expensive to prepare a few personas than many'. The reason that it should be more expensive to prepare only a few personas is that the purpose of personas is to reduce data to usable sizes that are both representative and workable. This includes a number of personas that you can actually remember. At this point in the process, it is also determined whether the project has secondary personas. They may be secondary because they have no direct relationship with the product but still should be kept in mind or because they have to be included due to political reasons even though they most likely will not use the product. Let me give you four examples that each in their own way describes the process with determining the final number of personas.

1 Virk.dk

In the process with Virk.dk, we realised that our personas were not, so to speak, alone in the world but that their use of the web portal depended on a number of external interests that we also had to include when designing the system. At the same time, there were a number of secondary personas that should be able to use the portal but where the likelihood of the portal being their access point to reporting was very slim.

L. Nielsen, *Personas - User Focused Design*, Human–Computer Interaction Series,
DOI 10.1007/978-1-4471-4084-9_5, © Springer-Verlag London 2013

In the analysis, we had identified a number of categories that were based on how many administrative functions the various users had, their IT proficiency, the amount of reporting they had to do, and their relationship with Virk.dk. The groups were:

- The IT weak all-round employees in small companies who perform many different tasks throughout a workday
- The all-round employees with mid-level IT proficiency employed in smaller companies performing many different tasks throughout a workday
- The technically oriented employed in a larger company with focus on reporting
- The technically oriented specialists reporting within a narrow specific area where they typically report through another website (e.g. an application for approval of fireworks articles reported to the Danish Safety Technology Authority)
- The professionals who report on behalf of others (e.g. accountants or agricultural advisors)
- The self-employed accountants reporting for others
- The entrepreneurs who has to learn how to report

After discussions and acquiring new knowledge, a new parameter was introduced: access to IT support. The main emphasis was now on how much reporting takes up of the users' everyday lives. This gave us the following new categories:

- Those without focus on reporting and without IT support (corresponding to the categories 'the IT weak all-round employee' and 'the all-round employee with mid-level IT proficiency')
- Those with focus on reporting and with IT support ('the technically oriented')
- Those who report on behalf of others and with IT support ('the professional', 'the self-employed accountant')

It was deduced that the technically oriented specialists would not report through Virk.dk but would prefer other sites. The entrepreneur also has his or her own site and would not use Virk.dk until later in their business development. These two categories became secondary personas because they were not going to use Virk.dk extensively, but nevertheless, they should be able to use the site.

We also found that when the four primary personas report, then they may interact with several different authorities: their system administrator who will set up their digital signature, the person authorised to sign for the company who must give permission to that the one doing the reporting does so digitally, and the caseworkers at local and government levels who receive the reports. All these authorities were gathered in a group of interested parties—influencers—who may help or resist when it comes to digital reporting. Thus, we ended up with four primary personas, two secondary personas, and three influencers. By reducing the number of personas and ending up with three influencers, the project became more clearly aware of the fact that what is important to the portal is how often the users report, who they report for, and how they do their reporting.

2 Furniture

We found that what separates the end customer who buys a piece of the factory's furniture in a furniture shop is their attitude towards style, design, and how much they care about functionality. On this basis, we established four categories. When we went through them, it dawned on the project group that one of the categories, 'the modern', was a small group who would not buy the furniture of the factory as they care about the furniture being created by a famed designer. As such, this group was of no interest to the furniture factory. Thus, the final number was reduced to three personas. By eliminating this group who buy furniture based on whether the name of the designer is famed, the factory could target the other groups and their needs by developing their communication and marketing strategies and their services. This also resulted in an awareness of how important it is for some customers to know the name of the designer. The factory started to emphasise the name of their leading furniture designer more. In Table 1, I have included the characteristics of the four groups as well as the starting point for the persona descriptions.

3 Mobile Service

The development of a location-based mobile service had a very pragmatic approach to the persona method. The client was a large technology-driven company within mobile navigation services. The purpose of using the method was not to use personas to develop mobile services but rather to make the client aware of the fact that they had different target groups and that it could be valuable to look at the users in the design process. At the beginning of the project, there was a detailed description of the technology but only vague perceptions about the users focusing on age and technology use. Over a few days, the project was to develop a prototype for a mobile navigation service providing information about events at a given place and at a given time.

In the project, there was no data collection, but instead, we used the segmentation tool conzoom®. We studied the descriptions in detail to see how much the various segments go out and what they do when they go out. This provided a subcategorisation that had the headlines Spontaneous and Planned use of the city. In Table 2, you can see how the segments are distributed, and it is clear that those who go to the cinema, clubs, and rock concerts do not visit exhibitions, museums, the theatre, and classical concerts. The only segment that does a bit of everything is the Suburban Singles. The City Pulse goes to the cinema too, but other activities are more planned. We were now able to see that Career Starters, the City Singles, and Student Life look alike. Cosmopolitans and The City Pulse share similarities, and the segment Suburban Singles is similar to both categories (Table 2).

When we were able to study our data in detail, we discovered some common features regarding age and income. It made us move the Suburban Singles to the category

Table 1 Characteristics that were uncovered in the analysis and turned into four personas

The traditional	The functional	The style creator	The modern
All are familiar with the shop they buy from. Half of the participants know the furniture factory Andersen	All are familiar with the shop they buy from. Half of the participants know the furniture factory Andersen	All know the furniture factory Andersen.	All are familiar with the shop they buy from. None of the participants know the furniture factory Andersen
The largest group	The second largest group	A small group	A small group
Between 41 and 78 years of age. Average age is 56 years	Average age is 40 years	The oldest group. Average age is 58 years	The youngest group Average age is 39 years
Education: short- to medium-length education, for example, social/ health care workers, police officers, teachers	Medium-length education. The group has many managers	Medium-length to higher education	Work in jobs where aesthetics are valued, for example, graphical designers and as chefs
Does not use the Internet to look for new furniture	Use the Internet to look for new furniture	Use the Internet to look for new furniture	Use the Internet to look for new furniture
This group likes a classical Danish design style with elegant and uncluttered lines, lightness, and simplicity—a minimalist style. They also value that the home feels nice to be in The group emphasises to create a style by mixing old and new. They prefer an individual style and values that you shouldn't buy what everybody else has The group has many different words for quality:	For the functionals, the furniture should match preferable in a set They want the furniture to create a whole, which provides tranquillity and uncluttered lines The group values functionality. They value function more than easy maintenance and aesthetics. Both easy maintenance and aesthetics are important though The group has rules for what is allowed and what is not. When you watch	This group is interested in design. They are familiar with famous designers and their furniture. They are not afraid to mix furniture from different designers with different styles Style is something you create, and they value that they are able to create their own style where different furniture creates a whole but not at a cost where the room isn't cosy	This group is very conscious about style Things should match. But things can match too much The group is conscious about the newest trends Style is edge Style equals simplicity Style is in the detail Aesthetics is important Quality equals durability Quality is function

You can feel quality both on the outside of the piece and on the inside It is quality when you can see that work is put into every detail Quality is good design and simple design, for example, when a door slides smoothly and when it is nice to touch the furniture Quality is connected to use value You can measure quality Quality is when something is expensive	television, it is not allowed to put your feet up on the coffee table, a nd the children are not allowed to eat at the good table This group values classical and timeless design. Furniture should look light, and they appreciate a simple style For this group, quality equals conservatism and long durability Durability is more important than price	Functionality is not the most important When the designer's name is renowned, you are sure to get quality Furniture is also an investment For the group price and quality are connected The group values easy maintenance the least	Quality is proper wood also inside the drawers; it is robustness, heaviness, detail Functionality and quality are connected
They value quality over the design Many in this group are looking for a dining table for special events	This group is looking for a dining table for special events. They dream of a large dining table that fits their new dining room. The table should be minimalistic in style, light wood, functional, with table extensions with space for many		Looks for a dining table for everyday use
	Long decision process Many has rebuild the house or moved to a new house		Long decision process

Table 2 The different segments and their use of the city

	Goes to the cinema (min. monthly)	Goes to the disco (min. monthly)	Goes to pop/rock concert (min. half-yearly)	Goes to museums (min. half-yearly)	Goes to art exhibitions (min. half-yearly)	Goes to the theatre (min. half-yearly)	Goes to classical concerts (min. half-yearly)
	Spontaneous	Spontaneous	Spontaneous/ planned	Spontaneous/ planned	Spontaneous/ planned	Planned	Planned
The Danish population on average	*14.9*	*06.6*	*17.8*	*25.7*	*21.7*	*26.4*	*31.0*
Cosmopolitans		03.6		52.8	48.6		
Carrier starters	30.3	23.4	39.4				
City pulse	29.3			49.1	43.3	41.0	45.4
City singles	22.9	11.8	26.2				
Suburban singles	22.1	10.2			25.9	31.5	
Student life	29.7	25.0	35.9				

for Planned use as they match in income and age. The City Pulse fits both categories, both regarding use of the city, age, and income. The final categories were:

Spontaneous Use of the City

(Segments: Career Starters, City Singles, Student Life, City Pulse)

- Age: 17–30
- Singles
- Well educated
- Low to middle income
- Small rented flats
- Students
- At the forefront of technology
- Use email and Internet every day
- Cinema, nightclub, bars, rock concerts, theatre, exhibitions

Planned Use of the City

(Segments: Cosmopolitans, Suburban Singles, City Pulse)

- Age: between 30 and 49
- Singles and couples (the couples have had children late in life)
- Owner-occupied flat or house
- High level of education
- Work within the public sector, hold managerial positions
- High income
- Use email and Internet every day
- Culture, theatre, art, classical concerts, and cinemas

The two categories became two personas, and the information that characterised the various segments became part of the persona descriptions. Now where the project had two descriptions of different user types, it became much easier for the project group to understand the differences in the users' needs and their requirements to the mobile service.

4 Website for Asthmatics

The pharmaceutical company AstraZeneca had launched a website where asthmatics could monitor their asthma and get feedback on their medication. On this site, there were also articles about asthma and allergy.[1] The GP of the asthmatic

[1]This project was part of my research when I did my Ph.D.

could follow the course of illness of the patient. AstraZeneca had used many resources to develop the site but unfortunately there were not many users. The purpose of the persona process was to create understanding of the users in order to redesign the website.

The site had three target groups: asthmatics, family of asthmatics, and GPs. In the analysis, we had discovered that asthmatics are different from each other in the way that they handle their disease. Some asthmatics neglect the fact that they are ill and feel that they will have a better life if they do not think about their illness. Other asthmatics attempt to control their illness and feel that their life is better if they are in control of their illness. The family members of asthmatics are all women but nevertheless different. Some family members know a lot about the illness and about what triggers an asthma attack, often more than their GP. This especially applies to family members of gravely ill asthmatics who have suffered from this illness for a long time. Their need is that they want new and detailed knowledge. Other family members, especially of the newly diagnosed, do not need either knowledge or news but want to know how to act. The GPs are all similar. This project was done in 2003, and GPs did not go online as often as the patients did, and they had very little time for the individual visit. Based on this, five categories were established: partly 'the controlling asthmatics' and 'the negligent asthmatics'; partly two categories of family members, 'the emotional mothers' and 'the professional mothers'; and finally 'the GPs'.

We were able to see in the data material that 'the professional mothers' often suffered from asthma themselves and that their attitude towards asthma was to control it. Therefore, we chose to merge 'the controlling asthmatics' and 'the emotional mothers' into one persona description that would apply to different situations.

From data, we were also able to see that there were just as many men as women who could be said to neglect their illness. From other studies, we knew that there are many young men who neglect their asthma. At the same time, they have problems facing that they have asthma. AstraZeneca wanted to be able to reach this group so that they could receive better treatment, and this was a strategic goal of the site. Thus, 'the negligent asthmatic' became a young man, a choice based on a business strategic decision and which at the same time was not in conflict with gathered information.

Furthermore, a strategic choice was made for the doctor. Today, there are more male GPs than female. But in the future, there will be more female GPs than male. At the same time, AstraZeneca believed that younger doctors were more prone to use new technology than the older. Thus, the persona became a young, female doctor.

'The emotional mother' was not part of the persona portfolio because she is only looking for information. So even though the company wants to service this group, it was not part of their business foundation.

Based on these considerations, three personas emerged:

- A female who controls her asthma and with an asthmatic child. She has characteristics both from the asthmatic who wants to control his or her illness and from the group we have named ‘the professional mothers’. Thus, she has various demands to the information, depending on the situation that she is in.

- A young man who neglects his asthma, has trouble complying with his medication, and hides the fact that he suffers from asthma from his friends.
- A female GP who prioritises spending longer time with her patients than she is paid for.

When the number of personas has been established, the next step is to describe them.

5: Do You Know Karina?

When I began working with personas and read the first descriptions, I was surprised at the way the writers described other people. It was obvious that not much thought had gone into how the reader would perceive the person or what understanding the reader should get of the person. In some descriptions I had, as reader, the feeling that more effort had gone into the fact that the IT system was to be used by a person but none into who the user was as a person. At the same time, the user's motivation for using the IT system was not very probable but something that the writer made up because there needed to be a reason. Harry is such an example:

> 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. (Carroll 2000, 33)

When you read the description of Harry, it is difficult to understand who he is as a person, there is no presentation of where the usage takes place, and it is difficult to understand why he should investigate harmonious fluctuations. I don't think that the writer put much thought into how Harry is perceived by the reader.

Another example I found was a description of the webmaster Karen (Fig. 1).

Karen is described as follows: a perfectionist, always well dressed, never makes mistakes, a workaholic, controls everything that others do, knows what she wants, works out every night, especially loves spinning, and lives with her cat and her boyfriend. Through her perfectionism, Karen controls everything and everybody. In the description, she is not seen as a human but more like a machine. The description of her emotional relationships is quite curious as the cat is mentioned before the boyfriend. The description of Karen is one-dimensional. She is a stereotypical person with only one characteristic, namely, being a perfectionist.

I have encountered many stereotypical persona descriptions, and here in *Step 5: You describe the personas*, I would like to explain how you can be inspired by literature

L. Nielsen, *Personas - User Focused Design*, Human–Computer Interaction Series, DOI 10.1007/978-1-4471-4084-9_6, © Springer-Verlag London 2013

Karen Gross. Occupation: Webmaster; age: 28; technology: early majority; Quote: *Stanley I need this today please?*

Karen owns the content on the site. And when she says *owns*, she means it. She's a perfectionist, always immaculately dressed, and she takes pride in making sure no typos, no incorrect information, and no bugs or other glitches ever find their way into her pages. When they do, she rallies the troops to get them fixed immediately. Karen has managed web content for about 3 years, but joined Joe's Photo about 4 months ago. She is a workaholic and a micro-manager that likes to keep a close eye on the status of all portions of the site and in production.
Karen has previously worked in Corporate Communications and pays close attention to the image that the Web site presents. She doesn't do any programming, but knows HTML and has dabbled a little in graphic design for the fun of it. She is very specific in what she wants, and she works closely with the template designer. Karen enjoys knowing the site looks and works perfectly. She is always looking for ways to improve it and wants immediate notification when things need changing.
She always takes time to workout every evening, her favorite are the spinning classes on Thursday nights. She lives in an apartment in Soho with her cat and her boyfriend, whom she's been seeing for a year now.

Fig. 1 An example of a stereotypical persona (Glaze 1999)

and film to describe people who are perceived as 'real'. It is key that the described characters are portrayed so that the reader of the description immediately can envision a 'real' person.

1 Persona Descriptions Must Be Used

When you prepare persona descriptions, you need to keep in mind that they must be usable by the many different professional competences that are involved in a project. This could be as follows: *the management group* where the descriptions are used for strategic decisions about both the present users and the potential users; *the project group* that needs to be able to identify with the persona descriptions and use them to make general decisions about the direction of the project; *the designers,* both those who design product features and those who design the shaping or graphics, who must be able to identify with the descriptions and use them to make decisions about details; and finally *test managers* who need the persona descriptions to recruit users for product tests.

The many and very different usages create a lot of requirements for the descriptions as well as considerations of how the relationship is between the personal descriptions that provide the possibility of empathy and the technical descriptions that provide insights.

When the descriptions are in use, it should be possible for both designers and the project group to engage in the personal descriptions to understand the different personas needs, work flows, use situations, and the various contexts of the personas. At the same time, test managers should be able to understand the data that are the foundation of the descriptions, so that these can be applied as a basis for recruitment (Fig. 2).

This is the full text about Dorte, one of the four personas of Virk.dk. Dorte has been used for the development of Virk.dk for several years and works very well as

Dorte, 53 years old, works as a secretary in her husband's plumbing business in the suburb of Copenhagen. There are 5–6 assistants and apprentices in the company

Background

When Dorte was very young she was trained as an office clerk in the accounts department in a department store in Copenhagen. She was married at the age of 21 to Jan who had just gotten his skilled worker's certificate. They have two grown sons who no longer live at home in the combined house and workshop/office. They visit frequently as they still enjoy mum's cooking.

Dorte likes to keep up with fashion. She often goes to the hairdresser, loves vibrant colours, and elegant shoes. When she reads women's magazine she looks for little tips that she changes and makes her own. She is always smartly dressed and stays fit.

Dorte loves travelling to faraway countries, most recently a trip to Vietnam this summer. Before they went she spent time reading up on the country and also watched the film Indochine with Catherine Deneuve. Dorte is always discussing the vacations with Jan who would prefer to go to Rhodes with old friends but it is Dorte who has the final say about the destination.

In an average day, she tends to drink too many cups of coffee and when the going gets tough with the telephone ringing and she can't reach the assistants she also tends to smoke a bit too much.

Dorte makes payments to the Danish early retirement benefit scheme and she looks forward to the day where she no longer has to be the 'mum' of others anymore and can spend more time travelling.

Computer Use

Dorte does the accounts and the bookkeeping, VAT, taxes, vacation pay, the Danish Labour Market Supplementary Pension ATP, etc. She uses a mini financial manage- ment system that she masters after many years of use but sometimes the system is not completely logical.

If she were to use other systems or use new, digital reporting, she would prefer it to be demonstrated to her by someone else. She is unable to learn something new when it is just explained to her and she abhors reading user guides. It takes her longer to study something new and familiarise herself with it and she tends to see more limitations than possibilities in new IT. Dorte often underestimates her IT proficiency and overestimates the time that it will take to learn something new so she stalls before she even gets started.

If she needs IT help, it is her oldest son and, in more rare cases, her girlfriend who provide the support. The girlfriend works in a big company and is a super-user of the financial management software.

Reporting

It is Dorte who handles tax cards. She handles and reports the wages, vacations, sickness benefits, and maternity leave of the staff. She reports the VAT and annual accounts of the company. Furthermore, she reports to Statistics Denmark and the Employer's Reimbursement System AER.

Dorte does not understand the logic of the IT system and does not trust that everything happens, as it should. If she reports digitally she would like a confirmation saying that the recipient has received the report.

Her Workday

- She is not involved in the plumbing business as a trade, but she knows all the technical terms
- She tidies things up. She does not want the others (her husband and the assistants) to make a mess, as she is the one who has to look at it all day 'Tidy up after your-selves! Your mum does not work here!'
- She digs in and sometimes has to keep many balls in the air
- She holds the fort but does not get a lot of professional recognition in the company from the boss/her husband
- Answers the telephone, handles mail, deliveries of goods (including invoices and delivery letters), and email
- Handles the accounts/some bookkeeping and writes invoices
- Makes coffee
- Occasional contact with accountant
- Invoicing of clients
- Sends/delivers mail every day
- Sends reminders
- Handles customer contact (including damage control)
- Also walks the dog

Future Goals

Dorte's dreams for the future are about a time where she no longer has to work and where she can spend more time travelling. Is still debating with Jan whether they should travel or buy a summer cottage where they can live all year round when they retire.

Fig. 2 The full description for Dorte, one of the four personas for Virk.dk (2007)

a story, but if I were to describe Dorte today, I would make her background shorter and more concise. The structure of the description is exemplary with frequent use of short paragraphs providing insight in the technical areas that should be included in the systems design.

But before I move on to describe what we can learn from stories when we describe personas, I will describe the difference between a stereotype, an archetype, and a persona. I do that partly because often personas and what for many years in the advertising world was called archetypes are mixed up and partly because the concept stereotype for me is important to keep in mind when you are working towards a 'vivid' description of another person.

2 Stereotype, Archetype, or Persona

It is a common thread of this book that you should avoid stereotypes, meaning simplified, clichéd ideas and what this concept furthermore covers. The concept stereotype is not unequivocal but can be understood both based on a cognitive, a social, and a narrative approach. In the cognitive understanding, creating stereotypes is a shared human condition that we cannot avoid (Hinton 2000). Stereotypes are internal, mental constructs (schematas) that occur from the way that we humans create knowledge. We have a limited, mental capacity and thus a tendency towards categorisation. When we meet new people, we compare them to people we have met before and provide them with properties that fit our own experiences. Briefly put, we convert them into a category of people who are alike (Bartlett 1932). When we have categorised a person, we describe him or her in a stereotypical fashion.

But stereotypes are not only something used by the individual. They are also social representations that are shared by cultures and societies. Stereotypes can give one social group a shared explanation as to why others act the way they do.

Both the cognitive and the social approach to the concept stereotypes can explain the frequent prevalence of one-dimensional persona descriptions. They stem from the individual categories and social understanding of the world of the writers. In the case of Karen, the categorisation is about that perfectionists are workaholics who work out every night.

With the persona method, the purpose is to create empathy, engagement, and identification with the users so that it becomes possible to understand their world and create solutions for them. Thus, the categorisation and the use of flat characters is not the preferred approach of the persona method.

In the article 'Is Stereotyping inevitable when designing with personas', the authors (Turner and Turner 2011) argue that stereotypes might include a grain of truth, for example, the young iPhone user that reflects the truth that most users of iPhones are young, and they are also very effective as they are easily understandable and part of our cognitive readiness. Stereotypes might be useful, as they can comprise a number of tensions, because the stereotype can be both a negative representation that excludes a category and a positive one. I will argue that the authors overlook how stereotypes prevent engagement. In the perspective of stories, the stereotype is a so-called flat character with only one character trait and who does not create engagement or identification.

Fig. 3 Excerpt of a persona for citizens' services in the city of Aarhus prepared by the design company 1508. Author's translation

On occasion, you do encounter a persona description that draws on categories to differentiate one persona from the other. Sometimes the category designation is used instead of a name. If you choose to do so, you need to be aware of the fact that what you name the category could prevent the reader from engaging in the description (Fig. 3).

In the example of the persona 'the impatient', it may be that 'impatient' expresses both something positive and something negative. This may mean being action-oriented, but it may also refer to someone who does not have the patience to wait. Here, you need to make sure that Pernille does not come across as somebody annoying. The purpose of the persona description is that Citizens' Services can offer Pernille assistance with the challenges that she faces. The text expresses that she feels that the personal chat gives her a sense of assurance that she may not be getting from going online herself. So the assurance aspect should also be covered in the discussion as to what services Pernille would need.

3 People as Form

Archetype comes from Greek and means form or pattern. The archetype builds on the ideal that there are some basic human patterns, a number of combinations of characteristics that are stable and can describe the individual person. Jung (1971) described these archetypes as personality traits and applied three dimensions to characterise the psychological preferences of each person: extrovert-introvert, sensory-intuition, thinking-feeling. I have seen many descriptions of archetypes and also instances where they are mixed with personas. The types are often described in a negative fashion even though this is not a characteristic of the typology in itself. An example is the Confederation of Danish Industries that has developed eight employee archetypes among which are Rita Rumour-monger and Clive Contrary and Theodor Task Teflon.[1] The idea is for you to be able to identify with an employee type. Every type is called a name that expresses a negative categorisation. The categories are difficult to identify with, and I doubt that anyone would want to see himself or herself as a Clive Contrary or Rita Rumour-monger. They are difficult to like and also express certain gender stereotypes. Why are rumour mongering associated with the women? How they are to be used is somewhat difficult to understand.

