

Personas is Applicable – A Study On the Use of Personas In Denmark

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ABSTRACT

The persona method is gaining widespread use and support. Many researchers have reported from single cases and novel domains how they have used the method. Few have conducted literature studies in order to identify and discuss the different understandings of the method. Fewer still have reported on ethnographic studies of practice. This paper falls within the last category, reporting on a study on how practitioners in Denmark use the method, and their perceptions of benefits and challenges when using the method. Finally, different casts of personas obtained from the involved companies are analysed. The findings are compared to reported studies of practice. Contrary to the existing findings the study reports that the method is well integrated into existing practices.

Author Keywords

Personas; scenarios; application; practice-study

ACM Classification Keywords

H.5.m.

INTRODUCTION

The persona method has developed from being a method for IT system development to being applied in many other contexts, including development of products, marketing, communication strategy, and service design [29]. So far most research focus either on single cases of application or on the introduction of the method in novel domains. Only a few include experienced designers in their studies and fewer still have studied more than one organization. There is therefore a need to understand how designers apply the method, how it is used in organisations, when in the design process it is used, and for what. Furthermore, there is a need for a deeper understanding of the pros and cons of the method.

To bridge the gap of understanding of how personas are used in practice we conducted 28 interviews in 13 Danish

companies, within both the private and the public sector. We furthermore got access to 47 confidential persona descriptions. The study examines the practitioners' perceived benefits, experienced challenges when using the method, and at how they have improved and adapted the method. Finally, different casts of personas are analysed. This provides insight not only in regard to how and for what the method is used, but also in how the companies develop the method adopting it to new areas and creating novel ways of using the method.

In this paper we compare the findings from the study to existing literature on personas use in practice. Contrary to the findings in the literature we found that personas are perceived as a success and used for design decisions throughout the design process. The method co-exists with other User Experience (UX) methods and is most often not used for all projects, but only when it is deemed as the best method for the project. There are a number of challenges most notably that the method does not provide instructions of use and that it becomes difficult to create personas when the audience is international.

This study contributes with a much-needed generalizability to current understandings of personas, and it provides valuable insights across different lines of businesses into how a large group of practitioners use and perceive the method. This enables both a deeper understanding of the method and provides practitioners with applied experiences to learn from.

PERSONAS

In the literature there is a common understanding that personas should be based on field data such as surveys, user interviews, observations, and a combination hereof, that they are created in the beginning of the design process, and should be used for different design activities [7, 28, 32].

Furthermore a set layout for the persona descriptions can be observed in the literature. The persona has a name, the description is most often 1-2 pages long, and has several subsections that describe the persona's characteristics, life,

behaviours, goals, and preferences. Often a photo accompanies the description [19].

These are theoretical understandings and recommendations, but studies of the method in use paint a somewhat different picture.

Studies of personas use

Most research on personas in use is based on single case studies that report and/or evaluate the method, how it was used, and the benefits and pitfalls of the method, [e.g. 9, 21, 34]. Based on the case, the method is criticized, and/or refinements to the method are suggested [e.g. 15], or the inclusion of new user groups is suggested e.g. system attackers [2]. This line of research is similar to multi-case studies that evaluate use across cases [e.g. 4].

Others have reported on use in novel domains such as creating child-personas [1], using personas within e-health [e.g. 20, 36], for service design [14], or using dramaturgical methods together with personas [e.g. 16, 31].

Some have developed the method using quantitative data for personas elicitation [e.g. 24], the design of a conceptual model for automatically creating and validating personas [26], also reports on creating personas based on assumptions have been made [10]. Furthermore, some have developed and evaluated the method by looking at single aspects of it e.g. segmentation [18], attributes [6], or the effect of using photos versus drawings or action figures [19, 27]. The last mentioned are classical comparison studies where groups of designers or students try out different versions of the same material. The results are then compared.

Literature studies are rare in the field of personas. The authors have been able to find two studies that look at the literature on personas: a discursive study on texts that describe the persona technique [22], and an overview of persona kinds, attributes and characteristics based on literature studies that divides personas into three categories: 1) personas founded on data 2) personas founded on data with fictitious elements and 3) fictitious personas. Each category holds a unique level of detail for the persona description [11].