In contrast to archetypes, the persona descriptions are not general but written based on the focus area that you are working with. At the same time, there is a clear purpose of the descriptions, namely, that we by identifying with the users can create new and better products.

4 Stories for Inspiration

Even though persona descriptions have commonalities with stories it is not well described in the persona literature how an understanding of the content and structure of stories can contribute to creating better persona descriptions.

What a persona description should include and how it should be structured is not unequivocally described. Pruitt and Adlin (2006) believe that the persona description should have a precise relationship with data so that it is possible to relate directly from information in the persona description to the data on which it is based. Cooper et al. (2007) writes that there may be a small degree of fiction involved, meaning information that does not stem from the data collected.

Seen from my point of view, the relationship between data and fiction is a relationship between information that should communicate data and information that should support that the reader understands and can engage with the persona. This means that I have no reservations when it comes to using fiction but rather consider fictitious elements as a means. Fiction, however, is a powerful means that can cause problems if the writer is not aware of the strengths and weaknesses of the means. My use of fictitious means is especially about how characters are created and included in stories.

Generally, the fictitious story can be described on many levels: as a genre, as a presentation with a plot, as a story with a certain structure, or as character development. If you compare the persona description to a film manuscript, it most of all

[1] Author's translation, http://www.newsmarket.dk/nyhed.asp?id=7492

looks like the notes that a scriptwriter makes about the character before writing the actual manuscript. The script itself can be compared to the descriptions of the actions that are likely to appear in a corresponding scenario, but more on this later.

5 Engaging Stories

It is not all stories that require that the reader immerse himself deeply into the characters. Just think of the simplest form of crime novels or commercials. The difference regarding the two story types, the character-driven and the plot-driven story, encompasses how the characters are described and what role they play in the story. In the first type of story, you are invited to participate in the character's thoughts and development. Here, it is aspects of their character traits that make the story move forward. In the other type, it is more the movement forward of the central plot towards solving a riddle, obtaining something valuable, or the like that drives the story forward. The interest of the reader is here primarily to follow the course of events. When you use the persona method, the character-driven story is the most interesting because you have to be able to identify with the persona and understand the motivations for actions. It is in this type of story that we can find inspiration for writing in such a way that the reader can identify with a persona.

In the world of film, you typically see the character-driven narrative in stories where the main character has to go through certain trials and tribulations which bring the character to develop as human being and ends by emerging as a new person. This type of character is called the rounded character. The rounded character has more than one character trait, and the action is driven by the contrasts in these traits. The spectator can identify with the struggle of the rounded character and is invited to immerse himself into the world that surrounds the character (the spectator is engaged). An example is the persona Kira who is described with more than one character trait; she is a daydreamer, forgetful, and mislays things. At the same time, she is very controlled, which is described by her both being smart and well read and her ability to bake complicated cakes:

> Kira is in the last year in high school, she has various odd jobs to make money for clothes, parties, and vacations. She cleans, babysits, and has just gotten a job to pack and ship CDs for a small, independent record company. That suits her fine because the warehouse is right next to her high school so she can go directly there on her way home or before going to hang out with her girlfriends. Kira is a dreamer, she is well-read and smart but she is prone to daydreaming and to drifting off. She does a lot of fun activities with her friends but her passion is: chocolate cakes. This does not show at all on her tall, skinny frame but she bakes and consumes the most advanced cakes.

When we work with a persona, we want the reader to be able to identify and engage with the description. Thus, it can be useful to think about whether you have described more than one character trait or whether you have described a stereotype and just repeated the same information in many different ways. Often, it only takes a few adjustments to counter that the description seems stereotypical.

6 Thelma & Louise: Recognition, Alignment, and Loyalty

In order to understand and develop products from the point of view of the user, a designer has to be able to put himself or herself in the shoes of the user and understand the focus area from his or her point of view, including the need for the product and the user requirements for the product. The persona method can strengthen both engagement and understanding of reality (Grudin and Pruitt 2002). But what does it take to be able to engage with the descriptions of another person?

INTERIOR. RESTAURANT - MORNING (PRESENT DAY)

```
LOUISE is a waitress in a coffee shop. She is in her early-
thirties, but too old to be doing this. She is very pretty and
meticulously groomed, even at the end of her shift. She is
slamming dirty coffee cups from the counter into a bus tray
underneath the counter. It is making a lot of RACKET, which
she is oblivious to. There is COUNTRY MUZAK in the b.g., which
she hums along with.
```

INTERIOR. 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 night-
gown. 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.
```

(Thelma & Louise. Final Shooting Script, Khouri 1990)

This is the beginning of the film script for 'Thelma & Louise'. Already on paper, we get at sense of who the two people are, how unsatisfied they are with their lives but also their differences: Louise who is in control of things (meticulously groomed) and Thelma who is a messy person and who does not finish things (an obvious 'do-it-yourself' attempt), all this expressed by only a few lines of text. It is my ambition that when we work with personas we must be just as good at describing the users as the scriptwriters are at describing their characters.

Thelma and Louise are so-called rounded characters. In the following, I will describe how such a character is created as well as what the description of a rounded character must include in order not to be a flat character.[2] The character is what draws us into the story and makes us engage with the development of the story. When the spectator or reader engages with the character, it happens on three levels:

---

[2] The framework to create engaging personas that is described here originates from two sources: theoretical/analytic and creative/concrete sources. What can engage a reader focuses on reception of texts and on how the reader can engage in the character. How to engage a reader has it underlying basis in the creative process with creating a character and what a character description should contain in order to engage the reader.

recognition, alignment, and allegiance (Smith 1995). Recognition happens when the reader uses the information available to construct the character as an individual person. In the example of Thelma and Louise, we use the information that Louise is well groomed even at the end of her shift to understand her as a person who cares about her appearance. The alignment happens when the reader can identify with the actions, knowledge, and feelings of the character. In the example of Louise, the reader can imagine how he or she would look at the end of a shift at a diner. The last level, allegiance, that includes the moral evaluation that the reader makes vis-à-vis the character but also the moral evaluation that the text allows the reader to create. The allegiance is thus both dependant on the access to understand the actions of the character and the reader's ability to understand the context within which the story plays out. In the description of Thelma, the reader can morally evaluate whether it is okay still to be wearing your pyjamas as the day gets on. This information, along with the information that Thelma is not someone who does the dishes directly after dinner and apparently does not finish things that she has started, gives the reader the opportunity to assess Thelma based on his or her own moral compass.

All three levels of engagement contain opportunities for both sympathy and empathy. Sympathy is not possible until the reader is able to recognise what is being described. Thus, the sympathy stems from the description itself and from the knowledge and experience of the reader in areas that are similar to the writing. Empathy is part of a process where the reader attempts to understand the feelings of the character by testing various feelings that fit the situation of the character—it is an emotional simulation. At the same time, there may be emotional copying, a form of involuntary response imitating the feelings of the character, for example, a feeling of being sad when the character feels sad. In order to feel empathy, it is not necessary that the reader shares the values of the character or the goals of the character. The reader can easily feel empathy with a character who is, for example, a murderer. But for the reader to engage, it has to be possible to feel both sympathy and empathy. This means that engagement partly is created based on the information that the text provides and partly based on the reader's own experiences.

When a designer is to understand the world of the user and create something new for him or her, the three levels of engagement are significant. Based on the persona description, the designer must be able to feel both sympathy for and empathy with the user and understand the contexts in which the user will use the product. The further these are from the experiences of the designer, the more explaining is needed to provide the opportunity for recognition, alignment, and allegiance. An example can be seen in this quote from an Indian designer:

> I have always found it difficult to visualize or understand the characters illustrated in the books of P.G. Woodhouse because all are British personalities and I have not lived in Britain long enough to understand these personalities as they are quite culture specific. (Nielsen 2008: 43)

For this designer, a lack of knowledge of the English culture makes it difficult for him to identify with the situation of the people and relate to them morally—incidents, surroundings, and culture all remain incomprehensible.

Certain requirements to persona descriptions go along with the concept 'engagement'. For the designer to engage with the persona, the text has to have information that makes the designer able to construct the persona as a person, information that makes the designer able to relate to the feelings of the persona, and content that makes the designer able to understand and evaluate the persona and its context.

7 A Real Person

If we dig a little deeper, we uncover the understanding of what it actually takes to create a good description of a character and make the reader able to imagine a real person based on this. The answer to this is based on theories about how you describe a character in a script for a film. Even though it is my ambition, I do realise that not all persona writers become as good as film scriptwriters. But understanding how you work with characters can inspire you to create better persona descriptions.

In order for a description of a person to be engaging, it should contain physiological, sociological, and psychological dimensions. The three dimensions are of importance both for the character itself and for how the character relates to other people. They also influence how the character acts. For the reader, the three dimensions offer explanations as to what motivates the actions of the character. When an action is described to the reader he or she also wants to learn what set the action in motion (Egri 1960).

From two sentences like 'He hit her. She grabbed the knife', we interpret, for example, that the actions of the female character are triggered by the man acting violently towards her. But we do not understand why she chose a knife instead of hitting him back. However, if the story includes details about her physiognomy, psyche, and social dimensions, this gives the reader the opportunity of understanding her motivation for grabbing a knife. This can, for example, be seen in the description of the character Lisbeth Salander in the Stieg Larsson trilogy. Here, her background explains why she is violent and withdrawn, and descriptions of her physiognomy provide an understanding of the choices she makes when she faces a much bigger and stronger opponent. If we understand that these three dimensions often affect our perception of the behaviour of others, it will be easier for us to write about a character and track any motivation back to the source. The persona description does not contain actions but they emerge through the stories about the use of the product described in scenarios. Here, it has to be possible to understand the motives to act based on the persona description. Thus, it may be a good idea to consider the three dimensions when writing the personas.[3]

[3] You can read more about characters and character creation at Horton (1999) and Nünning (2001). Horton writes that by being concrete and by knowing place and time you as the author will know the character better. Nünning describes how the rounded character views the world from different perspectives that characterises the character and influences the character's actions.

Based on the dimension and the understanding of what makes the characters round, we can define guidelines for what engaging persona descriptions should contain:

Appearance—the reader needs to understand what the persona looks like. It may be either in the shape of a description or a picture. Take a look at the picture of Dorte; we can understand something about her as a person just by looking at her posture.
Social background—the social background (education, culture, etc.) is of relevance for how we act in various contexts and how we are perceived. The social background can be part of explaining the actions of a persona.

Psyche—to get an idea of the character, the reader needs to understand the psyche of the person. Dorte, for example, is full of energy and not afraid to dive into something new. But even though a person has certain latent psychological characteristics, there may in specific situations arise feelings that go against those and that can say something different about the character right here and now. For example, Dorte does not want to try something new when it concerns IT.

A rounded character has several features and this ensures that the actions of the character do not seem stereotypical. For example, Dorte is both energetic and bossy but also caring and 'mum' to all the employees.[4]

The persona descriptions are not meant to be used in fictitious stories but only for development of new products. This means that the descriptions also should contain the persona's relationship to the focus area and to using the product as well as description of the workflow or everyday life in relation to the focus area.[5]

8 Back to the Persona Description

At the same time as the persona description needs to be engaging, it should also gather and communicate data. As a writer, you always have to consider what relationship should exist between data and fiction. Also, you have to keep in mind that the reader in the process of understanding the persona description uses his knowledge of people who are similar to the persona. So the description should be as concrete as possible in order for the reader to understand it. Therefore, as a writer,

[4] The mentor of Danish film scriptwriting, Mogens Rukov, describes it as 1+1+1. The first 1+1 covers two character traits in opposition and the last +1 describes a peculiarity, for example, James Bond wanting his martini shaken not stirred.

[5] Understanding how personas are described influences the data collected at step 1. To create an engaging persona description, you need access to data that makes it possible to create identification and engagement. Observations of workflows or segmentations of users in experienced and non-experienced users do not provide the author with the necessary information to write an engaging persona.

you should have knowledge about how much the reader already knows so that it can be determined what is known and unnecessary to describe in detail and what is unknown and needs to be elaborated.

The descriptions should pass on knowledge about the *context* of the persona. Thus, it may be a good idea to provide information about the everyday lives of the described, again based on the focus area. If it's an IT system to be used for work, a description of what the persona does during an ordinary workday and a general overview of the work duties are parts of providing insight into how the product should function in a workday. If it's about a mobile application to keep track of your friends, it may be a description of the personas way to maintain his circle of friends, what they do together, and when they do things together.

Identification happens when the reader understands the persona, identifies with the life of the persona, and simultaneously compares the description against own experiences. As a writer, you should provide the reader with an opportunity to identify with the persona by means of the information passed on.

If we look at the example of Dorte from Virk.dk, then the description of her begins with information about her private life. We used fictitious means to create an image of a woman with a lot of drive and appetite for challenges, and thus, we gave her the urge to travel to Vietnam. By the same token, Dorte is not someone who loses herself in something; she watches a film taking place in Vietnam instead of reading travel guides. In general, we wanted the reader to understand that she is energetic without a lot of patience. After the information about her as a person follows a description of her relationship with the focus area and finally an overview of her many duties at work. This information is part of providing the reader with an understanding of how little she reports to Virk.dk and how little the reporting takes up of her everyday life.

I have on occasion seen examples of rash use of information, where the writer had chosen to include information about what car the various personas drove in. However, the writer had not given any thought to what this information was to be used for and how this impacted the understanding of the persona. Especially information about car brands carries a number of connotations that can be difficult to control and where the reader is easily prone to stereotyping. For example, what does it say about someone if he or she drives a Peugeot? For some, this would mean that the person is reasonable, environmentally conscious, but not a trendsetter, and for others, this might mean that the person is a Francophile. Therefore, it's important to be clear on what you as a writer want to achieve with the information.

9 Style of Writing

As such, it may look easy to describe a persona, but a lot of people are not used to write in a language that is easy to understand. Describing another person requires practice, not least in being able to imagine how that description will be read.

A persona description can be short with just a few bullet points or a long description with many aspects of the persona's life. Many describe a persona in a list format (Mikkelson and Lee 2000; Jordan 2000). However, lists can make it difficult to remember the information. When the persona is presented with a narrated description, the possibility of the story to become embedded in the memory is exploited which is something that abstract lists cannot do.[6] Additionally, the list format may prevent identification with the persona. In a study, I have described how designers who were given persona descriptions in list format related to these descriptions. One of them found it very difficult to relate to a specific description. In order to understand the persona, she had to imagine a character from an American sitcom. That meant that she herself created a stereotype (Nielsen 2005).

Both the style of writing and the way the information are presented can support the persona description. In the example below, the difference between the two personas is supported by the style of writing. Carl is described as thorough and thoughtful, and the language is descriptive and verbose. In contrast, we have Ruth. She is impulsive and takes action and is described by short sentences, almost a staccato style:

> Carl is 64-years-old. He took early retirement four years ago after a long working life as a carpenter. He has been married to Tina for 41 years and they have three children and five grandchildren.
>
> When Carl took early retirement, they sold their house and moved to the old wooden boat that they previously had spent most their spare time on.
>
> During the winter, Carl and Tina travel south to a warmer climate and during the summer they are based in the harbour. Here, Carl spends a lot of time at the library preparing the trip of next winter.
>
> Carl is a calm and quite type with a sense of humour. He is well-liked by most. He has several good friends and old colleagues who visit during the summer and they have a beer and a chat. Carl is happy to spend time with the grandchildren whom he takes sailing and he teaches them about sailing and splicing ropes.

> Ruth is 63-years-old, took early retirement. Formerly employed in a big cafeteria. Has an opinion about everything, speaks before thinking. Meets with old colleagues who are still her friends.
>
> Plays badminton and is active in the party committee at the club. Five grandchildren visit them during the summer. At a seminar last fall she discovered how to make her own webpage. She uses it to write about her family.
>
> (Workshop on engaging personas and scenarios. DJE 19/8 2003)

Many persona descriptions are written in the third person and there is a good reason for that. The point of view is just as important as in fictitious stories. Looking at the persona from the outside gives the writer a number of options that are harder to handle if the character were written in the first person. If we look at the earlier example of Kira, it would look like this in the first person:

> I am in my last year of high school; I have various odd jobs to make money for clothes, parties, and vacations. I clean, babysit, and have just gotten a job packing and shipping CDs for a small, independent record company.

---

[6] Meaning is constructed in two different ways as logical-scientific or as narratives. Descriptions in lists draw upon the logical-scientific way of meaning making, which is difficult to use in narratives such as scenarios. Read more about meaning making at Bruner (1990).

> This suits me just fine as the warehouse is right next to my high school. Then I can just go there when I'm leaving school and before I'm going to hang out with my girlfriends. I'm a dreamer; I'm well-read and smart but I'm prone to daydreaming and drifting off. I do a lot of fun stuff with my friends but my big passion is chocolate cake. That does not show at all on my tall, skinny frame but I bake and consume the most advanced cakes.

Here, a problem arises when Kira talks about how she sees herself. It seems unlikely that a person would characterise herself as a dreamer. Being a dreamer is an external evaluation. The same applies to the kind of cake she bakes. In the description written in the third person, it is an objective, omniscient narrator who sees her cake baking as advanced. That is an external evaluation, which thus appears reliable.

10 Photos

By far the most persona descriptions have an illustration that provides a picture of a living person. Some prefer drawings, others a photo. However, a study has shown that photos make the reader remember details about the persona far better than if it had been illustrated by a drawing (Long 2009). It is especially personal details like age, name, likes, and dislikes of the user that the reader remembers in more detail when the description is accompanied by a photo. The photo serves a dual purpose. As the study indicates, it supports the memory by allowing the reader, so to speak, to tie the information to the photo. When the image surfaces in the memory, the information also surfaces. A photo also signals that the persona could be a real person. Thus, you need to consider very carefully whether you want to use drawings for illustrations as they eliminate the reality aspect of the persona. You should also consider what type of photos you want to use. Some model photos are so far removed from reality that they might as well be drawings (Fig. 4).

Fig. 4 This woman is extremely happy with her phone (Woman using Windows Mobile device in park with child, CC: Copyright Tim Bishop 2007)

Fig. 5 Here, we have Michael, who owns a small shop. He is depicted in an everyday context with his goods

The picture is supposed to evoke empathy and pictures of real people in real situations achieve that goal relatively well. The photo of Dorte was taken by a professional photographer; he spent a day looking for people who looked like Dorte, Karina, Jesper, and Michael but who were not secretaries, accountants, or shop owners in real life. All people are placed in a context that says something about their everyday life (Fig. 5).

It may be tempting to go online and find photos that you can use commercially. I often look for photos on, for example, Flickr, under Creative Commons License for Commercial Use. The rights for these photos are released for commercial use with certain restrictions, for example, you have to credit the photographer. I also use photo databases, and here, you pay for the photos that you use.

You have to keep in mind how people look in your culture, for example, the typical Dane does not look like the Americans, the French, or the English. However, we could look like Germans and other Scandinavians (Fig. 6).

11 The Name

Some recommend that you use both first name and last name for your persona, but when we are dealing with small environments such as Denmark, I'm reticent as you risk meeting a real person with the name chosen. Just like car brands, names carry certain connotations that can be more or less beneficial, and you should avoid using names with negative connotations that for some reason or other may prevent the engagement of the reader.

Fig. 6 A young couple on vacation. What reveals where they come from? The sandals may not be typically Danish, but their appearance and style of clothing could be Danish. The caption reads: ‘This was taken on the south side of 80th & Broadway, taken from the west side of Broadway, heading downtown. My guess is that the couple on the right is tourists from somewhere in Scandinavia, or perhaps Germany; note that the young woman is consulting a map/guide or some kind’ (Broadway Malls, June 2008 – 056, CC: Copyright Ed Yourdan 2008)

12 Group Personas

Sometimes a persona description is not a description of one person but describes several. In Fig. 7 a couple is described. For most couples, it is never one of them who buys a piece of furniture but a common decision. Thus, it was necessary to describe a couple and their relation to furniture and shopping for furniture. In the description, there is also a description of who takes the first step and how the process is divided between the two personas Lena and Kresten (Fig. 7).

13 Interested Parties

People close to the persona can sometimes affect the use of the product. It may be parents buying a mobile phone for their kid, a teacher who thinks that the IT system is interesting in the teaching process, a procurement officer who is in charge of buying a new product, etc. These people should also be described so they can be taken into account in the scenarios. The descriptions of the interested parties are not as long and detailed as the persona descriptions, and they do not necessarily need a name but they are important to include due to their function.


Lena og Kresten, sekretær i RegionMidt og folkeskolelærer, 56 og 59 år

"Det er enkelheden, lige linjer, lidt firkantet"

Baggrund

Lena og Kresten bor i Hald Ege ved Viborg. De har to voksne børn og to børnebørn. Lena og Kresten er fornylig flyttet i et nyere parcelhus. Før boede de i et stort hus med trapper. Lena var tidligere i amtet, hvor hun blev udlært og Kresten har haft 25 års jubilæum på skolen.
Begge cykler de til arbejde, men de har også en bil, når de skal besøge børnene og hente børnebørnene. Kresten hjælper til i huset – men hans interesser er haven, computer og internettet.
Lena og Kresten samler familien til højtiderne. Mortens aften er altid med Krestens bror og svigerinde. Der er en fast pinsetur med børnene og børnebørnene. Lena og Kresten har efterhånden skabt en række traditioner for venner og familie.

Forhold til indretning

Lena og Kresten har arvet et bord til 12 personer fra Lenas mormor, rundt om bordet har de placeret 7'er-stole. Det har de med fra det gamle hus. Dette bord bruger de når de er mange. Til daglig og sammen med børnebørnene spiser de i køkken-alrummet. De køber møbler igennem en arkitekt, og deres smag går efter kendte mærker indenfor skandinavisk tradition, f.eks. PH lampen. Men de kan godt lide at købe noget specielt. Og det betyder noget for dem, når deres venner bemærker deres nye køb og deres indretning. Lena og Kresten vægter det traditionelle og det klassiske. Men det er også vigtigt, at indretningen er elegant, og det bliver det, når tingene har lethed og enkelhed – har stil.

Lena og Krestens stil

For Lena og Kresten er stil noget der hænger sammen. Noget der kan skabe en helhed i hjemmet som både er gammelt og nyt. De bryder sig ikke om brug-og-smid-væk-mentaliteten. Møblerne skal kunne anvendes og man skal kunne bruge dem.

Fig. 7 A persona description for Andersen Furniture

When we discussed our personas for Virk.dk, we became aware of the fact that they were surrounded by people who affected their digital reporting. We identified three types of influencers: the boss, the IT manager, and the recipient of the digitally reported form. These three were cursorily described without personal details and were given a photo. The interested parties influence the four personas in different ways. Dorte is only affected by the recipient of the form while all three affect the accountant Jesper's use of Virk.dk.

14 A Writing Process

Let me give you some insight in the process of creating the persona Dorte for Virk.dk. The actual description came about at a workshop with the same project participants who had been part of a previous workshop about data collection. The purpose of the writing workshop was to prepare the four personas. The process was as follows:

1. The participants were introduced to personas and the way that they are written.
2. They were divided into four groups that each was to describe a persona.
3. The persona descriptions were read and debated by all.
4. After the workshop, they were revised to have a more homogenous language.

After reading the description of Dorte in more detail, it turned out that we were dealing with a writer who was swept away with the task. The description was detailed with elaboration of Dorte's relationship with her husband; values had been attributed to her work, and the writer was in many ways visible in the text.

That is what fiction can achieve; both writer and reader are seduced and swept away. When you work with personas, however, this is not appropriate. Important information may be drowned out by the text, and it may be difficult for the reader to know what to focus on. Thus, the descriptions should be shortened. In the following, I'll go through some of the considerations involved in the rewrite.

Before:

> From her time in the department store she sees herself as fashionable; often goes to the hairdresser and freshens up her haircut; loves vibrant colours and elegant shoes whether it is pumps, Buffalos, or trainers, and in general to be on trend fashion wise.

After:

> Dorte likes to stay current with fashion. She often goes to the hairdresser, loves vibrant colours and elegant shoes. When she reads women magazines she looks for little tips that she changes and makes her own. She is always smartly dressed and stays fit.

We wanted to include a photo of a person who cares about her looks as this is part of making Dorte fresh and interested when it come to something new. In this way, we were going against the prejudices about women in their 50s being sluggish towards IT as the computer came into their lives late and who are not necessarily very IT proficient. Therefore, we presented Dorte as an elegant dresser. But we don't need to know what type of shoes she wears. The phrase 'From her time in the department store she sees herself as fashionable' implies that the writer is distancing herself from Dorte's own perception, thereby creating doubt for the reader whether she actually is fashionable or whether that is just the way she sees herself.

The description had a lot of superfluous information that did not add anything to the understanding of Dorte.

Before:

> She was married at the age of 21 to Jan (Manse) who had just gotten his skilled worker's certificate and was quite good-looking (at the time).

Why does the reader need to know that Dorte calls her husband Manse and that he was once good-looking?

After:

> She was married at the age of 21 to Jan who had just gotten his skilled worker's certificate.

Here, we used the information that she has been married for 21 years because we wanted to describe someone stable.

The language varied a lot and we were striving for a uniform linguistic format. Some information should be written in a more reader-friendly way.

Before:

> Coffee drinker. Smoker with several attempts to quit behind her.

After:

In an average day, she tends to drink too many cups of coffee and when the going gets tough with the telephone ringing and she can't reach the assistants she also tends to smoke a bit too much.

The two pieces of information about smoking and coffee are used to give an understanding of Dorte's hectic schedule. At the same time, Dorte's own evaluation is included about her thinking that this is too many cups of coffee and too many cigarettes.

It was important to keep focus on the reporting. The sections about computer use and reporting describe Dorte's relationship with the focus area and her ability to learn:

She is unable to learn something new when it is just explained to her and she abhors reading user guides.

Both parts are conditions that the future system needs to take into consideration.

Later, there is a comment from the omniscient writer:

Dorte often underestimates her IT proficiency and overestimates the time that it will take to learn something new so she stalls before she even gets started.

This is not the opinion of Dorte herself but the writer who sees through Dorte and explains that Dorte probably is not all that hopeless, as she seems to think. This creates a need for the system to support her self-confidence, which in other areas is great, but absent in this context.

All the information was discussed: Why would she travel to Vietnam? Why do we need to know that she is the one who decides the travel destination? And all the information could be explained. A part of the information serves the purpose of going against the stereotypical idea that a 53-year-old secretary who has been employed in her husband's firm for many years has come to a standstill.

If I were to describe Dorte today, I would make her personal description shorter and more precise in relation to what I would like the reader to understand. The reader does not need to know how long she has been married to Jan or that he would prefer to go to Rhodes for their vacation.

When we had revised Dorte, we needed to get started on the accountant Jesper. During the revision of his work areas, we discovered that no one in the project group knew what the average workday of an accountant looks like. This issue was solved by asking some accountants to describe their work areas, and the information was added to the final description.

15 A Persona Template

Based on my experience, I have developed a template for what a persona description can include. The template is no formula for what should be included in a description but should be used as a source of inspiration (Fig. 8).

Photo

Private information

- Age, job, marital status, where does the persona live, personal interests
- Consider what you want these information to convey about the persona
- Watch out for stereo types
- Consider if you have described only one character trait in different forms

Use of focus area, relation to focus area

- How much does the persona use the focus area?
- What is it used for?
- How does the persona relate to the focus area?

Media use, relation to media use (internet, mobile phone, etc.) – if relevant

- Describe the persona's use of different digital platforms
- How much they are used
- What they are used for?
- If different digital platforms are used together
- What is the personas relation to the different medias

Description of work or daily life

- What does the persona do during an average (work) day in connection to the focus area?

Other relations to the focus area

- Motivations
- Frustrations
- Behaviour
- Touch-points

Influencers that surround the persona and that may influence choices

- Partner
- Children
- Boss

Fig. 8 A template that can inspire the persona writing

References

Bartlett, F. C. (1932). *Remembering: An experimental and social study*. Cambridge, MA: Cambridge University Press.

Bruner, J. (1990). *Acts of meaning*. London: Harvard University Press.

Carroll, J. M. (2000). *Making use – Scenario-based design of human-computer interactions*. Cambridge, MA: MIT Press.

Cooper, A., & Reimann, R. m.fl. (2007). *About Face 3.0: The essentials of interaction design.* New York: Wiley.

Egri, L. (1960). *The art of dramatic writing*. New York: Simon & Schuster.

Glaze, G. M. (1999). *Personas for the S2S Project.* Retrieved April 2, 2003, from http://www.cs.utexas.edu/users/almstrum/cs373/general/personas.html

Grudin, J., & Pruitt, J. (2002). *Personas, participatory design and product development: An infrastructure for engagement*. Malmø: PDA.

Hinton, P. R. (2000). *Stereotypes, cognition and culture*. East Sussex: Psychology Press.

Horton, A. (1999). *Writing the character-centered screenplay*. Los Angeles: University of California Press.

Jordan, P. W. (2000). *Designing pleasurable products*. London: Taylor & Francis.

Jung, C. G. (1971). *Psychological types*. Princeton, NJ: Princeton University Press.

Khouri, C. (1990). Thelma & Louise. *Final Shooting Script*. Retrieved oktober 2010, http://www.imsdb.com/scripts/Thelma-&-Louise.html

Long, F. (2009). *Real or Imaginary - The effect of using personas in product design*. IES Conference, Dublin, Irish Ergonomics Review.

Mikkelson, N. & Lee, W. O. (2000). *Incorporating user archetypes into scenario-based design*. UPA 2000, Usability Professionals Association.

Nielsen, L. (2005). Then the picture comes in your mind of what you have seen on TV – A study of personas descriptions and use. In *The 5th Danish human-computer interaction research symposium*. København: CBS, Department of Informatics.

Nielsen, L. (2008). *Different cultures' perception of personas descriptions*. Lund, *NordiCHI*, Department of Informatics, CBS, working-paper.

Nünning, A. (2001). On the perspective structure of narrative texts: Steps toward a constructivist narratology. In W. C. Van Peer, & Seymour Chatman, red. *New perspectives on narrative perspective* (pp. 207–223). Albany: State University of New York Press.

Pruitt, J., & Adlin, T. (2006). *The persona lifecycle: Keeping people in mind throughout product design*. San Francisco: Morgan Kaufmann.

Smith, M. (1995). *Engaging characters: Fiction, emotion, and the cinema*. Oxford: Clarendon.

Turner, P., & Turner, S. (2011). Is stereotyping inevitable when designing with personas. *Design Studies, 32*, 30–44.

6: Exposition to Action

When developing a user-focused design, the simplest structure for the story about a user and interactions is a movement from a beginning, through a middle, to an end (Cobley 2001). *Step 6: Situations* should provide knowledge about the starting point of the actions where the needs of the users are included but also the situations in which they will use the product. A situation is, for example, that a website selling children's clothes offers the user the option of online payment. Any requirement for a situation will result in a number of interactions and actions, including the users' choice of payment card, entering card number, etc.