Studies of practice

This paper reports on a study that falls within a rare group, as there exist very few larger studies of the personas method in practice. The small number is insufficient in order to make meaningful conclusions on the pros and cons of, and usage practices for personas. Moreover, it makes results difficult to compare, as the prerequisites are different. Furthermore, only 3 prior studies have included experienced designers and of these, only 2 have studied more than one organization.

The role of the researcher in the literature on personas in practice can be divided into three different categories: 1)

researchers have been part of the design process either as facilitators or researchers. This category of studies, report from both single and multi-case studies. 2) Researchers were not part of the studied cases, but initiated the research and observed the use of the method in practice. 3) Researchers captured and analysed practitioners' perceived understandings of the method and reported use.

The first category holds numerous studies while observations and studies of perceived understandings are few. This current study falls into the third category and we will in the following treat literature from both category 2 and 3 as they can be compared to our study.

In the following we introduce six studies that fall within the second and third category: A discourse analysis of decision-making in a design company [12], an ethnographic study on a project where the material and data covers several sites [13], an ethnographic study of personas in use in an interaction design team [3], a study of experts' view on the benefits of personas in the design process, the experts were asked to prioritize and create consensus on the benefits [25], a study of 14 experienced UCD practitioners' perception and use of personas, all from the same company [23], and finally [5] the results from an online survey among IXDA members on how personas are created.

An overview of the findings in the literature reveals that:

Personas are not used for design: Two studies on application of personas report that personas are used not for design, but solely for communication purposes [13, 23]. The reasons stated for not using them in design are: lacks of relevance [13], designers prefer scenarios to personas [3], misleading descriptions [5], and finally poor introduction and incorporation of the method into the design process [3].

Moreover, designers find that personas are not relevant for fundamental technical solutions only for interface decisions [13]. Scenarios written out of scope can make programmers reject all scenarios [13], and a study revealed that scenarios play a greater role than personas [3]. Finally, poor introduction of the method and unclear separation between the process of creating personas and the use of personas in the design process are potential reasons for personas not being used in design [3].

Designers do not refer to personas in their discussion, but to their own opinions and impressions: A discourse analysis revealed that designers did not use personas in their discussions; instead they used their own opinions and impressions in appeals. The designers who had developed the personas, referred to them slightly more. These designers were perceived as persona custodians and used the personas in critical instances [12].

The persona descriptions can be problematic: The content of the persona descriptions might also create resistance to the method. Designers found that personas are abstract and impersonal, and that personifying information

misleads and distracts [23] and programmers became critical because of certain details in the descriptions [13].

Personas are not created entirely from data: Designers use input from different users to create the description, the content comes from user studies, but also from the designers' own assumptions [5].

Personas are not created at the beginning of a design process: Contrary to the recommendations personas are created throughout the design process and not only at the beginning [5].

Benefits of the method: Other research points to the benefits described and advocates for the use of personas and describes the method in detail, such as [7, 8, 32, 33]. The reported benefits include: Personas help prioritize audiences and bring about a focus on the most important audience(s) [25]. In line with this personas bring assumptions to the surface and challenge long-standing (and often incorrect) organizational assumptions about the customers [25]. Personas focus product development on users/customers and their goals [25] including that the method support advocating for user needs with the development team [23]. Personas also help individuals realize how the users/customers are different from themselves [25]. Furthermore, personas help prioritize product requirements and help determine if the right problems are being solved [25] enabling practitioners to advocate their designs and prevent stakeholders from making design decisions for themselves [23].

A STUDY OF THE USE OF PERSONAS IN DENMARK

This paper reports on a qualitative study among Danish companies who has experience in creating and using personas. All participants have been involved in creating and, in most cases, using personas within their current employment. The study took place from October 2012 to January 2013.