Thus, a situation is the beginning of a story where the focus area defines the scene within which the persona can come to life. The scenario is similarly a number of incidents and activities initiated by the situation.

In all classic stories, there will be something in the beginning that gets the plot going. In the fairy tale about Jack the Dullard who wants to marry the princess, the plot begins with the announcement that the princess would choose for her husband that youth who could arrange his words best. This puts Jack the Dullard and his brothers in a new situation. They now have a goal—they want to marry the princess. And the plot is underway. In the same way, situations are part of starting the stories that play out in various scenarios. From the situation, the persona derives a goal that drives the plot forward. *The situation* thereby creates a transition where the up until now static character of the persona transforms into a dynamically acting player in the scenario.

Alan Cooper et al. (2007) and John Pruitt and Tamara Adlin (2006) do not distinguish between situations and scenarios. For them the goal emerges so to speak from the persona description. In my approach, the persona is seen in different situations with different goals. The individual persona can be part of a number of situations and thereby anticipate various scenarios. But how do you derive situations from data? How is the situation connected to the persona and the scenario? And how does the situation work as a catalyst for the story of the scenario? I will attempt to answer these questions.

L. Nielsen, *Personas - User Focused Design*, Human–Computer Interaction Series,
DOI 10.1007/978-1-4471-4084-9_7, © Springer-Verlag London 2013

1 Situations and Needs

The academic discipline of interaction design primarily defines user needs as understanding the characteristics and abilities of the users, what they strive to achieve, and how they at present achieve this. The perspective is here whether the users could reach their goal more efficiently and get a more pleasant experience if they were supported in a different way (Preece et al. 2006). This definition does not distinguish between whom the user is and what the user wants to achieve. At the same time, needs are defined solely by the characteristics, ability and goals of the users.

In my opinion, needs are not only closely interlinked with the persona but also with the situation that the persona experiences. The goal emerges from both the situations and needs of the persona. The persona Jesper who is an accountant is going to do some reporting. He is with a company and needs their digital signature, and he needs to find the right form. Here, we are not dealing with a personal need. This is not necessarily something that he wants to do but the situation is an expression of the needs of the employer and can be deduced from knowledge of Jesper's work routines. Because Jesper can remember form numbers, he needs to be able to search the system for the number and not only for the form name. Thus, the need emerges from both knowledge of the focus area and the characteristics of the persona. The knowledge of Jesper's needs arise from the understanding of the persona and can in this case not be separated from the usage situation.

Situations and needs give rise to different types of stories: A situation is open and can be defined by others than the actual persona while a need often is personal. The common denominator, however, is that they trigger one or more scenarios. It can be difficult to distinguish between a need and a situation, and this distinction is often not necessary. The important thing is that situations and needs are part of defining the goals of the persona.

2 When Does a Goal Arise?

If we continue the example of Jack the Dullard, his goal is to marry the princess because he is put in a situation where that becomes possible. The classic story cannot exist without an object, something to strive for. The goal gives the story a direction. In Cooper's approach, the goals are part of the persona and that is what separates one persona from the other. The goal of the users is a lens that the designer should use to magnify the features of the product (Cooper et al. 2007). I agree with Cooper about that, but by taking the goal out of the persona description, every persona can open up for various goals whereby the description becomes much more flexible. An example of flexibility can be seen in a case where we after collection of data could conclude that two of the four personas that had been described for an intranet could be reused for an internal HR system. Descriptions were then added that included the relationship of the personas towards HR administration, but their fundamental characteristics remained unchanged. At the same time, a number of new situations were added where they would use the HR system. This would not have been possible if the goal alone had defined the persona. In this case, the situations all described different forms of actions, and they were equally interesting for the design of the IT system. But what is it that makes people act? Different theories have different answers to that question.

3 Three Theories as to What Makes People Act

There is some disagreement about why people in the real world act. In psychology and learning theory, there have been debates about what it is that makes people act and what the actions stem from. This discussion is worth scrutinising as product development to a large degree is about human activities, what role the product plays in this and how this affects the action of the individual. Within the Human-Computer Interaction (HCI) perspective and approach to system development, there are in general three theories in play: *situation action models*, *activity theory*, and *distributed cognition* (Nardi 1996). According to activity theory, actions often stem from the intentional goals that people set for themselves. Any activity consists of subjects (this may be both individuals and groups), objects (which are goals that motivate actions and control them and that can change), actions (that are goal-oriented and intentional), as well as planned activities. Behind the goal is a need or a desire and that is at the root of any activity. Activities are thus intentional goal-oriented processes that are begun in order to reach an object. Various actions can be carried out to reach the same object. The activity theory perceives the action itself as a context that is part of the entire activity. Under this theory, people create contexts through their actions, and contexts include object, various items, and activities.

Distributed cognition perceives people and items, including the IT system, as one system where both collaborate in reaching a goal. The specific areas that people and items work within can only be understood when seen as a unit that has contributions from the individual players in the system and from the coordination that is necessary for the players to reach the goal.

A central principle in situated action is that activities grow from the situation at hand. Actions are unintentional and they grow from the situation the individual is in. When an individual finds a goal for his/her action, this happens after the realisation of the action and takes place as post-rationalisation. What are being examined are activities where people act in specific surroundings or settings (Lave 1988). The surroundings are here defined as a relationship between the acting subjects and the arena in which they act. In this perspective, it is neither the individual nor the surroundings that are in focus but rather the relationship between the two.

My perspective regarding the goal is, as previously stated, that the goal arises from a specific situation or a specific need and makes a persona act. The goal can thus not be isolated as the result of an intentional act. The perspective can somewhat be compared with a situated action. But as the story plays a central role, I do not take a stand on whether the goal is intentional or a post-rationalisation. The goal will always be known from the beginning of the story and thus intentional for both writer and persona and is that at which the story attempts to arrive.

4 Interaction Design and Product Design

The situations do not have the same function for IT system development as for product design. For projects within IT system development, you can describe a number of situations that each is the starting point of one or more scenarios. In each scenario, the story progresses in time, and it is the interaction between the IT system and the persona that drives the development forward. The medium is often given in advance as we are dealing with an IT product, whether it is a website or a mobile service. Because the media is already determined from the beginning, the scenario can only move within that framework, but every situation can trigger more than one scenario and provides the possibility of examining various kinds of interaction between the persona and the IT product. It may be that the system requires you to register as a user and the designer would like that this could happen by taking information from a Facebook account or by entering personal information. Here, the situation 'register user' will trigger two different scenarios.

In product design, the goal of using scenarios is getting ideas for new products rather than describing interactions. Here, every situation describes a part of the user's everyday life and triggers only one scenario. In product design, the media is not given in advance but is that which needs to be 'invented'. Thus, the product scenario is more similar to a played out scene with the purpose of encouraging product ideas. For example, in a project where the goal was to create new products, based on our data collection, we developed a future situation describing some of the trends that we had identified. The situation described society and the focus area in a near future and worked as an engine for inspiration and idea development.

5 Situations and Data

Situations and needs can be found in the data collected. If many project participants are to participate in the development of personas, it is important also to get their acceptance of the situations. In order to achieve this, you can choose between two strategies: You can either ask participants about their opinion or you can let them participate in the process of finding situations. Let's look at some examples of relationships between data and situations.

5.1 Personas for the Furniture Factory Andersen

In this case, we conducted more than 50 short interviews with customers who looked at furniture in various furniture shops. All shops sold the products of the factory. Then we conducted six in-depth interviews with customers who had bought products from the factory. From the initial interviews, we could see that buying furniture often happens in connection with rebuilding or moving, either before the rebuilding or move has been concluded or right after. Thus, it is natural to put the personas in a situation where they are looking for new furniture before a rebuild and in another situation where they have moved into the new house. At the same time, we found that some of the personas began looking for furniture online while one did not. This created some new online situations and some in a furniture shop. This way, we discovered a number of situations varying in surroundings, the way of looking for furniture, and time. So either you look for furniture from home online or in a shop. You do this either when preparing a rebuild project, during, or after you have concluded rebuilding or moved. This provided a total of 8 different situations. Besides what I have mentioned, there will also be situations for unpacking, installation, or maintenance of the furniture.

5.2 Personas for JBS

In this case, we conducted 41 short vox pop interviews with men of all ages regarding their attitude towards underwear. The interviews took place at two different locations in the same city. In the analysis of our data, we discovered three personas. The three personas either bought their underwear in supermarkets or in men's clothing shops. Only one of the three personas would consider buying underwear online. So we found three situations: shopping in men's clothing shops with service, in a supermarket, and online. These three situations are much less complicated than in the first case, but that does not mean that the scenarios will become simple.

5.3 Virk.dk

In the beginning of the project, we developed three situations for each persona. Two of those applied to all personas: Virk.dk has the special prerequisite that in order to report you must have a digital signature for the company where you work. For all the personas, it was interesting to examine how they got a digital signature and how it was installed. A second situation that was examined was the first time they reported via the redesigned Virk.dk. As can be seen from the examples with Karina and Michael, the development of situations requires an understanding of the lives of the persona. In order to write situations for Karina and Michael, we had to consider how they would get information about digital reporting to Virk.dk. Whereas Karina meets an employee from the Danish Companies and Commerce Agency, it is not likely that this will happen for Michael. He will more likely first come across Virk.dk via Google. Here are two examples of situations:

Situations for Karina

> Karina attends a meeting at her local union where a representative from the Danish Companies and Commerce Agency is invited to talk about digital reporting. She attends this meeting out of professional interest but also to meet the other local union members and spend some time with them. When the representative talks about being able to save time and not having to send letters to all the employees when they have been sick, Karina begins to take note. Also the idea that the system has already filled out certain data so she does not have to enter the same thing every time appeals to her.

Here, we asked a number of questions that were based on situations regarding digital signature, relaunching, and reporting. Some of the questions were: Karina would like to order a digital signature; what does she do? Karina has seen that you can report salary statistics; what experiences from the reporting of sickness benefits can she reuse? How does Karina experience the transformation from Virk.dk version 1 to version 2?

Situations for Michael

> Michael sits after office hours and attempts to finds information in connection with a new country from which he wants to import. His problem is that he does not know what to report and what rules apply in connection with the country in question. How does he find the pertinent information? Michael used the Company Starters Guide when he established his company. What would make him obtain a digital signature?

Even though you from the beginning attempt to go through as many situations as possible, several will arise during the development process that you cannot predict. When you work with idea and product development, it is not possible to predict what direction the project will take, but it is important to be realistic and stay within the world of the personas. This means, for example, that a mobile solution for reporting is not realistic in Karina's world. How you stick to the world of the personas is the topic of the next step.

References

Cobley, P. (2001). *Narrative*. London: Routledge.

Cooper, A., & Reimann, R., m.fl. (2007). *About Face 3.0: The essentials of interaction design.* New York: Wiley.

Lave, J. (1988). *Cognition in practice: Mind, mathematics, and culture in everyday life*. Cambridge: Cambridge University Press.

Nardi, B. A. (1996). Studying context: A comparison of activity theory, situated actions models, and distributed cognition. In *Context and consciousness: Activity theory and human-computer interaction* (pp. 69–102). Cambridge, MA: MIT Press.

Preece, J., Rogers, Y., & Sharp, H. (2006). *Interaction design*. New York: Wiley.

Pruitt, J., & Adlin, T. (2006). *The persona lifecycle: Keeping people in mind throughout product design*. San Francisco: Morgan Kaufmann.

7: The Reality of Everyone?

Persona descriptions and situations have now been prepared, and the next step, *Step 7: Validation and acceptance from the organisation*, is about how approval of the data, personas, and situations can happen in cooperation with the project organisation.

It may take resources and can at times be costly to use qualitative methods. But it will be even more costly if the project participants reject the results you arrive at. Thus, it is a good idea to involve the project organisation in approving the choices made along the way. Steinar Kvale (1996) writes that truth is negotiated in a local context. By including the project organisation in the negotiation, those who have been in charge of the data collection and analysis ensure that the result can be included and thus applied in the further process.

In the validation, a distinction is made between pragmatic and communicative validity. Pragmatic validity is verification in practice and represents a requirement that the knowledge described is true and will work. Communicative validity is testing the validity. At this point in the process, it is solely the communicative validation that is of interest. Here, validity is tested through dialogue between project participants and interested parties. Discussions whether descriptions and situations are reliable from the perspective of the project participants and interested parties is what is at stake here, while discussion whether data were collected correctly and whether it is the correct number of personas should be closed.

1 Inclusion of the Organisation in the Validation

Even when project participants have been included in the data collection and analysis, the results can go against the existing perception of the end users. Pre-existing understanding is not necessarily built on facts but can either be based on an internal perception the company has had about their end users or be based on the wishful thinking of the company regarding their end users. In the work for the furniture factory Andersen, the project participants themselves handled the data collection

L. Nielsen, *Personas - User Focused Design*, Human–Computer Interaction Series,
DOI 10.1007/978-1-4471-4084-9_8, © Springer-Verlag London 2013

and they had been part of some of the analysis, while I did the final analysis. The employees of the factory had a shared perception of their end users being about 40 years old and highly educated. However, our research showed that the average age of customers who buy expensive furniture were late 50s and a lot of them had only shorter educations. In other words, the customers were police officers, childcare workers, and social and health care helpers of about 60 years old who had saved for years to buy furniture from the factory. It was difficult for the project participants to accept this new image of their customers when they were introduced to them in the three persona descriptions. Thus, it was important continually to listen to their objections and then be able to show the data to them when they questioned the validity of the interpretation. In the dialogue, we constantly included known examples, and comparisons were made with the world known to the participants, for example, an argumentation as follows: Who would in reality decide to buy an expensive dining room table? That would be people without young children. Or: When can you afford an expensive dining room table? You can when the children have left home. To be able to relate to a known world was part of making the study valid and getting the result of the study recognised.

An example of where this was not achieved is from a company that wanted to use the persona method because it could end internal discussions about what direction their website should take, what features to include, and how to design them. The persona project was launched by two people in the design department, and they conducted a number of interviews with clients. The process ended with a presentation of the personas to the project organisation. The intention was for various projects to find the situations where the users would use the website and begin preparing scenarios. However, this never happened, and seen in hindsight, you can identify several issues that should have been addressed at an earlier stage. One of the problems was that the marketing department had not been included in the process at all. Another was that the validity of the study was questioned as it ‘only’ included interviews with 16 clients and not included knowledge from the customer base and call centre. A third obstacle was that the organisational structure changed, so those who were meant to be the ambassadors of the method suddenly found themselves in new departments that knew nothing of the project. The first two issues could have been solved by including more people in the persona development and by presenting the method at an earlier stage. The problem of the change in organisational structures could be solved if management had prioritised to use the persona method. If so, the responsibility for the persona method could have been transferred. You can say that in this case the development and use of the method was tied to an insufficient number of people participating, and thus, the application became vulnerable.

It is important to have a visible process that not only show the persona descriptions but also how the data was obtained, what can be described as deficits in the collection, how the analysis has been done, what the analysis was able to answer and what not, as well as how the final descriptions of personas and situations look. By creating a transparent process, by showing how you have arrived at a certain result, and by allowing the result to be questioned, to pay attention to any objections and actively enter into a dialogue with the participants you can overcome the opposition that otherwise can occur when the organisation gets new knowledge.

Reference

Kvale, S. (1996). *InterViews – An introduction to qualitative research interviewing*. London: Sage.

8: Get the Message Across!

Before personas and situations really can be used to create something new, they have to be distributed to all who may use them, also to management and marketing, even if they were not associated with the project. Likewise, it is a good idea to think of how external partners and future employees will get access to the descriptions. *Step 8: You disseminate knowledge* should lead to answers regarding how the descriptions can be created in the most accessible way and who are the target groups. In order to target the knowledge dissemination in the best way possible, it is vital to prepare a communication plan as early in the project process as possible. It should also include plans for how the project participants will gain access to the underlying data. The plan can contain information about who is going to use the descriptions, what they will use them for, and what formats best support the various applications, including whether there should be various formats for different applications.

1 Communicating to Different Target Groups

The way new knowledge is disseminated also depends on whether the project participants in advance have knowledge of the users that are similar to the personas. In a study about the use of personas for development of IT systems, I found that when designers have knowledge about the users from interviews or user tests, this knowledge provides them with a deeper understanding of the persona descriptions (Nielsen 2005). The designers' perceptions of the persona are made up of all the various encounters they have had with actual people. The designers I interviewed were able to compare the description to their encounters with users and added their own knowledge to the description. They had, for example, observed that there were differences between the work areas in Southern and Northern Europe, and this was taken into consideration in their design proposals even though this issue was not included in the persona description. This informal knowledge was not, however, passed on to other designers and new project participants. For the designers who had

L. Nielsen, *Personas - User Focused Design*, Human–Computer Interaction Series, DOI 10.1007/978-1-4471-4084-9_9, © Springer-Verlag London 2013

met the users the presentation of the different personas was enough to understand their world and any existing cultural differences. These designers described each persona rich, detailed, and filled with information that they used as a varying basis when using the method for specific design proposals. For this group of designers, the descriptions did not need to be all that elaborate in order for them to be able to have an idea of the target group.

If the designers do not have any knowledge about people who are similar to the descriptions, they have to obtain their knowledge from other sources. The information should be accessible in the persona descriptions. But if they are not elaborate enough, the information can inadvertently come from other sources. In the project that I examined, the interviewed designer A was introduced to a slideshow with a lot of information about working in a warehouse and what that entails. And the designer automatically formed an idea about a user, which came from an American sitcom.

> A: I saw a power point about his homepage, so you see these words: warehouse, put away, forklifts. Then the picture comes in your mind of what you have seen on TV, guys, I don't know if you have seen this, 'The King of Queens'. It's some American sitcom, it's not my favorite show, but that guy now is in my head. And he's not some warehouse guy, he's some delivery guy, that's what I see. (Nielsen 2005)

As described by interviewee A, the data of this study were presented as a PowerPoint slideshow and the content lacked an elaboration of what was behind the concepts introduced. Central to the presentation was work functions and work roles that were indicated in abstract terms and not related to the people who performed these functions. The image created by the designer of the persona was similar to the so-called 'functionary type'—someone with typical behaviour that is seen as an anonymous person (Schutz and Luckmann 1973). In order to relate to the persona description, the interviewee wanted more concrete content and more emotional information.

Other designers who had not met any of the users either engrossed themselves in the background material about the individual persona description and that provided them with some of the information that designer A felt was lacking. One of the designers who read the documentation described it as a positive experience that he could check out the four-page description that elaborated on the persona and investigate about 30 different links if he had questions about the description.

For both types of designers, it is necessary that the descriptions contain more personal information, so it becomes possible to envision the personas as living individuals, including information about attitudes towards the focus area and information relating to the work of the personas in the focus area.

2 Signalling Effect

The designers in the research project describes that they can get elaborative information about the persona by reading the documents describing the underlying data. This collection of information or 'foundation document' (Pruitt and Adlin 2006) is a document containing the foundation of the persona description. It is probably the least used document, but at the same time, the document with the biggest signalling effect. By giving access to data, you send a signal that the work with personas has been conducted on a serious foundation. You can occasionally encounter opposition towards using the persona method because it is considered to be of little value, based on imaginative thoughts, and as an expression of wishful thinking. This criticism can also be countered with the foundation document. As expressed by an employee of the Danish Commerce and Companies Agency working with Virk.dk:

> I think that the report serves several different purposes. One is that you can hand out a report. To some, this can seem comforting, that this is actually a scientific effort. Or you can at least see how the personas have been created and that there are statistics connected to them if you are interested in that aspect (…) And then it works well as documentation that you have actually gotten your money's worth. That is also needed so management, after the effort, can see a report. (Interview, June 2009)

3 Posters, Mood Boards, and Playing Cards

Depending on the purpose, target group, and means, there are a number of different ways to communicate personas.

Posters can be manufactured in many different ways and in many different formats. The posters of Virk.dk are big and created both to get attention and to disseminate information. But as made apparent by the following interview, dramatic posters are not always enough (Fig. 1).

> We have put them up with our IT supplier, those in charge of the encoding and that kind of stuff. I don't think it was especially successful. They [the staff of the supplier] should probably have been introduced more thoroughly to this other than just having had posters put up on the wall out there. (Interview, June 2009)

Life-sized photostats create attention. If you want to make sure that your personas get noticed, photostats may be a good solution. However, it is important to think about whether personas are communicated best through photos or drawings (Figs. 2 and 3).

Handouts are shorter outlines of all personas with select information. The description is a work tool that is meant to give the project participants a quick overview of the information. Thus, it may be a good idea to select what is to be communicated according to how the persona description is to be used (Figs. 4 and 5).

Mood boards are a kind of posters describing and illustrating the everyday life of the persona. They do not contain much specific information but communicate at a more emotional level (Fig. 6).

Mini books and playing cards are short overviews with select information that makes it possible to understand the core differences between the various personas (Fig. 7).

Fig. 1 A poster for Virk.dk. It includes only the most important information from the description

Fig. 2 Life-sizes photostats. At Danish rail, the design office chose to prepare life-sized photostats with drawings of personas and place them throughout the open-plan office

Mugs with statements from a persona and other formats. Key chains, cuddly toys, posters put up in bathrooms are all steps introduced by Microsoft to create awareness about their personas. Personally, I have a hard time with material like

Fig. 3 Life-sizes photostats. The same solution was chosen by Silkeborg Data. However, here, the photostats were of real people

this, but others would find this to be a fun way to communicate personas. Here, the content is not in focus, but rather it is the means that is supposed to drive attention.

Foundation documents linking data to the persona descriptions are essential to understanding the method and the descriptions. Thus, it is also important to have documents where the persona descriptions have footnotes or links to where you can read more and what data the various information stems from.

Launching campaigns and events can be good ways to get a persona going. They are well suited to generate attention about the method. In a study of the use of personas in Denmark, we found that some companies experience that after some time, there is no longer focus on their personas and that they are not used (Vorre Hansen 2009). A targeted campaign can be part of bringing the personas back to life again. It can be as simple as convening a *persona kick-off* meeting, holding workshops, or having new material made.

An introduction pack. For new staff, it is not enough that there are persona posters on the wall. They need to be introduced to the persona method and how the company works with personas. New members of staff also need to know how to access the foundation material.

4 Some Good Advice

A few pieces of advice on how to communicate persona descriptions:

- Think about whom they are communicated to and if the project participants have preexisting knowledge or none at all.

B.T.

Mona er 42 år og gift med Jens. De bor i Vester Nebel i et lille parcelhus. Mona og Jens går meget op i huset, som de købte for 6 år siden, og de bruger en stor del af deres fritid på at istandsætte det.

Mona er sosu-assistent og Jens er selvstændig snedkermester. Sammen har de datteren Laura på 16 år, som venter på at få adgang til kælderen, hvor hendes bror Rasmus på 18 år bor i øjeblikket.

Arbejde og fritid

Der er ikke noget, der kan slå Mona ud, hun er altid glad lige meget hvad. Mona gik på 30 timer da børnene var små og hun er stadig på nedsat tid. Det gør det muligt for hende at nå hendes mange interesser: hun organiserer sociale arrangementer og holder dem gerne selv. Hvis der mangler en festsang, så er Mona også kvinde for at skrive den. Sangene vækker altid lykke for hun er god til at få mange detaljer med. Hun er også med i den lokale gymnastikforening, og familien deltager hvert år i det årlige landsstævne i uge 28. Mona er også praktisk, og hjælper Jens med at ordne hus og have.

Særlige interesser

Bolig og design

- Går meget op i haven. Går derfor ofte på planteskole, og kan godt lide gode og lidt dyre haveredskaber, men vil ikke betale fuld pris. Venter på at de kommer på tilbud eller beder om nedslag i prisen. Af og til søger hun efter billige planter og haveredskaber på internettet.
- Er interesseret i nye ting til badeværelse og køkken og søger efter tilbehør.
- Gør det selv – sparer penge på at fixe ting selv.
- Sparer gerne op til et par dyre forbrugsgoder engang imellem. De har f.eks. sparet op til et nyt og dyrt spisebord.

Bil og Motor

- Interesseret i motorsport. Elsker at se Formel 1 om søndagen. Har en gammel Mercedes med automatgear.
- Mona og Jens har en trailer, men den bliver mest spændt efter Jens' bil.

Mona er også interesseret i:
Viden og samfund, sport og fritid, penge og karriere, business, kultur og underholdning, mad og drikke, sundhed og familieliv, shopping.

- Har hund - colllien Rico som får meget plads i hjemmet, det er mors hund.
- Kan lide musik 'Rock i Esbjerg', Poul Krebs, TV2, Bruce Springsteen, Tom Jones.
- Vil gerne den sunde livsstil, men kan godt lide et glas rødvin.
- Kigger efter rejser – specielt klassiske charterrejser – det græske øhav eller en tur til Egypten.

Medieforbrug

Aviser

- JV læser.
- BT i weekenden.

TV

- TV2 Charlie.
- Lokal-TV.

Fig. 4 A hand-out for Berlingske Media. Both persona description and data are included in the leaflet. It requires some explanation to understand the various levels of information, but it works well in use

Fig. 5 A handout. This leaflet works as a cover for three persona descriptions and is at the same time a short document describing the process

Fig. 6 A mood board created by Sanne Lee Winding for a project at the Danish union FOA (Tillidszonen.dk)

Fig. 7 A short overview can also be made into a *cube* as this from the tele-company Telmore

- Decide what format will serve the communication best.
- Remember that personas have to be a work tool. It should be easy to get access to the descriptions when they are needed.
- Let also the communication work as a reminder about what personas the project should focus on.
- Make the foundation material available.

References

Nielsen, L. (2005). Then the picture comes in your mind of what you have seen on TV – A study of personas descriptions and use. In *The 5th Danish human-computer interaction research symposium*. København: CBS, Department of Informatics.

Pruitt, J., & Adlin, T. (2006). *The persona lifecycle: Keeping people in mind throughout product design*. San Francisco: Morgan Kaufmann.

Schutz, A., & Luckmann, T. (1973). *The structures of the life-world*. Evanston, IL: Northern University.

Vorre Hansen, A. (2009). *Personas nu og fremover*. Retrieved April 7, 2011, from http://personas.dk/?p=155

9: Stories About the Future

How does something new look? The persona process is now at a point where you can begin to envision a future product. This is done by stories of how a user or customer might use a product. These stories are called scenarios and are the focal point of the entire persona method. It is in this step you imagine things that do not as of yet exist, and it is during this part of the process that you experience the strength of the method. *Step 9: Scenarios* are the central stage of idea development.

> Dorte sits down by the computer. She installed the digital signature as soon as she received the letter and pin number. It is uncharacteristic for Dorte to believe that she can manage to do reporting quick and easy 'just before lunch', so Dorte changes her mind and calls her son and invites him over for dinner. Afterwards, they will do the reporting together.
>
> Dorte and her son have had their dinner and now sit at the computer ready to handle the reporting. They go to Virk.dk and look at the front page. Dorte tries to take it all in. It is new and thus a little daunting but at least it looks nice with those colours, she thinks. She looks at her son: What do we do now? He says: 'What do you think? We have installed your signature.' 'Well,' Dorte says, 'we need to find the reporting, but where?' 'Well, look, here in the middle of the page there is a search field, maybe we can try searching for it?' 'Let's try,' says her son. Dorte types 'apprentice reimbursement' in the search field and launches the search. A new screen appears with a short list of 'hits'. At the top is a link to the form. Dorte recognises that the link is for the form because the title of the link is the same as on the paper form she has used before.
>
> Dorte smiles to her son. Piece of cake. Dorte clicks the link but instead of getting to the form she faces a page saying 'In order to use the form for reporting you have to log in at Virk. Click here to log in.' Dorte looks at her son—do we do that? He nods and Dorte clicks the link.
>
> Then a log-in page opens, consisting only of a field where she is to type the code from her digital signature. Dorte types the code and clicks ok.
>
> Now a page opens where it says that she has to accept 'the agreement about use of Virk'. 'Click here to accept'. Dorte has her doubts but with encouragement from her son she clicks accept.
>
> Now Dorte is sent to the reporting page and begins filling out the form. It looks a bit different than the paper form but she still recognises the fields and the information that she is supposed to enter here. Along the way a message pops up saying she has forgotten to enter something. She does not really understand because usually she does not need to write it all but it is something she knows so she just writes it even though it is a bit difficult. When everything is filled out, she needs to press the button saying: 'send'. Dorte does so and now

L. Nielsen, *Personas - User Focused Design*, Human–Computer Interaction Series, DOI 10.1007/978-1-4471-4084-9_10, © Springer-Verlag London 2013

a receipt appears where it says at the top: 'Your application for apprentice reimbursement refund has now been submitted to the National Directorate of Labour and they will receive it with in x hours. If you have questions for the processing you can contact, …. case ID is: …' Below this Dorte can see all the information that she has entered. Below there are two buttons saying 'click here' if you want to print this receipt on your printer or save it on your computer.

Dorte would like to put the receipt in her binder so she prints it.

When it has been printed she can choose between finish or doing more reporting. She does not want to report anything else so she chooses finish.

When it has been printed she clicks finish as it says under print.

Now a new page appears saying 'This reporting is not saved under your favourite reporting. Would you like to save it there so you can easily find it next time?' Dorte thinks that this sounds good so she hits 'yes' even though she is unsure what the favourites are all about and how she is supposed to find them again. Now she returns to the front page of Virk but is now logged in.

On this page, she can choose between doing other kinds of reporting and logging off.

On this page, she can choose between doing more apprentice reimbursements, doing other kinds of reporting, and logging off.

She logs off, closes the browser, shuts down the PC, and goes to make coffee. (Scenario for virk.dk)

[This is a description of how the future Virk.dk can help Dorte when she needs to do reporting. The scenario inspired the final solution to, among other things, include an extra search field in the middle of the home page.]

A scenario has several purposes, but first and foremost, it is a tool to create design ideas based on the user's point of view, needs, workflow, and context. Also, it is a communication tool that makes discussions about design solutions concrete and targeted.

The word scenario originates from Italian and means *that which is attached to the setting*. But the concept is also used about a description of a series of actions and events. In the end of the 1960s, the analysis of the narrative structure also inspired launching scenarios as a tool for strategic planning. The way the scenario is used in product and system development takes inspiration from strategic planning where it works as a vision describing a number of possible events and actions in the near future.

In IT system development, the scenario is used as the script for the interaction between a computer and a user. This application began as early as the 1980s, and there is quite a lot of literature describing the method. From the beginning, the scenario was used as a presentation to describe the system based on the needs and the context of the user. However, the term 'scenario' has been used about many different methods and about very different processes in system development and can be used for different methods such as use cases and role playing where the designer plays out specific interactions. The concept of scenarios is used where focus is on changing work and workflow, for development of websites, and for e-commerce. Most scenarios are based on the tasks, goals, and context of the user but can also be used for other areas. And they can be written, drawn, played, or filmed.[1]

[1] You can see examples of video scenarios at cooper.com.

The word scenario, in the original sense, implies that there are similarities between a scenario and a story, as both contain events and actions in a sequence. The relationship between a persona and a scenario can be compared to the relationship between a character and a story where the character as such is static but becomes active in the story. That is also the case with the persona, which comes to life and acts in the scenario. As applies to my persona understanding, I will also here use a narrative perspective in the description of the scenario and its elements.

1 The Scenario from Strategy to Product Development

Today, scenarios are used in many different ways and to solve many different problems. First and foremost, it is used for idea development where the scenario helps to investigate how best to cover the needs of the users. It can be used to test the ideas of the project participants and evaluate these from the personas' point of view thus help testing the validity of the ideas. You can use scenarios to look at the current product, for example, a website, through the eyes of the personas and get insight into what problems exist. Finally, the scenarios can be used to look at specific interactions with the product where each interaction can be described as short stories.[2]

1.1 Scenarios for Discussing Future Crises

The oil company Shell was the first to use scenarios as a tool for strategic planning. At Shell, Pierre Wack introduced scenarios as a new tool for discussing future situations and to create space for action if the situations discussed were to occur. Wack distinguished between external scenarios that are social and challenging descriptions of the future and internal scenarios that are individual and personal expectations to a person's own future (Heijden 1996).

The external scenarios are created as a collective action and stem from the participants mental perceptions about the world. The purpose of the external scenarios is to create representations of different possible future trends and results. The internal scenarios are not nearly as complete as the external, but they do have an internal consistency. The internal scenarios are a causal chain of arguments that combine an action with a goal (if I do that, then this is bound to happen).

The purpose of using scenarios for strategic planning is to start from the decision-makers' unconscious, internal image of the future and their mental models and change these by means of external scenarios. With help from the external scenarios, new perspectives of the future are created and it thus becomes possible to get new points of view. By using scenarios as a sort of prediction, an understanding of

[2] You can read more on how to use scenarios for specific interaction at Carroll (2000).

the elements of uncertainty associated with the future can be created. But scenarios are not the same as predictions and Wack emphasised that it is not possible to predict the future. Rather, scenarios are a planning tool that can be used to discuss the future. They give decision-makers the opportunity to discuss risks and make strategic decision based on the discussions (Heijden 1996).

1.2 Scenarios for IT System Development

The work of Pierre Wack influenced the later use of scenarios in system development and human-computer interaction (Carroll 2000). Even though scenarios have been used for a number of years and several have described the use of them, there is no unambiguous definition of what a scenario is (Karat and Karat 1992). A scenario has been defined as a description of natural, hypothetical, or imagined contexts for user-product interactions (Suri and Marsh 2000). Another definition determines the scenario as a description of tasks, work contexts, and the actions that the user performs or would like to perform. A scenario outlines a future technology (Nardi 1992). More broadly, it is referred to as a story about people and their activities (Rosson and Carroll 2002). Previously, I myself have described a scenario as a story about specific characters, events, products, and surroundings (Nielsen 2004).

Scenarios are used in the development process that combines reorganisation of business processes with system development (McGraw and Harbison 1997). They are used as abstract illustrations of IT systems, for example, use cases. In agile methods, they are called user stories and illustrate a small part of the system, for example, in the following format: ‘As a (role) I want (something) so that (benefit)’ (Cohn 2004). Other scenarios are explorative and used for examining the design area and the possible side effects of the design (Rosson and Carroll 2002).

As the word scenario has been used both to describe abstract systems and to examine design, several authors suggested that there should be a distinction between stories and scenarios (Erickson 1995; Clausen 1993). Scenarios were regarded as more abstract than stories as they leave out the details that stories consist of and as they do not describe motivation for use or the personality of the user. Opposite to this are stories, which purpose is to support the designers’ internal dialogue about the design. This distinction between scenarios and stories did not gain momentum, and today, the word scenario is still used both about formal methods for system development and about informal discussions between designers where the purpose is to uncover user needs (Alexander and Maiden 2004; Hasdogan 1997). However, it is widely agreed that the strength of the scenario is its ability to make design ideas concrete, that it helps maintain focus on the specific context, use, and user, and that it provides the opportunity to relate to both current and future conditions and issues.

As a very concrete tool, the scenario can be used for many different purposes, to discuss different solutions in the project group and to disseminate knowledge about users and various modes of application, and the scenario supports engagement and identification with the user. Let me elaborate a bit on the various ways of using scenarios.

Idea development and idea exploration scenarios can be used to explore design ideas by having both negative and positive endings. They can cover ordinary use and also explore extreme use situations, for example, problem scenarios or scenarios for people with special needs (Djajadiningrat et al. 2000; Bødker et al. 2000; Jarke 1999; Hasdogan 1996). Using scenarios to explore solutions supports a creative process by generating visions about the future and future products. The advantages are that the scenarios are easily changed, that it does not need to have an ending, and that it can be fragmentary.

> 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 program. 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. (Ducatel and Bogdanowicz 2001)
>
> (An example of an explorative scenario)

Evaluation and test of ideas. The scenario can be used to compare several ways of achieving the same goal. Thereby, the various versions are evaluated, and it becomes possible to choose between different design suggestions (Potts 1995; Bliss 2000).

Illustration of a product. When all decisions are made, the scenario can illustrate the future product and how it will support daily activities. It becomes a full specification with illustrations of the decisions that have been made. In a prototype, the purpose is to analyse the requirements to the product and to describe the tasks that it should be able to handle. The product can be described in more and more detail where each feature is described with a short story (Nardi 1992; Heijden 1996; Kyng 1992; Reisner 1992) (Fig. 1).

Include the users in the design process so that they can relate to the specific descriptions of environments and situations. In that way, scenarios can help improve the communication between users and designers (Pruitt and Grudin 2003; Young and Barnard 1992; Bødker et al. 2000).

All these different ways of working with scenarios are, from the perspective of Wack, external scenarios. However, scenarios can also be internal, individual, and non-verbal perceptions of the users and what is to be designed. They can include an implicit understanding of the users and be subconscious scenarios that the designer develops spontaneously (Sharrock and Anderson 1994; Hasdogan 1997). During design discussions, there may also be clashes between the internal and the external scenarios if the internal scenarios are not made explicit. This can, for example, be seen in design discussions where a designer can relate to design ideas coming from specific external scenarios and at the same time discuss the issue based on own internal scenarios.[3]

[3] In a study concerning scenarios in design, it was observed how a group of designers that were asked to create a scenario often forgot to design the system from the persona's point of view. Instead, the participants discussed the system and the possibilities they themselves were interested in. Especially in discussions about technology, functionality, and marketing issues (Madsen and Nielsen 2008).

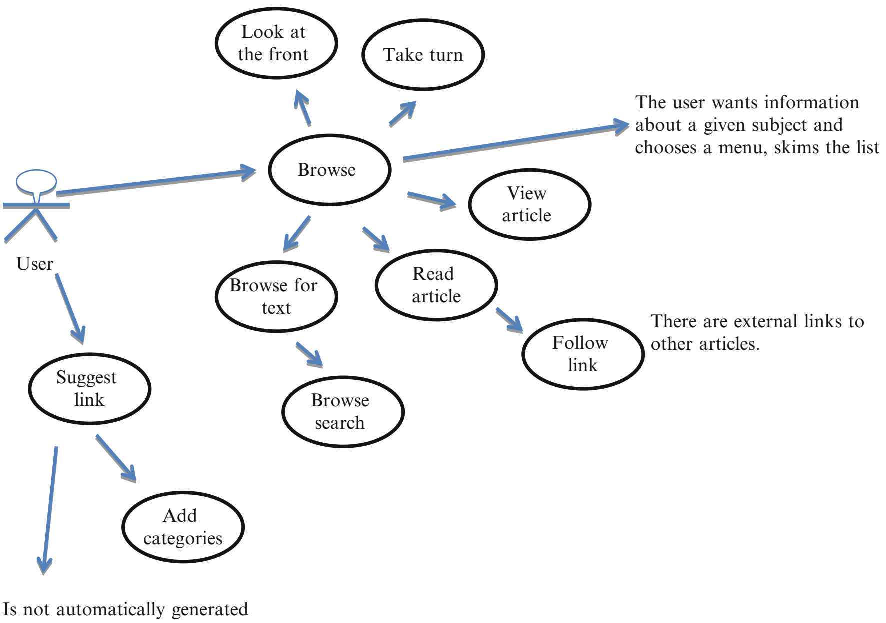

Fig. 1 A use case of a content management system that handles a website and its contents. The illustration has no specific user; instead, there is a role describing an anonymous user without any characteristics

2 Persona and Scenario

When personas are the main characters in scenarios, we are dealing with external scenarios. They disseminate the internal understanding and ideas of the designers as they add a user or customer perspective. The story of the scenario looks at the user as if it were a specific person (persona) with feelings and needs and who carries out a number of actions in a specific context (scenario). Here, the persona is in focus, and the product is both a fellow player and an opponent.

In the persona literature, there is agreement about the latter but there is no agreement about what a scenario with an acting persona consists of or what role the scenario has in relation to the persona. At the same time, personas and scenarios are often seen as separate methods, and some of those who have criticised scenarios for lacking focus on the users see the persona method as the replacement of the scenario method.

Different introductions to the persona method describe various kinds of scenarios. They can be part of a development process where a progression occurs from an introductory and overall scenario to more and more detailed scenarios with increased emphasis on the interaction between user and product (Cooper et al. 2007). The scenarios can be different regarding the level of detail and be anything from descriptive scenarios to requirement scenarios that can be used in the entire development process (Quesenbury 2006). They can be made out as a specific description of the journey of a persona through a website (Mulder and Yaar 2006). Alan Cooper et al. (2007) describes a connection between personas and scenarios, and he writes that a scenario is a specific description of a user using a software-based product to achieve a goal where the goal stems from the persona description. A scenario is thus a story about how a user uses a product.

3 Creating a Story

How a scenario becomes a story and what it should contain in order to be a story is widely disputed. Most writers explain that there is a leap from data to analysis of the data. The process of analysing the information is described in different ways and how they are incorporated in the scenario is not clear. At the same time, the writing process as a whole appears to be something that not everyone masters. It could be described as follows (Rosson and Carroll 2002):

- To begin with, the design area is defined, including the visions, the rationale, the assumptions, and the interested parties.
- Next, data is collected from the work place through observations, interviews, or the collection of artefacts. The focus is on acting agents, goals, actions, events, obstacles, random events, and results. The data collection includes observations made with the direct intention of usage in the construction of scenarios.
- The information is analysed to ascertain who the interested parties are and what tasks are performed. Use of artefacts and other more general themes are included. On the basis of this, problem scenarios are developed illustrating the tasks and themes found, and these are placed in a context.
- The process ends with a requirement analysis where the most important features affecting the use are condensed.

In this description, it seems as if there is an easy and gradual transition from data to requirements. In my experience, however, the development of scenarios is not that straightforward. It may, among other things, be difficult to handle all the information collected.

If you look at the various definitions of scenarios, it looks like there are some ever-present elements (Carroll 2000; Potts 1995; Cooper 2003; Suri and Marsh 2000; Bliss 2000; Bødker and Christiansen 1997). A scenario contains some form of *main character* (player/agent/persona) described by his/her role. The main character can be described with personal characteristics, motivation, lifestyle, wishes, and expectations. The main character acts in a physical world that affects the actions of the character, the new product, and other objects in connection. The main character is in a *situation* that is described based on a number of given activities and objects. The main character has a *goal* or a task to do. A *story* plays out. It contains *actions* and describes the obstacles that can occur between user and product. The actions can be seen both from the perspective of the individual user and from an organisational perspective. The story ends with an outcome where *the goal is achieve or not*.

Differences and similarities between the various descriptions of the expected contents of the scenarios are listed in Table 1. Here, you can also see that not all who describe a scenario include a beginning and a context. The various elements look alike, but it is only Quesenbury (2006) and Mulder and Yaar (2006) who specifically describe the elements to be included in a scenario. However, they do not elaborate on how the elements are to be described.

It appears that persona and scenario literature is inspired by the narrative theory even though no one explicitly refers to this as an established school of theory. Mulder and Yar (2006) describe how the scenario elements draw from the content of classic stories, but the writers do not account for how classic stories work. In the following, I will in more detail look at some of the applicable concepts of narrative theory in order to understand the content and shaping of scenarios.

4 Scenarios as Stories

We experience and understand daily occurrences and the way we describe these to others is by telling stories (Schank 1990). We tend to understand our experiences, the social world that surrounds us, and our daily routines, as meaningful stories organised as narratives. We compare the stories of others with events that we have experienced ourselves earlier. And we compare new events with earlier events that we already have understood (Bruner 1990).

In its most basic form, a story contains two components: One or more events and one or more characters involved in these events (Abbott 2002). The concept of a story (narrative) is not easily defined and refers both to the way people organise experiences, to the process of telling a story, and to the plot structure of the text (Larsen 2002).

When we meet stories, we expect them to follow the norm for narratives—the story form—(Abbott 2002), and we also expect that they contain an understanding of what is general social practice within the given culture (Bruner 1990). The listener or the reader uses these expectations to make sense of the events and characters that are part of the story. Our minds go through two fundamental processes; when we experience a story, we distil the essence of it and create a new story ourselves that we store in our memory. And we recreate the essence when we then transform it to a story expressing a certain intention (Schank 1990).

Imagine a party where you tell a story from your day. That makes the listener blurt out: I know how that is. It's just like the other day where I …. Then comes a new story from the listener's life that in some way is similar to your story but not quite. You have understood and passed on your everyday event as a story and the listener compares this to his own experiences and thus understands your story at the same time as he creates a new story that he shares with you.

Table 1 The table presents an overview of scenario elements and various definitions (Madsen and Nielsen 2009)

	Cooper	Quesenbury	Pruitt and Adlin	Mulder and Yar
Beginning		*Context/situation*. The beginning of the story, motivation for what happens, and a focus on what the persona is trying to do	Particular *task* or *situation*	*Establish the goal or conflict*. Conflict: Inner or outer conflict triggers the visit to website
Persona	Are there *multiple users* on a single workstation and device?	*Characters*. The persona is the main character, but other characters might also be involved	Specified *user*—a persona	Document the mission from the persona's point of view. Others can be around influencing the decisions
Context	In what *setting* will the IT system be used?			*Set the scene*: Where is the persona? When does it happen? Who else is around?
Action	Is the persona *interrupted* frequently? Will the IT system be used for extended amounts of *time*? Will other *IT systems or products* be used? What are the *primary activities* the persona needs to perform to meet his or her *goals*? How much *complexity* is permissible, given the persona's skill and frequency of use?	*Plot/action*. Focus on what happens during the scenario and what influences the decisions the persona has to make. *Facts* gathered from user research	*Features* or *functionality*. References to specific features or functionality the persona will need and/or use. *Procedure* or *task flow information*	*Overcome crisis* along the way. Describe intermediate steps and decisions. Does the persona use other sites, email, phones, etc.? How does the persona feel about the experience?
Ending	What is *the expected end result* of using the IT system?	*Resolution*. The ending situation and a focus on what has changed during the story	Clearly defined *outcome* or *goal* for the task	*Achieve resolution* Reach denouement—what happens after the resolution

When referring to narrative theory in scenario literature, the foundation is partly literary theory and partly cognitive psychology. Inclusion of cognitive psychology often happens with reference to schemata theory as, for example, described by Roger Schank (1990). Typically, literary references are either to the Russian formalist Vladimir Propp's list of villains, heroes, helpers, and opponents or to the structuralist Algirdas Greimas and his actantial model for content analysis of events. However, there is a difference between understanding the story in a structuralistic and a cognitive perspective. A scenario understanding drawing on schemata theory implicates that the structure of the text reflects the way that we as people distil meaning. It is sometimes overlooked that there is a difference between the intersubjective perception of stories and their written arrangement. The intersubjective perception includes the shared knowledge and experiences of the reader at a given time, for example, knowledge of the focus area of the project which colours and affects the story. The written arrangement of a text looks solely at the text and tries to understand narrative structures.

Instead of looking at how we mentally organise our experiences, I would suggest that the starting point is literary. Now, I will especially focus on the various elements of a story and the pitfalls in stories when working with personas.

5 Narrative Structure

If we use the classic dramatic story as our starting point, it contains three acts. Every act starts by a calm episode and ends with a crisis or the solution to a crisis. Every act builds in intensity compared to the previous act. The three acts can also be described as:

- Act 1 is the beginning where the main character, the problem, and the goal are *presented* along with the time in which the story takes place.
- In act 2, the middle, the *conflict* develops towards the final confrontation.
- In act 3, the end, *the goal is achieved*; gaps in the story are bridged and explanations presented. In that way, developments are created. Every episode is part of the overall story and has a connection to it. The chain of events constitutes a plot linking the events together to a whole and makes the story move forward (Polkinghorne 1988).

As all stories, scenarios also have a beginning, middle, and end. They have plots that develop; they have scenes, goals, results, and a main character around which the plot develops. If we look at the description in the beginning of this chapter of how Dorte uses Virk.dk, the dramatic elements of the scenario can be described as follows:

The beginning of the scenario introduces the user, the goal of the user, and the context: Dorte sits by her computer and her goal is reporting.

In *the middle of the scenario*, it is described how the user follows her goal and what challenges she has to overcome to achieve this. Every choice that the user makes is described, and when necessary, the choices of the user are explained by his/her needs or motivation for using the product. In the scenario, we hear how Dorte feels unsure but that her son makes her feel more secure. She tries to find the report, and she finds the search field. One of the obstacles is that Dorte can't access the form of her choice but instead is asked to log in. A page is shown with a message saying that she has forgotten to enter something. Both obstacles are overcome.

Obstacles have a special place in scenarios as they are part of examining the possible solutions that the product entails. If the scenario lacks obstacles and appears too rosy, it may seem unrealistic.

At the end, the result is described how the user achieves his/her goal or if the obstacles are big and not overcome and the goal not reached.

In both the scenario and the story, there are two central points: The events and the character involved in them (Abbott 2002). In the following, I will go through some of the sub-components that also make up the scenario: scene, events, goal, obstacles, and solutions in addition to the overall story elements of causality, plot, and narrator.

5.1 The Scene

The scene describes the surroundings and the time of day where the action takes place as well as other elements of significance to the persona. Scenes are a general occurrence in every story but are not always an explicit ingredient. In the story 'she took her bike and was run over by a car', there is no scene description at all. But the scenario needs a description of where the action takes place as the place can be of great significance to the plot. There is, for example, a big difference between whether you are at home texting and whether you are doing it while on your bike.

5.2 Events

No story without events, and the scenario also needs events to arrive at the goal. The scenario for Dorte reporting through Virk.dk has three events not described in chronological order: 'Dorte sits down by the computer. She installed the signature as soon as she received the letter and pin number. It is uncharacteristic for Dorte to believe that she can manage a reporting quick and easy "just before lunch", so Dorte changes her mind and calls her son and invites him over for dinner. Afterwards, they will do the reporting together.'

The events are:

1. Dorte sits down by the computer (present).

2. Dorte has installed the digital signature (past).
3. Dorte calls her son (present).

The scenario has no scene, but from the persona description, we know that Dorte works in her husband's plumbing firm. The reader then has to assume that the events play out at her office in the house.

When scenarios are used for systems development, it is important to distinguish between the events that the persona sets in motion and the events that are connected to the system. On occasion, I have read scenarios where it is the actions of the system that controls the user, which blocks adaptation of the user's point of view.

5.3 Goals

In the classic story, the character always has a goal. Again, if Dorte is our starting point, it is her goal to report, but this is hindered by her understanding of the system, which constitutes a number of obstacles that she has to overcome.

In the classic story, it is the goal along with the conflicts and obstacles that drive the story forward. Here, the scenario deviates from the story as the persona in the scenario has some needs that create a goal. And it is solely the goal that sets everything in motion.

5.4 Obstacles

Understanding the obstacles of the users when using the product is essential to develop and redesign products. Often, the obstacles become visible during the collection of data, and they can stem from the system itself and from the surroundings.

> The home page comes up. The tab titles have not been resized to larger text. Roger has trouble finding the Exchange tab and wonders if he should bother to open his screen magnification software. He decides that it's too much trouble, and simply leans closer to the screen. He finds the Exchange tab and clicks on it. (Henry 2007)
>
> [This scenario describes a retiree (Roger) selling and buying shares and it examines the obstacles that an older, visually impaired person can encounter when stock trading is done on a computer.]

If we again look at the scenario for Dorte, the obstacle of installing a digital signature is not examined. It is a prerequisite that she has installed the signature, and the story begins from this point. But how likely is it that she can do this herself when she needs help from her son to do her first digital reporting? You often see scenarios, especially in IT, where just giving the persona an IT system solves all problems. This type of scenarios I call 'happy scenarios' as they always have a happy end. They lack obstacles, and the solution is always that the IT product will make everything much easier.

Another significant obstacle that should be examined is that the son's presence apparently is necessary for Dorte to use the system. The son here seems to be the modern, human answer to what is referred to in Greek tragedies as 'deus ex machina', a divine intervention that makes everything move along. In my seminars, I have often seen sons and fathers appear in the scenarios, and they are always a sign of that there is something fundamentally wrong with the product.

5.5 Cohesion

A story contains conflicts, obstacles, implied information, and other means of creating suspense. At the same time, the reader is the co-creator of the suspense by making assumptions about what will happen next. In that way, creating meaning is an integral part of the story (Bordwell 1997). To ensure that reception of the story can take place, two elements are necessary: cohesion and ending. If there is no cohesion between the various elements of the story, the reader will add elements or change the order of the elements. This happens to maintain the established structure of the story and to create a rudimentary meaning (Fludernik 1996). The cohesion does not only affect the story itself but also influences the character, the scene, and the plot where everything must be cohesive. An example of creating cohesion is the way the crime novel ties together all the loose ends once the murderer has been found.