To find and recruit companies that have experience in using personas online channels, such as LinkedIn groups, were used. Additionally advertisements in two expert fora newsletters and word of mouth were used. Finally, to broaden the perspective and get companies outside our existing network, Google searches were performed using keywords such as: personas and usability, and the companies found were contacted. We succeeded in approaching 13 large, medium-sized and small companies from both the public and private sector, of these 6 have worked with international personas [30]. We are aware of that the self-selected recruiting method creates a bias as it makes it more likely that participants with a positive experience with personas will participate. Despite this we managed to find one company and do interviews with two participants with a negative experience.

Interviews

We set up interviews with 28 participants. The interviews were performed as single interviews, interviews with 2-3 participants present from the same company, and several interview sessions within the same company. The decision on how to conduct the interviews depended on company size as small companies often have only one employee working with personas while large corporations have many working in different positions, departments, and contexts.

All participants had experience with personas and most of them had been working within project development and management. Most were domain experts with no formal design education.

The interviews were conducted as qualitative, semi-structured research interviews. In the interviews participants were asked to describe: their process of working with personas, who initiated the use of personas, how they collect and use data, the design process, how personas are communicated and shared, and how they use the personas. Furthermore, they were asked to reflect upon benefits and challenges inherent to the method. During the process of interviewing two subjects occurred that we followed up on in later interviews: new approaches to the method where role-play is applied and the extended benefits and challenges of the method when companies have an international perspective on personas.

METHOD OF ANALYSIS

The goal of the study has been to gain knowledge about how personas are created and used in Danish companies. The interviews were analysed for statements on creation and use. Furthermore, the aim of the analysis has been to provide insights into the general tendencies for persona use generated from statements shared by many participants and insights into novel initiatives generated from statements shared by few participants. Moreover, to find the causal relations that can describe why companies act as they do in regard to persona creation and use.

In line with Kvale's [17] advice to start the analysis already when interviewing, we began identifying the recurring issues of working with personas already in the interview situations. Furthermore, while listening to the recorded interviews, different sound bites were identified through the method of condensation [17]. The condensed transcripts were analysed for statements on use and use situations.

In order to identify which general benefits, challenges, and problems the companies face when using personas and which strategies they use to overcome the challenges the statements were mapped into categories.

Moreover, the companies gave access to 47 persona descriptions. These were analysed for coherence, methods of communication, visual expression, and content.

FINDINGS FROM THE INTERVIEWS

As it can be seen in Table 1 most companies started using personas around 2008-9 and have by now approximately four years of experience with the method. Two companies are “novices” and started introducing the method as late as a year ago (2012) while four companies have more than 8 years of experience.

Most describe their work with personas as satisfactory or very satisfactory. Only one of the companies interviewed had an altogether failed attempt to use personas and had, as a consequence of the failure, abandoned the method. In the interviews it is a recurring theme that the current successful use is based on several failed attempts. Reasons for former failures vary and among the reasons mentioned are material created by foreign departments, lack of management support, lack of organizational maturity, and lack of considerations on how personas can be useful. An example of failed attempt is expressed in the following quote:

C5: “The people who were part of the project were critical

towards the method. It was not the best choice to say: “we have these results” and then get somebody who opposes the method to implement it. That was a wrong decision. [...] At least one person should have been passionate about it [the method].”

The current successes are based upon support from management and employees, understanding of the usefulness of the method and, not least, integration of the method into the design process.

Persona development

We identified three different approaches to personas development; either entirely in-house, or development is outsourced to consultants, or a mix hereof where the project team cooperates with a consultancy to create the personas (see Table 2).

From the analysis we found a connection between company size, experience, and resources spent on personas. Companies tend to spend more resources on personas the

| Company size and type | Type of product | Years of personas use | Interviewee role | Personas examples provided |
|-----------------------|-----------------|-----------------------|--|--|
| Large, Private | Product | 1-4 | 1: Innovation specialist. 2: Business Excellence Developer. 3: International Product Manager | 8 personas |
| Large, Private | Software | 8+ | 1+2: UX designers. 3: PM lead. 4: UX research lead | An overview of the persona cast, but not the actual descriptions |
| Large, Private | Software | -1 | 1: Project Manager. 2: Online training specialist. 3: Technical Writer | 3 persona examples + additional material (postcard sent from the personas) |
| Large, Private | Service | -1 | 1+2: IT developers. 3: Project manager. | None |
| Large, Public | Services | 1-4 | 1: Chief consultant. 2: Principal | 6 personas |
| Large, Public | Service | 1-4 | 1: Area manager. 2: Librarian Researcher | 4 personas |
| Medium, Private | Consultancy | 8+ | 1: Senior UX Manager. 2: UX consultant | None |
| Medium, Private | Consultancy | 8+ | 1: Chief Advisor. 2: UX developer | None |
| Medium, Public | Service | 1-4 | 1: Consultant in digital communication | 7 personas |
| Medium, Public | Service | 4-8 | 1: IT Consultant | 6 personas |
| Small, Private | Consultancy | 1-4 | 1: Project manager. 2: Head of secretariat. 3: Student assistant | 10 personas + 34 persona sketches |
| Small, Private | Consultancy | 1-4 | 1: Project manager | An overview of a persona cast, but no actual descriptions |
| Small, Private | Service | 8+ | 1: Trainee | 2 personas |

Table 1: Overview of companies and interviewees

larger they are and the more experienced they are.

Persona creation

There is great variety in the amount of data that is the foundation of the persona descriptions. Most participants refer to projects with extensive ethnographic studies others to small-scale research, and a few projects have no data but have built the personas entirely on own existing assumptions.

There is a correlation between large amounts of data and high satisfaction with the persona method. Surprisingly, there is also a correlation between no data and high satisfaction. The participants who expressed less satisfaction with the method were found in the companies that had some data, but where the data sample was not experienced as being rich. An explanation of this apparent paradox could be that those with no data do not know that they lack data, but experience the positive effects of the method such as alignment of communication and having a steering tool for development. While those that lack rich data, understand that the data sample could be better.

Personas in use

All interviewed from companies with successful or very successful persona experience - all companies except two - perceive the method as well embedded in their organisation. This was observed in the interviews when the respondents from the companies, where the method was described as thoroughly embedded in the organization, referred to the personas by name as if they are persons they know and described the personas as something that resides in the back of their minds constantly.

However, there is a great difference in how the method is in fact used within the companies and we can distinguish between two approaches to the use of personas: personas as an integrated part of the development process or an ad hoc approach where the method is used less systematically. Most of the companies have an ad hoc approach, where use of personas varies from project to project both in relation to where in the process they are used and how they are described. The rationale behind the different approaches to the persona method seems to lie in the communication

challenges that correspond to company size. In small companies there is no need for a formalized approach to gather and communicate user knowledge. For large companies it is a challenge to disseminate knowledge. The strategies are either to have a formalized development process that includes personas (reported from one company) or to tie user knowledge together with the specific project (reported in most companies). This latter approach makes it more random for participants in other projects to encounter the persona descriptions. This is not a problem in small companies where the information typically is tied to the individual and stays with the one who works on the project.

Most companies have a specific group that develops the personas - in rare occasions together with external partners or consultants. Other project teams have inherited persona descriptions from previous internal projects and the descriptions have been redesigned to fit the present projects. Finally, some companies have a cast of personas that is in constant development, and it is an on-going process to keep them updated and suitable for current projects.

The lifespan for a cast of personas depends on the project horizon. Some projects run for several years, while others lasts only a couple of months. Within a company there might exist both short and long project horizons. More than half of the companies have the same cast of personas that is used for more projects. In four companies the project team developed new casts of personas for each projects, whereof three are forced to do so as they have different clients.

What are personas used for?