The scenario is both a tool to get ideas and a tool to communicate them. When you read a scenario, it may be difficult to see the relation to the data that is the foundation of the scenario. That means that the reader must believe that the scenario describes the world of the user. Thus, the cohesion also applies between persona and scenario.

In a project about a website for asthmatics, a scenario was written about a GP, who is to demonstrate the website and provide a patient, Helle, with a log in. The scenario developed along the story form, and as a story, it was cohesive and seemed reliable. Subsequent discussions between the project participants revealed, however, that the scenario was not cohesive. Here is a part of a discussion where it dawns on one of the participants that the scenario is unrealistic: 'A GP would never bother to spend time on a website with a patient. It is fine if the patient gets the instructions from a nurse afterwards, if she sees the system demonstrated and sees a video together with the nurse. But the GP would never go to the website; that is a mistake. GPs don't have time for this' (Nielsen 2004). In this discussion, the project participant used his/her expectations about what is standard behaviour among GPs.

5.6 Closure

When the goal is achieved and the conflict resolved, the solution is introduced, then closure is achieved. Closure can both cover a single event or the entire 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. The ending is necessary, and if it is not included in the story, the reader will create it himself. As Brooks (1984) phrase it, it is a human condition that our quest for stories is a desire for the end. The reader wants the story to close, questions to be answered, and desires to know the end. If the end is missing, the reader will find the story confusing and begin inventing elements to finish the story. In the Dorte scenario, the end is missing. The last bit is about her making coffee, but it says nothing about whether she achieved her goal or not.

> Dorte returns to the front page of Virk.dk but is now logged in.
> On the front page, she can choose between doing other kinds of reporting and logging off.
> On the front page, she can choose between doing more apprentice reimbursement, doing other kinds of reporting, and logging off.
> She logs off, closes the browser, shuts down the PC, and goes to make coffee.

This is a description of what Dorte sees but not whether she gets anything done or what she thinks before logging off. Is she only looking? Or does she report and then logs off?

There is a difference between reading and writing a scenario. When we write one, we don't know the end from the beginning, but through the creative process, we want to arrive at it, and we create endings both by discussing them and by writing. A scenario does not need an ending. It can be open and an introduction for discussion where endings subsequently will become clear. If the scenarios are to be presented as the draft of a solution, it must, however, have an ending.

5.7 Causality and Plot

Causality is part of the actual story and covers the way that events follow one another. It gives the impression of a sequence of cause and effect (Abbott 2002). If we look at Dorte's scenario, the events are introduced in chronological order where each event is the cause of the next. This arrangement of all the central events is called the plot of the story. The plot helps create a logical and progressive story and is an unavoidable part of the story. It is the plot that creates cohesion between the individual events and makes the story progress (Cobley 2001).

In order for the plot to be perceived as a logic progression, the scenario has to provide understanding of the background of the persona and motivation for actions. This can be seen in several places in the Dorte scenario: 'It is new and thus a little daunting but at least it looks nice with those colours, she thinks. She looks at her son: What do we do now?' Here, her uncertainty is explained by the fact that she feels the page is confusing. That she finds the page confusion is also part of the persona description where Dorte is not used to do digital reporting and feels unsure about IT. Thus, the background information is used to explain where Dorte is in the story right now.

5.8 The Narrator

The narrator as the one speaking can either be described as a first person or third person narrator. When you use a first person narrator ('I'm riding a bike'), you limit your vision only to cover the individual user. A third person narrator ('she rides a bike') provides the option of including comments on things that the persona has no knowledge of. The example 'she rides a bike but is about to have a flat' contains both descriptions of the character, the context, and of things and events that the character could not have any knowledge of. The third person narrator also makes it easier to switch between present and past.

Some writers suggest the use of the first person narrator because it provides the possibility of showing what kind of language the persona uses (e.g. Mikkelson and Lee 2000). But the advantages of omniscient narrator comments are greater than the disadvantages of lacking the linguistic tone. At the same time, flashbacks also work much better with a third person narrator. An example from the Dorte scenario: 'She installed the signature as soon as she received the letter and pin number.' Another example from the Dorte scenario can illustrate the advantages of the omniscient narrator: 'It is uncharacteristic for Dorte to believe … ' would sound strange coming from Dorte herself. And finally, it can be difficult to distinguish between one persona and the next if they all are referred to as 'I'. Note the difference in the context:

> *First person narrator:* I sit down by the computer. I installed the signature as soon as I received the letter and pin number. It is uncharacteristic for me to believe that I can manage a reporting quick and easy 'just before lunch,' so I change my mind and call my son and invite him over for dinner. Afterwards, we will do the reporting together.
>
> *Third person narrator:* Dorte sits down by the computer. She installed the signature as soon as she received the letter and pin number. It is uncharacteristic for Dorte to believe that she can manage a reporting quick and easy 'just before lunch,' so Dorte changes her mind and calls her son and invites him over for dinner. Afterwards, they will do the reporting together.

Using a more objective third person narrator does not exclude a taste of what language the persona speaks. In the Dorte scenario, there is also dialogue in direct speech included. However, imitating the language of the users requires a very skilled writer, and often, the dialogue can seem contrived and clichéd. Scriptwriters know that it is rather difficult to write good dialogue. Just how difficult is illustrated clearly in the short but contrived dialogue from the Dorte scenario.

> She looks at her son: What do we do now? He says: 'What do you think? We have installed your signature.' 'Well,' Dorte says, 'we need to find the reporting, but where?' 'Well, look, here in the middle of the page there is a search field, maybe we can try searching for it?' 'Let's try,' says the son.

Natural dialogue is often much shorter than you would think. Here is a new attempt:

She looks at her son: What do we do now? He says: 'What do you think? Your signature is installed, right?' 'Yes,' says Dorte, 'where is the reporting form?' She looks at the page. 'A search field?' She points to the middle of the page. 'Try,' says her son.

5.9 Scenario Elements

Table 2 gives an overview of the story elements and the elements in the corresponding scenarios.

6 Design for Various Usages

Scenarios can have various designs; they can be written, drawn as cartoons or product sketches; and they can be acted out. The common denominator for these methods is that they have a progression in time and that they are seen from the point of view of a specific persona. The way the scenario is set up depends on what the scenario is to be used for, and there is a difference between IT system development and product development. In IT system development, there is a tradition for using text and illustrations to demonstrate a scenario as shown in the use case (Fig. 1).

In product development, the purpose is to develop a new product and not create interaction. The product will often be used in very different settings, and there may be many and diverse processes included in using the product. Here, ideas for new products emerge by examining the many different contexts and processes included in the use. The scenario is set up to create an understanding of both the processes involved and the possible solutions and that is best achieved by some sort of role playing (Howard et al. 2002). This we observed in a project where the purpose was to develop new food products. Food products have to be transported from shop to kitchen, they may be an ingredient in a recipe, and they often need processing. In order to understand all these processes, the participants used paper and empty water bottles to simulate kitchens, cookers, pots, and pans. They assigned roles for each other and acted out scenarios where one of the participants acted the persona. This helped them understand how the different processes were interlinked. It also helped them share knowledge and get new product ideas. This way of developing creates demands for documentation of the process as the role playing not necessarily is recorded. The process of documentation has to be decided beforehand.

Co-design sessions with users are another way of working with personas and scenarios. Here, the users are asked to act a persona and carry out a scenario from the perspective of the persona. There are two directions within user participation in product development: user involving design (participatory design) where the user is an active part of the development process or user focused design where the focus

Table 2 An overview of the narrative elements in traditional stories and in scenarios (Madsen and Nielsen 2010)

Narrative elements	Narrative elements in a scenario
Character(s): A protagonist as well as minor characters. A character can be any entity that has agency, involved in the action	In scenarios, the persona is the protagonist
Time: Both the time in which the actions take place, e.g. the future, and the story development over time—beginning, middle, and end	Most scenarios are set in present time, but they can also concern a distant future The story time can last minutes, days, months, etc.
Problem: A loss, a need, a lack of something, an obstacle to overcome, a conflict	The persona has a problem
Setting: Presentation of characters, location, problems, and time	The narrative begins with a presentation of the persona, his or hers problems, the place where the action takes place, as well as the time (present time/distant future)
Opening episode: The character reacts to the problem, sets a goal, and outlines a path to the goal	The persona defines the goal and starts to act
Episodes: Development towards the goal. Episodes consist of: Beginning Attempts Events (accidents, obstacles, happenings, deliberate human actions) Development	The scenario develops through a sequence of episodes that concern the problem, the goal and the attempts to reach the goal, the events involved in these attempts, and the obstacles hindering fulfilment of the goal
Resolution: The problem is solved and the goal is reached—or not.	There are two types of scenarios—one where the problem is solved and the goal is reached and one where they are not
Plot: The linkage and order of the episodes	Most scenarios are presented in a linear manner, without deviations from the story time
Overall story: Starts with a beginning, goes through a middle, and arrives at the end	Each episode links to and has to be meaningful in relation to the overall story
The overall story is sensitive towards what is considered ordinary social practice within a given culture and explains deviations from accepted social practice	The scenario has to explain why non-routine actions and events happen and how they are dealt with
Narrator's perspective: The narrative is told by someone	Most scenarios are told in third person, allowing the narrator to be omnipotent

is on the users in the process but where they do not participate. Co-design with personas combine the two methods by letting the user act out a persona. The method was tried out in practice by letting cafeteria managers participate in an ideation process using personas. Since then, I have seen the method used in student projects having users act out different personas. The advantages of this method is that the user can be included on the same level as the project participants in the development process and at the same time bring their expert knowledge from the focus area to the table.

The user is forced to relate to the focus area and the information in the persona description. Thereby, the differences that appeared in the analysis between the various persona descriptions are maintained. In the student projects, we saw how users without any difficulty were able to switch between looking at the same scenario from different persona perspectives and suggest divergent solutions. The participant is familiar with other users and their way of reacting and at the same time reflected on the way that they themselves would react. A session with a user acting out four scenarios from the perspective of two personas takes about one hour. Letting users act out scenarios is an efficient way of including the voice of the users at early stages in projects, and is part of supporting the understanding of the world of the users (Nielsen 2011).

7 Writing and Reading

Before you begin describing the scenario, decisions have already been made about what situations should form the basis, what issues the scenario should describe, who the main character is, and what issue the scenario should solve. From this emerges a creative probing of the many possibilities that can be created.

In the writing process, an exploration takes place comparable to the experience of the Russian writer Tolstoy when he wrote the novel Anna Karenina. In the novel, the main character Anna Karenina has an affaire with Count Vronsky. Tolstoy describes that he, after having described how Vronsky and Anna had made love and Vronsky had gone back home, to his surprise, realised that Vronsky was ready to commit suicide (Abbott 2002). It is Tolstoy's knowledge of Count Vronsky and the situation that Vronsky is in that created the story, and the writer does not know what will happen until he is in the midst of writing. The suicidal act reflects both the circumstances Vronsky is in and his characteristics, and it emerged so to speak from the material.

When the story in this way drives the creativity, it may present solutions, but it can also seduce the writer. The writer must be aware of not being swept away by his own imagination. When the scenario is written, it is thus a good idea to go through it to see whether it solves the presented challenge.

8 The Scenario and the Reader

When we read a scenario, a process begins that is comparable to reading a novel. Gradually, we start getting a thorough understanding of the individual elements of the story, and every element is part of helping us see the whole picture. We infer the individual elements that are not described to us. Thus, we create an individual story where we use our own knowledge of what is described, our cultural experiences, and our experiences of how stories typically are structured. An example: 'Michael stands on the 27th floor and waits, a "ping" wakes him up, and he steps in and presses

“1”. Out on the street, he meets Henry.’ In this very short story, we don’t need to be told that Michael enters an elevator, that it goes down, and that he exits the elevator and the building. If we have no experiences with elevators, we will mentally try to find possible solutions as to how a man gets from the 27th floor to street level. The narrative elements that are not described in the story are called narrative gaps. The bigger the narrative gaps, the more we need to use our own knowledge to fill these gaps (Iser 2000).

Because the structure of the story is part of our implicit knowledge, we can feel when something is off and if the structure of the story is interrupted. We are then interrupted in the reading and drawn out the world that is described in order to try and create meaning (Bruner 1990). Another example: ‘Michael stands on the 27th floor waiting. A “ping” wakes him; he turns off the TV.’ What happens here? Is it a dream? Is it science fiction? Does he have TV on his mobile? Has a lot of time passed between the two events? In this story, the reader has to use a lot of energy forming an opinion on where the story takes place and what it is about. Whether we are conscious of the structure of the story or not, we have an implicit understanding of it.

9 Documentation

When we begin writing a scenario, a process begins identical to the reading process. We write based on knowledge about the users and their application of the product, which stems from the data collection. But we also use own experiences with people and situations similar to what we describe. The information we write down, we try to organise according to the structure of the story. The actual work of preparing a scenario does not mean, however, that you begin by writing something down. Often, the process is a sort of interaction between discussions and writing down or maintaining ideas. In scenario literature, there is no agreement about what status the writing process and documentation has. Is the scenario a document containing previously established ideas? Or is it an expression of a creative process that more likely activates ideas and explores the design area? If the function of the scenario is both to get ideas, to introduce them in an open form, and to be a checklist for systematic reflection (Bødker and Christiansen 1997), then we have to be able to identify different elements of the content. We need to be able to understand the writing process in order to establish a connection between writing a story and understanding it, the connection between writing a scenario and subsequently analysing it.

There is a difference regarding what kind of scenario you use. When using e.g. role playing, the ideas that emerges are not necessarily written down or collected in a rigorous manner. An example of how you work with collecting knowledge stems from the development of new services at the communication department of the Danish parliament. Here, we had a process where (1) the participants, based on a

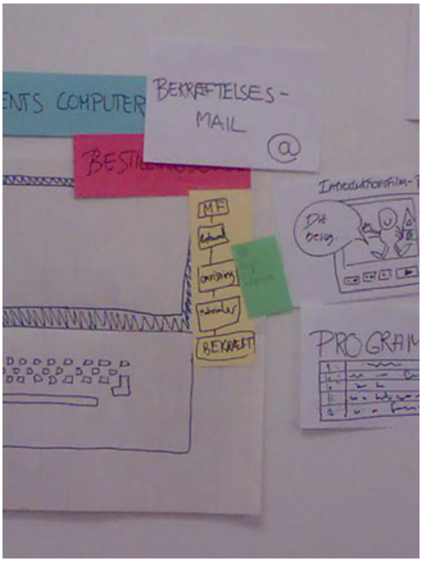

Fig. 2 Different materials make up the scenario

specific situation, developed new services (a poster was to be made illustrating the service). (2) They presented their ideas to each other. (3) They then swapped ideas and discussed pros and cons (captured by post-its on the original posters). (4) Finally, they presented their discussions for one another.

In all presentations, we had someone take notes from the discussions. Subsequently, the materials prepared were gathered, revised, and redrafted to present ideas and summarise scenarios and discussions (Fig. 2).

10 The Difficult Writing Process

We have the ability to feel when something is wrong with the structure and cohesion of a story. Understanding and relating to structures is not the same as having the ability to tell a story. In order to tell the story, the writer has to have more knowledge than the reader, as she needs to be able to make decisions about how events will develop and the intentions of the character. The writer must master the narrative, understand how to examine obstacles, and move the character towards the goal. An analysis of the accountant Jesper scenario for Virk.dk demonstrates how difficult it is to follow the structure of a story (Madsen and Nielsen 2008).

> 'Jesper sits in his office and is about to use the new Virk.dk for the first time (…) He has a lot of bookmarked links (…). How does he get these links into the new system?' (Excerpt of the situation)
>
> On January 2, the clients (companies) expect that piles of work will be dealt with efficiently, and Jesper must expect that the phone will be ringing and that the clients may not understand that a new reporting system is to be used.

> Jesper knows that Virk.dk has changed at the New Year. He has seen it several places, both at the portal in recent months, in a newsletter and maybe in the media. The newsletter has also revealed part of the design and may boast new features.
>
> Since it is one of Jesper's primary work tools that have been upgraded, he is critically expectant (as a developer with a new computer, a driving instructor with a new car).
>
> However, it has slipped his mind when he after a New Year's chat with his co-workers and with a cup of coffee in hand grabs the pile and turns on the computer. His start page may be a deep link or log in to Virk.dk (or he uses a bookmark from his computer).
>
> The system shows him a polite error message with information about the site having been upgraded. There is a link to a longer guide, a couple of tips for what new page he might want instead and possibility for log in.
>
> Jesper immediately remembers what he knows about the changes at Virk.dk (the system needs to work and be quick as well as ensuring him that he is at the new Virk.dk, not an unfamiliar site).
>
> The system may also react to 'old' deep links by transforming links to a search and showing some search results on the actual error page.
>
> You can analyse log files from the existing Virk.dk and look for links without 'referees' (URL). You could also do statistics of what pages the users have bookmarked. This knowledge can be used for doing a conscious *mapping* from old to new pages.
>
> Jesper chooses to log in.
>
> A welcome with information about the new options greets Jesper. The system 'recognises' him (as new user and agent).
>
> (Excerpt of the Jesper scenario for Virk.dk)

Before the project group started writing scenarios, they had read the Jesper description where he is introduced as someone who loves his family and would like recognition from his colleagues and superiors. Because he is an accountant, he is an experienced user of Virk.dk. The scenario takes place on January 2, 2008, the first day at the office after Christmas. This was the day chosen for relaunch of the redesigned Virk.dk. The story describes the scene in detail, the main character, time, and place. Also, the problem of the relaunch of Virk.dk and the new features to be learnt are thoroughly described. In the following, italics are used to describe the various points of view in play, both that of Jesper, the system, and an anonymous system developer.

The beginning describes Jesper's workday, and his goal is presented as doing reporting for a client. The story begins with Jesper arriving at work, sitting down with a tonne of work, clicking one of his bookmarks and discovering that Virk.dk has changed.

> However, this has slipped *his* mind when he after a New Year's chat with his co-workers and with a cup of coffee in hand grabs the pile and turns on the computer (…) *The system* shows him a polite error message (…) *Jesper* immediately remembers what he knows about the changes at Virk.dk. *The system* may react to 'old' deep links by transforming links to a search and showing some search results on the actual error page. *You* could analyse the log files from the existing Virk.dk (…) and do some statistics of what pages the users have bookmarked. This knowledge can be used for doing a conscious mapping from old to new pages.

The scenario ends with Jesper noting that he must remember to explore the new Virk.dk site later, set up 'My Page', and recreate bookmarks also because he would like to be able to help his colleagues. Jesper's focus on being able to help his colleagues is motivated by the wish for prestige. This creates the framework for dwelling into the issues, namely, when and why experienced users should explore and understand Virk.dk. The scenario only superficially touches on this subject without going into detail with it, as a ‘happy end’ solves the problem where Jesper decides to explore the site later.

When reading through the scenario, the group discovered that they did not solve the problem described in the beginning of the story. However, this did not make the group change the written scenario. When the group later on presented their scenario for the entire project group, they neglected to discuss the shortcoming with the audience.

Those who wrote this scenario got a good knowledge of Jesper as a person and an experienced user of Virk.dk. They also got design ideas to deal with the issues regarding bookmarks. They got an understanding of Jesper’s needs for different personalised point of views (a view that pertains to him and one that pertains to the companies he reports for).

When you look at the overall story, it is cohesive, but the contents still seem fragmented. The beginning is depicted in detail, but as the story progresses, the narrative changes. Occasionally, Jesper seems to have left the story in favour of technical aspects of the present and future Virk.dk. This makes it difficult for the reader to understand and construct the overall story, as can be seen in the excerpt of the scenario, where the point of view switches back and forth between the persona, the IT system, and design activities.

Not everyone can write a cohesive story. When you write a scenario, it should follow the convincing structure of the story in order for the scenario to create a sense of recognition. The reader will subconsciously perceive simplified actions as unrealistic. However, it is much easier to analyse what is unrealistic than writing a scenario that convincingly captures the narrative and, based on a design perspective, solves the problem of the persona.

How to ensure that all narrative elements are incorporated is shown by an example from a use case for a HR system. It is a hiring process from the perspective of both the user and the system and incorporates the processes that can go wrong and interrupt an optimal flow (Table 3).

11 Pros and Cons

What are the pros and what are the cons in using scenarios? The advantages are that they are specific and use a language that is easy to understand and easily accessible for both the users and the designers. In the scenario, the focus of the design process is on use. It is vividly described why a product is necessary and how it will be used. That way, the scenario strengthens the understanding of what experiences and actions are needed for the user to achieve his/her goals. When that has happened, it is easier to go back and deconstruct the scenario, i.e. go back to critically assess the prerequisites to actually achieve this goal. This way, the project group creates an agreement about what constitute the finished product (Sutcliffe 2003; Jarke 1999; Kyng 1992; Bliss 2000).

Table 3 A use case that describes a hiring procedure

	User	Minor characters	System
Beginning Who is the user? Where does use takes place? What goal does the user have?	The user is the manager Allan Allan is not placed in-house. He is in front of his PC, has found a candidate to a position in his department. He wishes to implement an employment with a trial period and a follow-up to consider the employment He opens MSS and fills in the form with relevant information, which is predefined in the form		SAP MSS. Data is registered directly in SAP R\3
Middle How does the story develop? What choices does the user make? How does the user make the choices?		HR administrator (an employee at HR) gets a message that Allan has entered data on employment. The HR administrator enters and finishes the personal data. A letter of appointment is generated If Allan wants the employee to have a higher wage than negotiated with the union, a supplement is generated and sent to the union. At the same time, an email with a letter of appointment is sent to Allan for information	Message is read in SAP ESS, and data registration is done SAP R\3 The letter of appointment is send with ordinary mail The contract is send to the union with ordinary mail
Ending Does the user achieve his goal? Or does he not?	The manager gets a copy of the letter of appointment Two weeks before the trial period, he gets a notification about expiration of trial period. The manager decides whether the employee should have a position or not. If the employee is not to continue, a process of non-applied dismissal begins		The reception of the letter of appointment happens in SAP MSS and for HR in SAP ESS

(continued)

Table 3 (continued)

	User	Minor characters	System
Obstacles What can go wrong?	The manager tries to do the process outside the system SAP MSS The HR administration accepts a process outside the system SAP MSS The manager does not react on the notification of ending of trial period. He then acts too late for dismissal of candidate New employee does not sign the contract		

Scenarios have the disadvantage that they may confirm assumptions and create a false sense of security as it is difficult to know whether knowledge from the focus area is adequate and whether significant information is included in the scenarios. At the same time, they may focus unnecessarily on individual details. Because designers are focused on creating solutions, scenarios may despite all attempts shift focus from user to product as was seen in the example with Jesper.

To summarise:

- The scenario creates a framework for specific knowledge and reflection in action.
- Scenarios support communication and shared understanding between the project participants and between the users and designers.
- Scenarios can be part of helping the ideation and reject design ideas that turn out not to be viable. They are easy to revise and can be written for many purposes and with different levels of details.

In short, the disadvantages of scenarios are:

- A small number of scenarios can seduce participants to believe that all options are covered.
- If not used appropriately, they risk supporting assumptions based on belief rather than knowledge.
- As scenarios by definition are detailed, they may make participants ignore the overall image and make them unnecessarily preoccupied with individual parts.
- It may be difficult to understand how data are incorporated in the scenario.

12 Templates

These two templates can be used as guidelines to prepare scenarios.

12.1 Template for Scenarios for Ideation

Situations

- A list of all situations where the persona would use the product

Preparation for the Scenario

- A list of obstacles

The Scenario Itself

The beginning of the scenario:

- Where does the use occur?
- When does it occur?
- What is the goal of the persona?

The middle of the scenario:

- What interaction occurs along the way to the goal?
- What is the persona thinking?
- Which obstacles occur?
- How are they overcome?

The end of the scenario:

- The persona reaches the goal.
- The persona does not reach the goal.
- Should something happen after reaching the goal?

After development of the scenario:

- Analysis of the scenario where you examine whether all obstacles have been dealt with

12.2 Template for Scenarios Looking at Current Solutions

Situations:

- Problems with the current product
- When will the persona use this product?

Scenarios:

- The product is examined from the different personas' point of views.

References

Abbott, H. P. (2002). *The Cambridge introduction to narrative*. Cambridge, MA: Cambridge University Press.

Alexander, I. F., & Maiden, N. (2004). *Scenarios, stories, use cases*. Chichester: Wiley.

Bliss, D. (2000). Narrative scenarios as a design tool. Retrieved August 12, 2002, from http://www.davidbliss.com/viewEntry.asp?unique_id=232

Bødker, S., & Christiansen, E. (1997). Scenarios as springboard in CSCW design. In S. S. G. Bowker, W. Turner, & L. Gasser (Eds.), *Social science, technical systems and cooperative work* (pp. 217–234). London: Lawrence Erlbaum Associates.

Bødker, S., Ehn, P., Sjögren, D., & Sundblad, Y. (2000). *Co-operative design – Perspectives on 20 years with 'the Scandinavian IT Design Model*. Stockholm: NordiChi.

Bordwell, D. (1997). *Narration in the fiction film*. London: Routledge.

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.

Carroll, J. M. (2000). *Making use – Scenario-based design of human-computer interactions*. Cambridge, MA: MIT Press.

Clausen, H. (1993). Narratives as tools for the system designer. *Design Studies, 14*(3), 283–298.

Cobley, P. (2001). *Narrative*. London: Routledge.

Cohn, M. (2004). *User stories applied: For agile software development*. Boston: Pearson Education.

Cooper, A. (2003). The origin of personas. Retrieved January 30, 2010, from http://www.cooper.com/journal/2003/08/the_origin_of_personas.html

Cooper, A., Reimann, R., et al. (2007). *About Face 3.0: The essentials of interaction design*. Chichester: Wiley.

Djajadiningrat, J. P., Gaver, W. W., & Frens, J. W. (2000). *Interaction relabelling and extreme characters: Methods for exploring aesthetic interactions* (pp. 66–71). New York: ACM.

Ducatel, K., & Bogdanowicz, M. (2001). *ISTAG - Scenarios for ambient intelligence in 2010.* Retrieved July 30, 2003, from ftp://ftp.cordis.lu/pub/ist/docs/istagscenarios2010.pdf

Erickson, T. (1995). Notes on design practice: Stories and prototypes as catalysts for communication. In J. M. Caroll (Ed.), *Scenario-based design – Envisioning work and technology in system development* (pp. 37–59). New York: Wiley.

Fludernik, M. (1996). *Towards a natural narratology*. London/New York: Routledge.

Hasdogan, G. (1996). The role of user models in product design for assessment of user needs. *Design Studies, 17*, 19–33.

Hasdogan, G. (1997). Scenario-building in the product design process. In P. McGrory (Ed.), *The challenge of complexity* (pp. 134–141). Helsinki: University of Arts and Design, UIAH.

Heijden, K. (1996). *Scenarios – The art of strategic conversation*. Chichester: Wiley.

Henry, S.L. (2007) Excerpt from Just Ask: *Integrating Accessibility Throughout Design*. Retrieved 11/4 2011, www.uiAccess.com/accessucd/.

Howard, S., Carroll, J., et al. (2002). *Using 'endowed props' in scenario-based design*. Aarhus: NordiChi.

Iser, W. (2000). The reading process: A phenomenological approach. In D. Lodge & N. Wood (Eds.), *Modern criticism and theory: A reader* (pp. 188–205). Harlow: Pearson Education.

Jarke, M. (1999). Scenarios for modeling. *Communication of the ACM, 42*(1), 47–48.

Karat, C.-M., & Karat, J. (1992). Some dialogues on scenarios. *SIGCHI Bulletin, 24*(4), 7–17.

Kyng, M. (1992). Scenario? Guilty! *SIGCHI Bulletin, 24*(4), 8–9.

Larsen, S. E. (2002). Narratology and narrative: History and perspective. *Almen Semiotik, 16*, 130–145.

Madsen, S. & Nielsen, L. (2008). *An empirical study of the inventive aspects of narrative scenarios in IT redesign*. Retrieved April 12, 2011, from http://personas.dk/?p=120