As can be seen in Table 2 personas are used in all phases of project development. The companies use personas in multiple design situations: they are used for website-, app-, and product development, for planning of physical environments, and for service design. The method is used for alignment of communication, definition of target groups, and for design of interaction. Most projects involve some sort of interaction with a screen, but many report that they have used personas for product development of physical objects and for communication purposes. Around

| Development | Creation | UX methods | Use | Purpose | Satisfaction |
|---|--|---|---|---|---|
| <ul style="list-style-type: none"> Developed in-house. Developed by consultants. Developed both by consultants and in-house. | <ul style="list-style-type: none"> Large amount of data (7 companies) Medium amount of data (2 companies) No data (4 companies) | <ul style="list-style-type: none"> Always use of UX methods these include personas. Always use of UX methods sometimes personas. Sometimes use of UX methods sometimes personas. | <ul style="list-style-type: none"> Integrated in the development process. Ad hoc use. | <ul style="list-style-type: none"> Ideation and design (10 companies). Cooperation and communication (10 companies). Management (7 companies). Sales and marketing (7 companies). | <ul style="list-style-type: none"> Very Satisfied with personas (5 companies). Satisfied with personas (7 companies). Not satisfied with personas (1 company). |

Table 2: Overview of categories identified in the interviews

half of the participants report that they use personas to solve specific design tasks such as web design, IT development, interior design, sales strategies, and marketing material. The method is also used for development of strategies.

There is a common tendency that personas are used more in the initial than in the later phases of a project. In the initial stages personas are mainly used for ideation and tests of prototypes. As expressed by this participant it makes the designer think of the users right from the start:

"C4: We use them for example when we write use cases, when we design user interfaces, and the navigation, [...]. I use a lot of other methods besides personas when I develop, but I find personas a useful tool as foundation - and it gets the human into the early, more technical, phases."

In the later stages they are used for recruiting users to usability tests.

It is noteworthy that the company that discarded the persona method reported that they had no understanding of when in the process personas should be applied and how it could provide value.

In the analysis of the interviews we found that for personas to be successful, the method needs to provide for more than an understanding of who the users are. Additionally, the tasks that can be solved by using personas need to be considered from the beginning of the project. Finally, the method is a success when: it is used to develop scenarios of use, personas are directly involved in the development process, whether it is design or sales, and when it is a design tool.

Role-play as a new approach

In parallel with the more traditional representation of personas as posters and hand-outs interviewees from five companies reported that the project participants have created different forms of persona performance. Additionally, interviewees from three companies report that they have cooperated with companies that have used role-play, but that they did not actively participate in the performances [31].

The role-play is mainly used to act out scenarios for user journeys and to explore the information flow and characteristics of the persona's search behaviour. It is performed both with hired actors and with internal personnel that act as the personas, and both with and without props such as; masks, figures, and dollhouses. Most describe that the acting occurs as a spontaneous design activity. By acting out the personas the designers get an understanding of the persona as a character and of the flow of use. The performance occurs as a natural extension of the persona method, but not as something explicitly inherent in the method. Even though role-playing is mentioned in several interviews, the interviewees perceive themselves as the first to try out the different ways of role-play.

The value of persona in an international perspective

In the companies with a global audience and globally distributed project teams the benefits and challenges of using personas are perceived as even bigger than within a national setting. The benefits are twofold: a shared language to discuss and talk about users that are nationally and culturally diverse, and a shared understanding across departments and national borders [30]. The challenges are mostly connected to data collection, as it is described as especially challenging to get enough data and to know when there is enough data. The project participants try to solve this by collecting data from different parts of the world, but none of the participants have data from all the markets they address.

The companies either develop persona descriptions that represent users from different countries (e.g. one Finnish, one Polish, etc.), or descriptions that are so general that they can fit a wide variety of countries. Some companies combine the two strategies, by dividing the persona descriptions into an overall part and a part that singles out national differences. The global perspective can be observed in both naming and the connected images.

C8: "One is from Frankfurt, one from Poland, and one from Norway. [...] In order to create a broad representation of users and contacts we must have some personas from around the world. We asked our reference group: "Do we need personas from around the world?" [...] They said it makes good sense as we sell worldwide. [...] It is not randomly selected countries, each are chosen to represent several countries."