Madsen, S. & Nielsen, L. (2009). *Using Storytelling to Improve Scenarios*. IADIS International Conference Information Systems, Barcelona, Spain.

Madsen, S., & Nielsen, L. (2010). Exploring persona-scenarios – Using story-telling to create design ideas. In D. Katre, R. Orngreen, P. Yammiyavar, & T. Clemmensen (Eds.), *Human work interaction design, usability in social, cultural and organizational contexts* (pp. 57–66). Germany: Springer.

McGraw, K. L., & Harbison, K. (1997). *User-centered requirements: The scenario-based engineering process.* Mahwah, New Jersey: Lawrence Earlbaum ass.

Mikkelson, N., & Lee, W. O. (2000). *Incorporating user archetypes into scenario-based design*. UPA 2000, Usability Professionals Associates.

Mulder, S., & Yaar, Z. (2006). *The user is always right: A practical guide to creating and using personas for the web*. Berkeley: New Riders Press.

Nardi, B. A. (1992). The use of scenarios in design. *SIGCHI Bulletin, 24*(4), 13–14.

Nielsen, L. (2004). *Engaging personas and narrative scenarios*. København: Samfundslitteratur.

Nielsen, L. (2011). Personas in co-creation and co-design. *Proceedings of the 11th Human-Computer Interaction Research Symposium* (DHRS2011), pp. 38–40.

Polkinghorne, D. E. (1988). *Narrative knowing and the human sciences*. New York: University of New York Press/Association for Computing Machinery.

Potts, C. (1995). *Using schematic scenarios to understand user needs*. New York: DIS.

Pruitt, J., & Grudin, J. (2003). *Personas: Practice and Theory.* Retrieved January 25, 2010, from http://research.microsoft.com/en-us/um/people/jgrudin/publications/personas/pruitt-grudin.pdf

Quesenbury, W. (2006). Storytelling and narrative. In *The personas lifecycle* (pp. 520–555). San Francisco: Elsevier.

Reisner, D. (1992). Further uses of "scenarios". *SIGCHI Bulletin, 24*(4), 15.

Rosson, M. B., & Carroll, J. M. (2002). *Scenario-based usability engineering*. Tutorial. London, DIS 2002.

Schank, R. C. (1990). *Tell me a story: A new look at real and artificial memory*. New York: Scribner.

Sharrock, W., & Anderson, B. (1994). The user as a scenic feature of the design space. *Design Studies, 15*(1), 5–18.

Suri, J. F., & Marsh, M. (2000). Scenario building as an ergonomics method in consumer product design. *Applied Ergonomics, 31*(2), 151–157.

Sutcliffe, A. (2003). Scenarios, models and the design process in software engineering and interactive systems design. HCI Design, Manchester, Department of Computation.

Young, R. M., & Barnard, P. J. (1992). Multiple users of scenarios: A reply to Campbell. *SIGCHI Bulletin, 24*(4), 10.

10: It Does Not End Here

The persona project is well underway; the descriptions are used for ideation, to support dialogue, to recruit users for test of product drafts, and to communicate with the users etc. But how long will the method be able to maintain focus? What happens if we get new knowledge about the users? And when is it time to get the information updated? I will examine these questions in more detail in *Step 10: Ongoing adjustments are made.*

The shelf life of persona descriptions differs greatly. Some companies have long-term development perspectives where a product is continually developed but the core remains the same. In that case, a description can be valid for years. Others create new products in much shorter development processes, and a persona for them may only be valid for a few months, and then they move on to a new project with a new target group. But regardless of whether you have long-term or short-term developments, the users and the world are ever changing. Thus, it's a good idea occasionally to revise the descriptions, preferably every 2 years.

1 New Knowledge

New markets require new knowledge. New studies from the marketing department or from national statistics may create a need for new information. Knowledge from product or concept tests can also mean that you have to revise your personas. Or new data collection can provide knowledge that bring about a revision. In all these cases, meeting with users contribute to both validating the existing personas and updating of insights. This can lead to a demand that the descriptions are looked at in order to decide for revision.

L. Nielsen, *Personas - User Focused Design*, Human–Computer Interaction Series,
DOI 10.1007/978-1-4471-4084-9_11,

2 New Project Members

If a company gets new employees or new project participants become part of existing projects, this may lead to revising the persona descriptions. In these cases, it is not so much the contents but rather the mode of communication that might have to be changed. It may be that a persona description has long passages of text that make new employees or project participants to distance themselves from the descriptions while it is easier for them to accept bullet form descriptions. In this case, it is necessary to change some of the presentation to get the new employees to use the method.

3 Choose an Ambassador

A study of the use of personas in Denmark summarised the requirements for continually practice (Vorre Hansen 2009). To continue adding value to the product development, it requires first and foremost that the descriptions are present and thus visible for the various project groups and secondly that they are updated. The project participants using the method most actively and that are the most satisfied using it are found in companies where these two conditions are present. For the companies where the method either has not been incorporated properly or has been forgotten, the persona descriptions have typically not been visible for all, or the descriptions were not up to date. It is obvious that the descriptions must be communicated to be visible for all project participants. But the importance of continuous updating should not be underestimated. Updating descriptions is part of maintaining a focus on the users and becomes a continual reminder of the value of the method.

The method works best in companies where the descriptions and the responsibility for updating them are close to the actual product development. This is in line with Browne (Browne et al. 2011) who in a study of obstacles for the use of the persona method describes that in order to succeed, the persona descriptions must be cohesive in data, integrated in the design process, and accepted by the organisation.

Thus, it may be a good idea to transfer ownership of updating and maintenance to departments or individuals who are close to the daily use. Thus someone becomes responsible for keeping the foundation document updated and deciding when a persona should be revised or eliminated.

References

Browne, J., Dorsey, M., & Peterson, J. (2011, March 3). *Customer experience professionals: Break through persona obstacles now* (Forrester Report for Customer Experience Professionals, pp. 1–6). Cambridge, MA: Forrester.

Vorre Hansen, A. (2009). *Personas nu og fremover*. Retrieved April 7, 2011, from http://personas.dk/?p=155

Personas in a More User-Focused World

International studies have shown that there are a number of areas that affect the success of the method (Browne 2011). Some companies do not want to use the method because they think that their segmentation tools can achieve the same result. In other companies, the data that creates the foundation of the persona descriptions is inadequate for any sensible use. Furthermore, the quality of the descriptions may be poorly executed so that the personas are seen as unreliable. Finally, some companies dive into developing personas without having thought about what they are to achieve. But what is the status of using the method in the world?

I have now described my take on personas and given you examples from a Danish context, but how is the method implemented around the world? I have asked usability professionals and design researchers in eight different countries—Australia, Brazil, Finland, India, South Korea, Japan, Russia, and the UK—to contribute on how personas are being used in their country. I started off asking them to give a historic overview of the use of the method and to describe how the method is used today and, finally, what type of companies that use the method. The contributors solved the task differently, and each gave their individual views on how they have worked with personas and the status of using personas in the different countries.

1 An Australian Perspective on Personas

By: Ilana Kaplan, Principal Consultant, and Susan J. Wolfe, Managing Director. Optimal Experience, Sydney, Australia.

1.1 In the Beginning

Although we were among Australia's leading advocates for user-centred design as far back as the early 1990s, it wasn't until approximately 2005 that we were engaged by a client specifically to develop personas. The brief was to create a document

L. Nielsen, *Personas - User Focused Design*, Human–Computer Interaction Series,
DOI 10.1007/978-1-4471-4084-9_12,

describing key user types, using personas, for one of Australia's large banks. Until then, key design artefacts had largely been activity scenarios—descriptions of users within the context of use. In Australia, personas in their own right only started to be used after large organisations (usually financial) and government agencies had become much more formal in their approach to user experience design, and the topic of personas had become prevalent in the literature. Initially, personas were part of the discussion around creating context for design and for emphasising the relevance of end users to various stakeholder groups (particularly those with little exposure otherwise, such as programmers). In the early user-centred design courses we taught, we suggested taking photos of end users to help the wider team keep them top of mind. In subsequent years, personas in and of themselves became a more structured user-centred design technique, and they made their way into our courses and into our practice.

The insights that follow represent our own experiences and those of some of our professional colleagues in this part of the world.

1.2 The Value of Personas

Personas Foster User-Centred Design

One benefit of using personas that has remained unchanged over time is the ability to expose stakeholders to the types of people for whom their product or service is intended. Personas bring the end users front and centre by describing the key end users and their characteristics in a succinct package. 'They are a great tool for focusing design around the needs of others rather than for ourselves, and I think that's the primary benefit of personas for us' (Stephen Cox, customer experience principal at a large Australian financial organisation). In this way, personas foster user-centred design thinking.

Personas Are a Valuable Communication Tool

Another benefit that has persisted is the value of personas as a communication tool. This includes communication between internal team members from different disciplines on the same project (marketing, visual design, domain specialists, developers, business analysts), communication across projects within an organisation (where they are meeting the needs of the same audience), and communication with (and between) external agencies as well. Many design, budget, and development trade-offs become clearer when the end user (represented by the persona) is in the 'room'.

In a project for a case management system in a large public sector organisation, personas were used to help management and project teams understand the impact of the solution on the end users. 'We referred to Bob, rather than User Group 1, and discussions centred on Bob's experience and interactions with other personas. As we discussed the user journey, sticky notes were used for each persona to reflect the impact upon each of them. In the end, the persona Bob was covered in sticky notes that visually demonstrated the complex and onerous nature of the business process' (Caronne Carruthers-Taylor, senior user experience designer).

Furthermore, in the past year or so, we have started using personas effectively to our brief recruitment agencies for finding participants for user studies. Instead of describing the demographics and psychographics for each segment, we have been able to provide detailed personas and request, 'five each of Rebecca, Andrew, and Sharon, please'.

Personas as a Stand-in for Users

In some instances, not surprisingly, we see personas being used as a stand in for real users in circumstances where real users cannot be involved. For instance, the Australian Taxation Office (ATO) often must design solutions in preparation for future events not yet disclosed to the public. 'We may use personas if we are designing an administrative solution for new legislation that is still under embargo and can't be discussed with the community' (Karen Redhead, senior director of co-design, Business Solution, Australian Taxation Office). In this case, personas provide the next best thing to real customers, allowing the designers to better understand the users' requirements and motivations as they start, and then evolve, the design. In such cases, the ATO, and other organisations in a similar position, tries to ensure that they conduct usability testing with representative users before finally going live with a solution. This is likely to persist, as there will always be situations where, for any number of reasons, access to the real users is limited. Personas can play a critical part of the design process in such cases. A note of caution: Real users should always be engaged once the embargo has been lifted.

1.3 Developing Personas

Creating the Persona Is Part of the Process

In our experience, there are a number of ways to create personas. At one end of the spectrum, companies that want to use personas, but do not have in-house expertise or a research culture, use templates to help project members create personas which can then inform design. These tend to be superficial but, nevertheless, introduce end-user focus into the design process, where there would likely otherwise be none. However, it is important to understand the risks of this approach. 'If user research is not conducted, the personas will not be based on evidence, and won't be believable. It is not recommended – it is very risky to create personas simply based on assumptions or discussions with a small group of business representatives or subject matter experts. The latter may not have actually experienced that role for many years and their opinions will cloud their perception' (Carruthers-Taylor).

At the other end of the spectrum, some organisations rely on extensive ethnographic studies to provide the basis for developing personas. These are few and far between, however, and we see most organisations doing a relatively small amount of research and couple that with data mining of their own customer base and known insights to their behaviour.

In terms of who creates personas, in Australia, user experience or marketing specialists are the most likely people to be skilled in developing useful personas. These may be consultants or in-house specialists, usually in larger organisations. We are not aware of any persona experts, per se.

Keeping Them Real

The challenge for personas is to keep them real. 'They are still abstractions of individuals and, while we can look at complexity in the life of a persona, they aren't a replacement for ongoing research into people's real and very messy lives. They are a great place to aggregate data, but sometimes you have to tell a story about a real person or real situation for people to really understand the problem. The only way you can do that is to go out and do more research' (Cox). We have to be cognisant of this when using personas and ensure there is enough in the generalisation to make the abstraction useful.

The way the personas are presented varies between projects and organisations. In its most basic form, personas are simply included as an appendix in the project documentation. These personas usually include, at a minimum, a photo to represent the persona, along with a list of some key characteristics. At the other extreme, some organisations go to great lengths to raise awareness of the personas and socialise their use by creating and distributing 'trading cards', posters, and other collateral to keep the personas in focus. It is likely that we will always see a variety of representations. The end result depends on factors such as budget, user experience (UX) sophistication, and applicability of the personas across the organisation.

The actual rollout of the persona materials is also important in keeping them real. 'We need to be careful how we introduce them and how we write them to make certain they don't take on too much of a fictional/story telling feel – which then seems to reduce their credibility' (Carruthers-Taylor). Getting this right will help ensure the usefulness of the personas beyond the team who created them.

Personas Need to Maintain Currency and Relevancy

When we first started working with personas, they were typically created for one project and rarely maintained or updated over time. What we are seeing now, particularly in organisations with dedicated user experience teams and sophisticated design methodologies, is that the personas *are* being maintained and continually refined to remain current and relevant. These personas are also available to all projects within the organisation. We have certainly seen firsthand how making the personas accessible across different projects helps the organisation focus on the needs of the audience (as well as facilitating communication). 'As time has moved on, we have begun using personas in a more consistent and evolutionary way, where personas are built upon with each research project to ensure that they stay relevant and also reflect our latest understanding of our customers' (Cox). It is important to note that this is still the exception and not the rule.

1.4 Future Predictions: Form and Value

A look into the crystal ball suggests that personas are able to go beyond paper-based, 2D representations. 'Personas could easily become more dynamic, using digital "characters" with video interactivity. Future personas could use gaming interaction design principles so that they are engaging and instructive at the same time (similar to the paintings in Harry Potter)' (Carruthers-Taylor).

In the future, personas are likely to be used more strategically by organisations. They could be created and maintained as new research is conducted around an organisation and utilised as appropriate on a project by project basis. We have heard about an Australian organisation that is looking to 'create "living" personas that aggregate live data from online, complaints lines etc. to sit alongside the more static information about the customer's behaviours' (Cox). This will take the relevance of personas to a whole new level.

In the future, personas are also likely to become part of an organisation's intellectual property. There is no doubt those Australian organisations that decide to invest the effort in personas are going to find them increasingly valuable for inspiring design, maintaining focus, facilitating decision making, and enhancing communication.

2 Brazil

By: *Fernando Oliveira, UX Coordinator, Valor Economico S.A., Sao Paulo, Brazil*

First of all, let me tell you about the context in which I am working. I currently hold a UX coordination position at the largest and most important economy and finances specialised newspaper in Brazil, Jornal Valor Econômico, which is owned by two of the largest communications and media companies of the country: Globo and Folha de São Paulo.

I first heard of the concept of personas back in 2006 when I was working as an interaction designer. I gradually became more and more interested in this technique as I developed information architecture skills, which led me first to change my career focus to information architecture and ultimately to the user experience field.

When I started working at Valor Econômico, in 2010, the company was already fully engaged in a new website project which was being led by a British consultancy company, so the personas for that specific product had already been established. This was a very important step towards a culture of using the method in the planning phase of different projects.

2.1 The First Project

In our in-house UX team, we have information architects, usability professionals, and designers. We are part of a larger Service Design contingent, and the first project fully conducted by our staff in which we felt it would be appropriate to use personas was the planning of new products, tools, and functionalities for the subscriber exclusive part of our website. This was only a few months after I started here, and we needed to understand how different groups of our readers viewed themselves and how our product would fit into their lives and their self-images.

We started our investigation through the analysis of previous marketing surveys, and we launched an online survey in order to detect common traits and patterns of Internet usage, occupation, work environment, income level, and know how. On the online survey, we also asked readers and non-readers how likely they were to use and to pay for each of the possible products, tools, and functionalities.

Based on the major demographic macro-patterns, we recruited for two large discussion groups, each with a mix of subscribers of our website and readers who were potentially future subscribers.

During the sessions, we asked the participants about their habits, especially how they presently look for information and news.

We were looking to find out about where and how they read, watch, or listen to news and what are the most important or interesting subjects for them. We also asked participants about the different environments they find themselves in when they are visiting our website; if they are at home, at the office, or somewhere else; if there is someone with them at that moment; at what time they visit and how long they stay at the website; and what else they might be doing while they read our news. Lastly, we asked them about the usage of other media, their likes and dislikes, motivation, and expectation related to news and information consumption. All the while, we observed closely for any indications of participants' mood, demands, anxieties, satisfaction, and other psychological characteristics.

During the sessions, we also conducted brainstorm and co-creation activities and discussion of ideas. We encouraged interaction and influence of one participant's ideas with another's. Finally, we had participants rate the concepts and ideas that came up during all the activities and justify their choices.

With all these findings, we proceeded to create six different personas with characteristics such as Internet usage, level of comfort with technology, occupation, income, family and marital status, preferences regarding the consumption of news and information, usage of other media such as TV and smartphones, interests, likes, dislikes, and their environments during the contact with our products.

These personas were well accepted as guidelines and references for the planning of the subscribers' area of the website. They have been very useful for guiding many strategic decisions regarding the product, and they are often used to steer the project back to its track whenever we feel the user experience do not receive enough attention by the different stake holders.

2.2 New Research Methods

The creation of personas for the planning of products has also opened the way to the introduction of other user-research methods such as usability, qualitative and metrics tests, focus groups, and online surveys as ways to make sure the original personas could continue to be considered good guides for further product decisions.

We have had other projects after this one, in which the personas method has been used again, although some of the projects don't allow enough time for us to conduct such thorough investigations of user behaviour and environment. However, even in projects with tighter deadlines, personas are still seen as valuable assets and are almost always the starting point for the planning and innovation of products.

2.3 The Future

In my experience, very few companies in Brazil have this kind of strategic knowledge of how user experience research, and methodologies can help them reach higher levels of success. My perception is that this vision is concentrated into two or three sectors, such as banks, media companies, and e-commerce businesses. The concept of Service Design is just starting to be adopted by the avant-garde companies in these same sectors as a broader view of user experience design.

For future projects, the role of personas is expected to grow and to encourage the use of other user experience design and research methods throughout different phases of product development, so it is considered to be an essential method by the whole Service Design team.

3 Japan

By: *Taisuke Uehria, Daishinsha Inc., Tokyo, Japan*

Daishinsha Inc. is a marketing consulting and design firm founded in 1952 and based in Tokyo and Osaka, Japan. Today, it staff with 252 people. Our user-research and consulting department, m.c.t., has been known as one of a leading user-research agents especially in the field of ethnography research and personas.[1]

In 2000, we first experienced the persona method and had training sessions from both Forrester Research and Cooper. After this, we proposed to create personas for a mail order catalogue company in Japan. The goal was to develop a new marketing strategy for promotions to their loyal customers. Since then, we have done more than 100 projects.

We have created personas in various cases such as:

- Marketing strategy
- Branding
- Communication design
- Product development
- Sales training

We use the persona method most often in product development projects and communication design projects.

3.1 The Quality

Concerning the methods, from the beginning, we strongly believed that the quality of the persona heavily relied on the quality of the data inputs. We have been using qualitative research for all our personas projects, and we use many ethnography researchers. Thus, as we increase the level of input and develop our qualitative research methods to be more insightful, our clients get more satisfied.

There are many ad agencies and marketing communication agencies (even among our clients) in Japan that have been using the persona method, but as their inputs are from either conventional quantitative research or even from the past experiences of project members, it becomes already-known or not insightful information about their users. The persona they make is often not highly appreciated by their top management even though the idea of persona is very much accepted.

3.2 The Future

We have done a lot of workshops with our clients to create strategies, communication plans, and designs by using personas. Currently, we do more co-creation style workshops with the client, where we let them create prototypes or design briefs after sharing a persona with them. This method is something we will develop more in the future.

[1] http://www.daishinsha.co.jp/english/technology/mct_mct.html

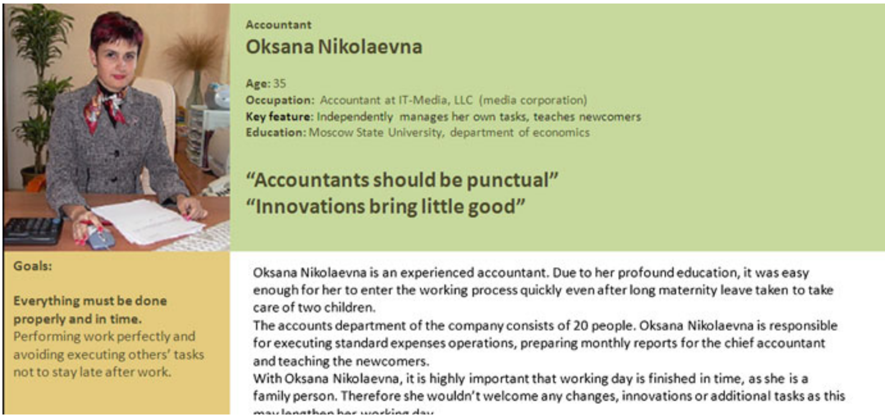

Fig. 1 Part of persona description (from UIDG archive)

4 Russia

By: *Natalia Kirillova, UIDesign Group, Moscow, Russia*

4.1 The Field of UX Design

Today, 'Personas' is one of the terms which are quite well recognised by UX and usability consultants here in Russia. However, it does not mean that many apply it to their projects and the method is unconditionally accepted in the market.

The Russian UX field is relatively young—it is about 10 years old—it was in the early 2000s that a couple of major usability firms appeared in Moscow. Also at the same time, 'personas' conception popped up here: In 2001, Alexey Kopylov, a technical director of the UIDesign Group, learned about personas from Alan Cooper's books. Two to three years later, he introduced the method to the market by applying it in projects and by translating the term into Russian as 'Персонажи' (there could be two possible versions of the word personas). It is exactly this version that is in use on the Russian market today.

At that moment, when we lacked knowledge and information (the market at the starting point, no professional education, no conferences, etc.), this method looked so powerful that it seemed to represent a perfect research method that could provide great solutions for the projects (Fig. 1).

4.2 A Method Difficult to Sell

However, we stuck with a big problem—it was very difficult to offer the method to the clients. There were at least two main reasons:

1. The method was new and unknown for the clients. Even if they had heard of it, the clients considered it to be a pointless waste of time and money, and saw the method as useless. They argued that the same results could be achieved without spending hours for this kind of research and analysis. However, there were a few clients who showed their interest for the new approach and gave us a chance to try it out.
2. The next reason is more crucial. It was always difficult to sell any usability or UX research in Russia as our usability market grew from design, but not from research. So, in the early 2000s, we had to convince the clients that we needed to conduct a research phase in order to receive valuable results. But 'novice' clients on the 'novice' market tend to think that they know their users and they do not need any additional research.

Today, we still have the same issues not in an extreme manifestation, as our market is in transition, but there are still cases with lack of understanding. Personas as well as other research methods seem to work well on mature markets but are not so popular in emerging markets.

4.3 Working with Personas

Professionals who use personas in practice are aware of the strong points of the method:

- Personas help in communication and building consensus.
- They are easy to remember.
- The method generates reusable data.
- This way of presentation (as a real person) is effective.
- It is a powerful tool for getting people to see a service or product from another point of view.
- Personas can be used in marketing and employee training, etc.

However, the method requires qualified UX consultants who have knowledge of how to do ethnographic studies and can make a good analysis. Two issues that are present on our local market is a lack of qualified specialists since we still have no specialised education here. Secondly many usability companies, especially those who are new in the market and have no extensive experience, tend to wrap up the research part based on the historical background of the field mentioned above.

Also, there is a prejudice about the method: People think it is quite time consuming. To justify the method I must say that deep analysis takes time, the critical behaviour patterns, motivations and goals, mental models, key tasks and their frequencies, etc., are the data we receive for the personas and are necessary in order to generate requirements and design decisions. Another prejudice is to depict the persona as a user profile with a picture; this is only an upper part of the iceberg. The most important part is much larger and includes more—patterns, scenarios, goals, requirements, etc.

In the UIDesign Group, we are working on formalising all steps of creating personas. The CEO of the UIDesign Group, Platon Dneprovsky, believes in a future for the method: 'Today when agile development is getting so popular, personas is one of the research tools that perfectly support an agile process: the personas method allows defining a sequence of user requirements implementation.' Platon teaches the personas method at higher education in Moscow and directs the development of the method within the UIDesign Group in creating a step-by-step instruction with patterns for each phase of the personas generation and description. One of the personas' values should be in a transition from requirements and user behaviour patterns to interface solutions. Although it is a creative process, we work out certain algorithms that help a UX consultant make the right design decisions.

4.4 Our Method

As an example of what we are working on, here are five steps to create a ranked list of user requirements:

Step 1. Create a list of important criteria for the personas (criteria could be like % of audience, influence on a system value, etc.).

Step 2. Evaluate each persona and, based on the above-mentioned criteria, assign importance ratings for each persona.

Step 3. Based on ratings within each persona, define a total rating for every persona.

Step 4. Generate a list of requirements for all personas and define an importance coefficient of every scenario for each persona.

Step 5. Based on importance coefficients and each persona's rating, define a total importance rank for each requirement (Fig. 2).

4.5 Recommendations

One of the best descriptions of the personas method as well as of the human-centred design life cycle that I have come across and will recommend for everyone is presented in the book 'Designing for the digital age' by Kim Goodwin (2009). The personas method is described step by step there, although such issues as exactly how to identify personas and how to describe them in the most usable format are missing.

The list of requirements

Requirement	Sergey Makarov	Ekaterina Komarova	Rank
To be updated about changes in documents	2	2	4
To get personal support from specialists online	2	2	4
To have guarantee of personal data security and confidentiality	2	2	4
Clear terms used	2	2	4
To have pre-filled templates for payment documents for each payment to the State	2	1	3
To have an opportunity to order the report for any time period	2	1	3
To receive all needed information of specific business operations	1	1	2
To have templates for payments via the client-bank system	2	0	2
To have number assignment for payment documents	2	0	2
To have an opportunity to work with the digital signature	2	0	2
To have an opportunity to download the data in a			

Fig. 2 List of requirements. Importance coefficients are the following: *2* persona needs this option, *1* persona welcomes this option, *0* persona does not mind this option, −*1* persona is against this option

5 Finland

By: *Janne Lohvansuu, User Intelligence*

5.1 Personas as a Part of Design

Despite all the effort you put in, the success of your product ultimately depends on user satisfaction. So yes, personas are still very useful in modern experience design. Those who ignore paying attention to the experience they provide to customers stand the risk of falling behind, once companies move to the next level of understanding user experience.

From the user experience point of view, I like to think we are formulating a certain design relationship with the end users. It’s a dedication to quality and interaction design as a craft that is played out in all that is presented—it’s not just the odd word or cool icon here and there. As a part of the design process, personas are not a very new concept and I have seen them as an integral part of many projects.

5.2 A Bit of History

It all started from a real need as I was starting my career in the early 1990s. The focus back then was on designing these new web things called ‘intranets’ and business-to-business web services for large corporations. As I did not have a background in logistics, banking, or media conglomerates, it was basically impossible for me to understand what different people filled their days with in those corporations. When designing a user interface that had to meet the needs of multiple different user groups, it was handy to have real user descriptions for each. Being truly on the end-users side led me asking the same questions about the organisations processes and tasks over and over again when projects started, thus discovering the role of personas in a very hands-on way.

During the 1990s, my interest in end users drove me to set up and lead a user-centric design team, as well as establishing various facilitation methods to create personas. I also spent a substantial chunk of time on preaching about personas and educating customers about UCD methods in general.

Things have improved vastly since then—both my understanding about what people in large corporations do (check daily lunch menu from the intranet) and how personas are used in projects. Customers don’t complain anymore of having to go through the trouble of discussing and emphasising the end users at the start of concept projects. Generally, personas are used in all sizes of companies and in multiple ways. Typically, they serve their purpose as a communication tool with various stakeholders in the project. They become especially handy in situations where you find it difficult to make design decisions, for example, about how instructive or straightforward the system should be. To put it short, personas can and are used in various situations. Sophisticated customers are also ordering personas as a separate project to suit their user experience objectives.

5.3 The Work with Personas

Typically, customers have three main questions about personas.

Most discussions I have concerning personas before actually investing time and money is whether the project really needs them or not. The need should be obvious when stakeholders and project team (who don’t match the target user profile) keep on saying ‘as a user I would want this to work like…’. Even user experience professionals have subconscious, stereotypical ideas about the users of a given service.

Making sure everybody knows and even feels empathy for users is extremely valuable and can be achieved with engaging personas. When talking about a persona with lots of people, you actually feel as if you are talking about a person who exists, a mutual friend. And if the personas are introduced in the right way to the project team, they will realise that personas are actually reducing their workload.

It is always crucially important to have profound knowledge of end users and the target group, from small website projects to complicated major web services. Simply put, personas can be just a list of people who are going to use the service or it can be a very detailed global study. It is good to remember that even if you have not made a big study of the personas, you can still remember the list of people who are going to use the service.

Second question: how exact or close do the personas reflect the actual users? Are they necessary if we already know the users really well? The exception of relying purely on personas in a design project would be the rare case where the whole design team actually has direct contact with a representative group of end users—in cases where a small project team is delivering on a short timescale and the project team members fit the target user profile, when target users are constantly available throughout the project, or you have someone matching the target user profile on the project.

These exceptions can be found in some specially targeted start-ups or mobile games created by gamers for themselves, but when designing consumer user experience, this is rarely the case. And in those cases, it is actually easier to interview end users and create personas to be able to discuss about users in third person, instead of personal opinions.

Many times, there is no definite answer if personas really represent the end users in question as the creation of personas is based on somewhat deficient and partial data. Yet, personas have proven to be quite efficient in achieving what they are intended for.

Thirdly, are the personas set for life? Or do they need recharging from user experience management every now and then? Ideally, personas should not be coupled with the service that is being designed, so that they can be reused between various projects. If personas are done properly, they should rarely require changing—unless new essential information about the users is discovered.

I would say that you should start to consider redoing the personas when you aim for a different target market than originally or when you have the feeling that the project is a getting outdated for the target market (depending on the speed of change in the project). The personas live throughout the project so they can change their mind and habits. It is especially important to acknowledge how fast habits change with mobile technologies—are apps still cooler than html-based mobile apps after 1 year?

You should also redo the personas if the user's goals are changed with new products or services, as personas should reflect the actual intended audience of the service. Whenever a previously unthought of or highly potential group of users is found, a persona or two should be added into the list with the others.

Agile project models support living with the ever-changing world of user needs, where the team is able to change the personas in the middle of the project if needed. Opposite to this, waterfall project model does not allow changes that much since the user definition of requirements have already been done and usually that means it's the only way to go.

To sum it up, I would say that good design is universal—it's in the appreciation of ingredients that goes into anything designed, not depending whether we are designing a physical space or an information space.

It involves understanding of the entire presentation, context of use, and simplicity at the same time. That's why it's hard for those who cut budgets short and leave no room for user-centred design—you just can't recreate the understanding that is needed for designing great experiences afterwards. As design wins hearts—and will do so much more in future—it's the experience that triggers emotions, not the budget.

6 India and South Korea

By: *Sameer Chavan, Interaction Designer, Researcher, Usability Analyst & Design Manager, Bangalore, India*

6.1 History

Personas are a key starting point for any product design exercise. Though this has become popular with the Software Application design process, it already existed within design of physical products (industrial design). I remember in my industrial design school days (1997), that we did User Group categorisation to help us answer questions related to product usage. One of my projects was designing a compact personal hair drier for women. The persona was defined as a working woman who grooms her curly hairs every now and then, and travel (Fig. 3).

Fig. 3 Traveller's hair drier by Sameer Chavan—1997

Fig. 4 (**a**) Car sketch by Sameer Chavan—1999. (**b**) Actual car (Autorickshaw and driver, CC: Copyright Mr Thinktank 2011)

In 1999, when I joined one of the Indian's top two-wheeler companies, Bajaj Auto, I was tasked to design concepts for an autorickshaw (three wheeler). We had two personas, the autorickshaw driver and the passenger. The marketing department would also create their target customer profiles and we would validate our personas with theirs. My goal was to redesign the driver cockpit. I would constantly refer to the driver persona to validate my industrial design (Fig. 4).

6.2 Recent Past

In early 2000 when I was working for an IT company, we first started to use personas for our UX design projects. Conveying the idea of personas to developers was a surprising experience. But since we were developing an application from scratch, having a persona to validate our features and interactions helped us a lot. The product managers liked the idea, and they started using personas to convey their product use cases. Though most of the time the personas was used to validate the product features and the user interface (UI)

In a typical IT service company, the personas would be done mostly by the UX team for their specific designs. They would validate with the business analytics, as UX teams most often do not have direct access to customers. The business analytics talks to the clients who provide the actual customer perspectives. The life of personas in an IT service company is very small. As new projects start they have to make new personas. But for an enterprise product company that I worked for in 2003, I saw that personas would be documented at company level. They would be used not only by UI designers and product managers, but also by the sales teams for their client discussions. The product companies had a wider acceptance of personas than the IT service companies.

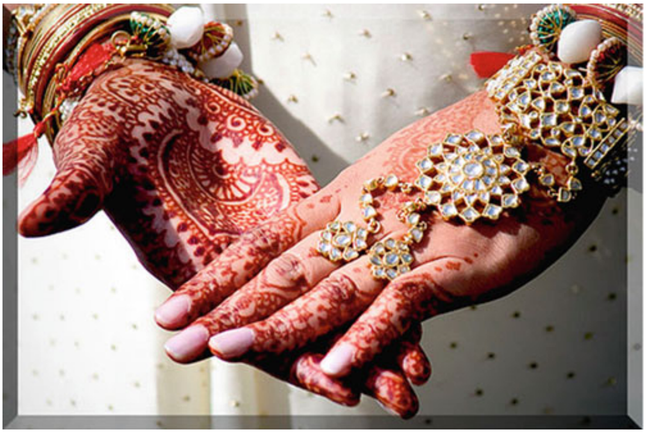

Fig. 5 Indian wedding (Mehndi, CC: Copyright chrissylong 2006)

6.3 South Korea

In one of my assignments, I worked with a consumer electronic company in South Korea. There, the concept of personas was embedded from top down. I worked on mobile UX both within software design and industrial design. Moreover, such products are marketed on TV, so these products had a very deep integration to the personas. Both the design team and the marketing had to follow that theme, and the UX team did not own the personas, but used them. In this case, the innovation team that comes with the new mobile concept for new user segments defines the personas.

6.4 Current: India

In my previous assignment, I worked as vice president of UX for one of India's top Internet companies. It was a small company with 500 employees and had portals such as jobs, matrimonial, real estate, education, etc. We often used personas to channel our debates and discussions to the right direction. Personas were used not only to define the UX direction but also for product marketing. Here, the product managers and the marketing team worked hand in hand with the UX team.

In a typical matrimonial site, there would be two personas. One is a prospective bride and the other is the groom. But in the Indian context, we have a third persona—the parents. In our research, we found that a lot of parents login to the matrimonial sites to find a match for their children. It was also found that these parents were filling in their own age and preferences rather than that of the bride or groom. This way, the UX research lead to creation of a new persona (Fig. 5).

In the case of the job site, we also noticed shifting trends of the job seeker persona division. In the beginning, we had only one persona—a general job seeker. Later,

Fig. 6 The jobseeker personas (Jobseeker, CC: Copyright Victor1558 2012)

we had to create another persona—a senior, high salaried, privacy-oriented job seeker. But we subsequently saw the demand for another persona—The college fresher. This also lead to design of a different UI section for this persona and in the end to a totally new website (Fig. 6).

6.5 Personas

Every product is associated with personas. For example, the iPhone persona is wealthier, younger, and fashionable and loves simple things. The Blackberry persona is corporate and the Android persona is tech savvy. The concept of personas has been here for a while now. It is knowingly or unknowingly used everywhere. But the use is getting refined every time. Sometimes, it is just for the user interface; other times, it is used for the whole product evaluation including TV advertisements. Personas will play a key role in designing user experience and get it in the right direction. We used to spend a lot of energy on things that users actual didn't want. To channel all design discussion from the perspective of the persona will eliminate these unnecessary design debates. As products for companies mature, we will also see more stable persona properties.

7 A Brief Overview of Personas in the UK

By: *Jonathan Browne, Forrester Research*

I'm not sure which organisation first used personas in the UK. As companies here are quite receptive to ideas from the USA, it may have been soon after Alan Cooper introduced them as design tools. Certainly, when I returned to the UK from Japan in 2009, personas were well known, but often misunderstood.

As an analyst supporting customer experience professionals, I often see personas used in interactive projects—web design, application design, mobile Internet projects, and social media initiatives. I'm also aware of personas for product design and marketing. However, when I discuss personas with clients, I want to check that we're on the same page. Some people use the word 'persona' loosely to mean a customer profile—even one that isn't based on appropriate research or one that lacks a narrative.[2] To describe personas in the context of design, Forrester uses the following definition:

> *Design personas are models of the key behaviors, attributes, motivations, and goals of a company's target customers. A persona is created from primary research with real customers and takes the form of a vivid narrative description of a single person who represents a behavioral segment. Organizations use personas to guide the design of products, channels, and messaging.*

It's essential that personas have a basis in qualitative research—observations and interviews with real customers—but it's rare for firms in the UK to have the skills to do this kind of work in house. I don't know of a British retailer or bank that has a dedicated team of ethnographers on a par with US firms like Wells Fargo and Best Buy. British companies often look to their agency partners to provide the capabilities to develop deep customer insight.

7.1 Personas Evaluated

In 2010, Forrester evaluated personas and persona usage at nine of the UK's largest interactive design agencies as part of our Wave research on agencies' web design capabilities.[3] Some agencies had best practices, as you would expect from firms that position themselves as user-centred design experts. However, the research also exposed huge disparities in the agencies' research capabilities, the quality of their personas, and the maturity of their approaches to using persons. Of the nine reference personas in the study, four achieved a passing grade, while five had multiple flaws.

What problems did we find in the flawed personas? Some were simply unrealistic, with internal inconsistencies and woolly language like 'probably working full time and time poor' that generalised about an entire customer segment rather than portraying a believable individual. Several personas lacked compelling storylines—one document just listed facts without any setting or evocative detail. In addition, some personas were poorly structured and didn't highlight the customers' important attributes, goals, and motivations. We also found basic usability flaws, like illegible text and poorly formatted graphics that made essential information hard to consume.

---

[2] In informal conversation, people use the word 'persona' to describe a variety of segmentations and customer models. However, for customer experience professionals, it's important to distinguish between personas that have a basis in interviews and observations of real customers and other customer models that don't shed light on customers' motivations and expectations as well as the context of customers' behaviour.

[3] For our evaluation of the web design capabilities of nine leading UK interactive marketing agencies, we used 19 criteria, which included user research, persona creation, and persona application. See the 'The Forrester Wave™: UK Interactive Agencies—Web Design Capabilities, Q1 2010' report [56310]

Some personas weren't focused on supporting design processes. For example, one persona specified the solution that designers should take, rather than describing customer needs and enabling the organisation to find the best solution. Finally, several personas looked quite unprofessional—irritating mistakes and sloppy layout made it clear that too little care had gone into creating them.

On the positive side, some agencies with mature persona creation practices and skilled team members showed us high-quality personas that helped organisations to focus on the needs of their customers. For example, in a persona of a first-time mortgage applicant for a financial services company, one agency drew on interviews with house buyers to compose a story about a customer saving up a deposit to purchase a property with her boyfriend, who has a daughter from a previous marriage. The rich detail incorporated into the story served to correct stereotyped visions of customers and gave the persona a three-dimensional quality. Two agencies used a first-person voice in their personas to make them engaging and memorable. Of course, the successful personas were not just realistic and engaging; they were focused on supporting design decisions. For example, in a very concise persona for a telecoms firm, every phrase and graphic—from images of the devices the customer owned, to bulleted lists of key attributes—contributed to a clear picture of the target customer's most significant attributes, needs, and frustration points. A more expansive persona for an automotive company provided great detail on the customer's changing needs, his life goals as well as his immediate aims, his approach to buying a car, his level comfort with online channels, and other aspects of his life that enabled a design team to create a multichannel experience to meet customers' rational and emotional needs.

7.2 Approaches to Personas

Looking at the evolution of personas in the UK, I currently see three main areas of improvement: First, there is increasing sophistication in persona research. Also, personas are increasingly encompassing multichannel behaviour. In addition, organisations are getting more systematic about using personas.

With regard to evolving research approaches, many firms are initially sceptical of qualitative research techniques like contextual inquiry, which seem 'exotic' and untrustworthy to teams that usually rely on quantitative data. However, I have seen firms become more ambitious as they see the value of personas. When stakeholders want to understand customers' behaviour at a deeper level, they seek new ways to gather the insights they need. For example, some firms add depth to their personas with insights gained from hosted communities of their most loyal customers and diary studies that allow them to understand the motivations and behaviours of customers over an extended period of time.

Along with improving research methods, personas are becoming more sophisticated: As customers interact with brands across a matrix of touchpoints—from physical stores and contact centres to digital channels—companies recognise that they need tools to make sense of the complexity. Increasingly, personas incorporate rich detail about the offline and online behaviours of customers, including customers' use of emerging channels such as social networks and mobile devices. To fully grasp how customers move through the process of learning about products, making purchase decisions and subsequently getting service, firms like Aviva, use personas as a starting point for customer journey mapping. For companies that use personas, journey mapping is a logical, complementary approach to document customers' perceptions of their interactions with the firm and identify ways to improve the customer experience across the entire journey and in specific episodes.

Finally, companies are taking steps to overcome the tendency for personas to have a short-lived impact: To avoid introducing personas that are soon forgotten, some companies take steps to ensure systematic and effective use of personas. For example, some firms initiate their persona projects with 'assumption persona workshops'. These bring together key stakeholders in an organisation to document existing assumptions about customers in the organisation and to create a set of hypotheses, which will be tested through research. This exercise does not only help researchers to know what to look for, it also helps to win the buy-in of stakeholders throughout the company. Later in the design process, rather than just printing persona posters and hoping people will refer to them, firms can make sure that personas are written into key processes where they have an impact. For example, meeting agendas can specify the personas that are the focus for a particular discussion. Some firms also specify that the customers who are recruited to test websites should closely match the personas for which the websites were built. In addition, firms are increasingly conscious that research and insights for one persona initiative can be put to good use in other qualitative research—provided the information is well managed in a suitable repository.

Despite these encouraging signs that personas are used effectively in some firms, significant barriers still remain to their widespread adoption. Organisations often face inadequate funding for research and an uphill struggle to win stakeholder buy-in for personas. Also, faced with a tough competitive market, some executives view personas as frivolous toys rather than valuable tools to help the firm to build a differentiated brand. One CEO went so far as to tell his customer insight team that he absolutely rejected the idea of putting 'silly' posters on the walls. For this reason, people introducing personas to sceptical audiences must remember that they need to achieve some quick wins in the early phases of persona initiatives to demonstrate the value of personas and ensure ongoing support from stakeholders in the organisation.

8 Denmark

It is quite easy to point to the first wider use of personas in Denmark. In 2006, the web portal for information and contact between citizens and the public sector—borger.dk—was launched using personas. While this is being written, a process of redefining the personas is undergone.

After this initiative, the use of personas spread especially within the public sector, and today, a lot of companies use the method. What they use them for is quite broad (Vorre Hansen 2009):

- In concept and product development, the companies use the persona method to maintain focus on the users in the entire development process.
- They are used for company strategies in order to target future user groups.
- Personas are used for recruitment of users for usability tests, interviews, and focus groups.
- Others report that they use them in the actual development process, when preparing test scenarios and questionnaires.

Often, the decision process regarding using the method stems from individual employees that drives the process as they have a need to get more knowledge about the users. These needs typically occur in product development, strategy, communication, and recruitment. Thus, the use does not link to company strategies.

8.1 A Tool

Most companies use a variety of qualitative methods, such as usability tests and focus groups, and the persona method supplements these. Whether it is personas that are used as the primary method depends both on what methods are in play in a given project and what methods the project manager wants to work with.

In connection with tests and focus groups, the perception is that meeting the users often engenders recognition in relation to the existing personas and it is considered beneficial to be face to face with people who represent a persona. This provides a confirmation that the descriptions are adequate and an opportunity to adjust the persona descriptions.

The attitude is that personas should be checked regularly and updated if necessary every 1–2 years.

In recent interviews (2011) with consultant agencies that develop personas, I experienced that some of them have a world view or a lens with which they collect and analyse the data. A lens can be motives and barriers for use or the values shared by sender and recipient.

8.2 The Value

The value that personas create is diverse:

As a strategic tool. The method makes it possible to make strategic decisions regarding target groups. The companies are able to clarify who their primary target group is, which users are secondary, and which users the company chooses *not* to address.

As a specific tool. The method can be integrated directly in development processes, in preparing test scenarios, in concept testing, as well as for recruitment. Some companies use them within the requirement specification.

The method *creates a common communication platform* for the company or internally in the project group. It ensures that you discuss based on a common understanding of the user and not based on pre-existing understanding and personal experiences with the users.

It *provides a qualified understanding* of the users. The method communicates data and thus increases the internal knowledge about the target groups of the company.

The method *shifts focus* from the well-known users to the lesser known, thus ensuring that the target groups that the company knows less about is also included in the deliberations about the projects.

It can *focus and validate* the final product. By including the users early on in a development process, there is a greater likelihood that there will also be recipients for the product. The method creates documentation and argumentation for specific solutions. To be able to refer to a specific persona and the underlying data is part of supporting the choice of one solution over another.

It *supports working across* departments. Especially in larger organisations, the method can contribute to abolishing silo thinking. When focus is shifted from the organisational structure to the users, the method makes different departments collaborate.

It also has a *long shelf life*. Personas can be included in more and in new projects long after their development.

Surprising areas of application. The persona descriptions can be used in areas that are unexpected.

8.3 The Challenges

In Denmark, a number of challenges are reported especially in the following areas:

- Making the method visible in the organisation. It can be difficult to disseminate knowledge about and ownership of the method to other departments in the company.
- It is challenging to get knowledge about the persona method as there is no exchange of experiences across companies and there is no platform for knowledge sharing about the method.
- It is difficult to differentiate the communication and to operationalise the personas to various work groups, for example, some groups might emphasise that they have insight into the data behind the personas, while other groups dislikes the fictional elements. There is a lack of tools to create differentiated forms of communication.

- Often, the method is dependent on individuals, and it is a challenge to anchor the method in management. This creates a feeling that the method depends on individual members of staff, and if they disappear from the department, the method will not survive.
- It may also be difficult to get external suppliers to use the method and to communicate personas to these. It is important to get the suppliers to use or at least know the method as in certain contexts it is the subcontractors that develop the final product.
- Maintaining the persona descriptions is also a challenge. Often, there is no one responsible for updating, so the descriptions are updated at random. Funding for this might also be difficult as there is no budget for updating, but a budget only for the actual persona development project.

9 Cross-Cultural Perspectives

This is how the application of the persona method looks like in different countries, especially in companies where most of them operate nationally. But what happens when we are dealing with cross-cultural projects where both project participants and users are from different countries and different cultures? In the following, I will sum up some thoughts about cross-cultural projects.

In recent years, discussions about interface design and evaluation methods have brought cultural aspects in play.[4] One of the theorists who has something relevant to say about cultural differences in terms of design is the cognitive psychologist Richard E. Nisbett (2000) who has conducted a number of experiments with what he terms as Easterners (Chinese, Koreans, Japanese) and Westerners (Europeans, North Americans). In his experiments, Nisbett shows that Easterners tend to think holistically; when they see images, they tend to be more attentive to the background and they have a greater expectation of change than Westerners. Easterners are also more prone to group objects in thematical relationships. When dealing with opposites, they tend to find truth on both sides. Westerners think analytically, are attentive to objects, group according to taxonomies, and tend to reject one side when dealing with opposites. When these differences are included in a persona perspective, cross-cultural projects become more difficult to handle, both for the one writing the personas and the one who is going to use them.

If you describe a person, you need to understand data, and, as previously described, the personal experiences of the writer become part of interpretational and descriptive efforts, which in cross-cultural projects can lead to misunderstandings and misconceptions (Schumacher 2009). The reader is left with the same problem when the description is read and meaning is created.

[4] You can read more about intercultural design and the challenges at www.culturalusability.com

9.1 Different Markets, Different People

In cross-cultural projects, the big question is what differences exist internally in the local markets and what differences exist between the countries involved. This becomes significant for where to collect data and the quantity of data. An example, an international bank wants to target the communication to their different e-banking customers. There are different ways of answering how many different countries to collect data from and what users to interview in each country. Log file analyses might show differences and similarities in the use of online banking between the various countries. Scientific reports may of course also be the starting point of decisions. Interviews with researchers working with the focus area can provide new knowledge. The marketing department may have developed segmentation tools. Or the starting point could be the theory about differences in power distance, individualism vs. collectivism, uncertainty avoidance, masculine values vs. feminine, long-term orientation, and indulgence vs. restraints that Geert Hofstede (1980) sees as the most significant differences between cultures.

When data is to be analysed, it is important to reject internal and undocumented preconceptions about what makes people different in different markets. Studies may very well show some completely new patterns about the different attitudes towards banks. For example, you may very well find the same attitude towards the credibility of banks in Denmark and China but something different in Iceland.

When patterns are to be verified, it may be a good idea to send the analyses to local partners to have them verify the result. If they can't be accepted, you have to conduct further data collection or a new analysis.

9.2 Subcontractors

Scenarios may be the most difficult in cross-cultural projects as it can be difficult to get subcontractors to use personas. Scenarios are a method where you both work with creating situations and where you imagine an unknown future. If an Indian subcontractor is to prepare a scenario for a Danish context, it may be difficult to imagine the daily tasks. I discovered this when a young Indian programmer who worked with outsourced programming for the American defence industry asked me how he could design defence systems for American soldiers when he knew nothing about their level of proficiency in technology.

To imagine how a product is to fit into a daily use situation may be difficult regardless of how many videos, reports, and images you see presented. Here, it is important to invite the local partners or people who have observed the daily use to participate in the scenario process.

9.3 Participants from Different Markets

In cross-cultural projects, it is key that the different interested parties can get access to and have an overview of the data when they are to understand the background of the persona descriptions and the persona differences.

An efficient way to gain acceptance of the method is to involve central project participants from the various markets in the development of personas. This ensures knowledge dissemination and understanding of the method.

The best approach to cross-cultural persona projects is to pay attention to that the participants draw from their own cultural resources both in preparing and reading the persona descriptions. Thus, confirmation from local interested parties is unavoidable.

10 Goal Achieved

The persona method is not definitive; there is room for both more and fewer steps than the ten I have introduced here. The method is constantly evaluated, and there are still many who do not understand its advantages. An overwhelming argument for using the method stems from a study of its *return of investment*: ‘a redesign with personas can provide a return of up to four times more’ (Drego et al. 2010).

Telling a story has been my focus point for developing the method; whether it is about being inspired by the manuscript to *Thelma & Louise* or telling the product developers around the world about the users. Behind the urge to tell stories, there is also a wish to introduce more usable products, so that even the population not using IT is included in the development.

References

Browne, J., Dorsey, M., & Peterson, J. (2011, March 3). *Customer experience professionals: Break through persona obstacles now*. Forrester Report for Customer Experience Professionals, pp. 1–6.

Browne, J., Manning, H., Beckers, A., Gans, R., Chu, W., & Catino, S. (2010, April 1). *The Forrester Wave™: UK interactive agencies – Web design capabilities.* Forrester reports.

Drego, V. L., Dorsey, M., Burns, M., & Catino, S. (2010, August 3). *The ROI of personas*. Forrester Report for Customer Experience Professionals.

Goodwin, K. (2009). *Designing for the digital age*. Chichester: Wiley.

Hofstede, G. (1980). *Culture's consequence: Comparing values, behaviors, institutions and organizations across nations*. Thousand Oaks: Sage Publications.

Nisbett, R. E. (2000). *The geography of thought*. London: Nicholas Brealey Publishing.

Schumacher, R. M. (2009). *The handbook of global user research*. Oakbrook Terrace, IL: Morgan Kaufmann.

Vorre Hansen, A. (2009). *Personas nu og fremover*. Retrieved April 7, 2011, from http://personas.dk/?p=155

Index

L. Nielsen, *Personas - User Focused Design*, Human–Computer Interaction Series,
DOI 10.1007/978-1-4471-4084-9, © Springer-Verlag London 2013