Opposition to the persona method

Even though the method is perceived as successful several incidents of opposition are mentioned in the interviews. Opposition against the method comes both from clients, in-house project participants, and management. Clients, project participants, and management question whether you can earn money on using the method. Management expresses opposition due to lack of strategy for what the method is to be used for and how it can provide value. Additionally, as the personas method is perceived as a fun, its' ability to add value is questioned. Furthermore, if personas are entirely based on qualitative data, there is opposition against the research approach, as quantitative data is perceived as more credible than qualitative data. Finally, it can be difficult to identify with a user who is far away from, especially, the developers' world and skills.

Benefits

The successful implementation rests on a row of benefits. Shared by all is that personas provide a common language, this covers both the method's ability to provide internal and external project participants with a common language and a common understanding of the users. For the large companies it is a common language between departments

and across national borders. The following quote is from a participant that works in a large international company:

C12: "One thing is for sure it has provided a common language [...] I become quite warm [at heart] when at meetings where you hardly know anyone and then somebody says: "then Alex would think like this". Then we all know whom we are talking about. [...] – And this is internally in our department and right out to our subsidiary companies."

In line with this, personas give deeper insights into the users including insight into what value the product will create for the users. Personas provide insights into user needs and focuses the decision processes on both user needs and company goals. Including that the process of developing personas has in itself the benefit of gaining deeper insight into the users and to maintaining focus on the users. In line with this the process enables discussions of the project participants' implicit assumptions, thus making them explicit. In the following quote a participant expresses how personas have changed the company's design process:

C11: "We are still quite technically oriented and nerdy when we develop. Now we describe the customers' needs first [...]. This is completely different from what we did before. And personas have helped us understand what needs you are to cover."

Another benefit is that personas becomes a management tool in the development process that guides development towards what the users want instead of what is novel. In line with this personas reduce time and money spent as the right products and solutions are developed. For the tasks personas help define their nature including creation of use cases and scenarios. Furthermore, personas used in present day scenarios create clarity in the decision processes as it provides precision in users needs and company goals.

Challenges

Personas include a row of challenges that can be hard to overcome. One such is that it takes time and money to create personas, this is perceived as the only actual downside of the method.

C12: If you want to have valid [personas] then it easily costs between 250.000 and 500.000 Danish Kroner. That is quite a lot to put into a method. For a large organization and to be done well it also demands a proper validation and large sets of data. I find it an expensive tool.

Some mention that it is challenging to keep the descriptions updated so they reflect reality. And it can be hard to keep in mind that the personas are not real users and cannot replace meetings with real users. If you have a large cast of personas – more than 10 - it becomes difficult to encompass all in the design process.

A challenge that regards the use of personas is that the method in itself does not provide instructions on how to use

the personas, as the focus is on descriptions of people. In line with this it can be a challenge to create useful descriptions with enough or proper information for design decisions. This is expressed in the following quote:

C2: "These persons they can't feel because they are fictitious. That I find is the biggest downside. And you can't ask them."

In an organisational perspective it can be difficult to get the personas anchored in and communicated to both the organization and clients. Furthermore, it can be difficult to get management support. This includes that some organizations/project participants do not understand the qualitative nature of the method and questions the validity of a small number of interviewed and thus finds that the method cannot cover all users.

FINDINGS FROM THE PERSONA DESCRIPTIONS

In most literature the persona descriptions relate to Cooper's method where goals are a central part of the persona description [7, 8]. This seems not to be the case in Denmark, but there is a common understanding of what a persona description should contain and a standard for length, visual, and textual layout has been developed.

All descriptions have a length of approximately one page, there is a photo depicting the persona, and the text is divided into small sections with headings. The format makes it easy to get an overview of how many personas there is in a cast and how they differ. The differences are further supported by color-coding and for some descriptions by different tag lines or sentences.

Persona naming

All persona descriptions have a name, but some have in addition a tagline that characterizes the persona, it can be a role, quote, motto, demographics or marketing characteristics e.g. 'Baby-boomer'. Some have personality types added to the name e.g. 'optimistic'. A few persona casts had several taglines. Both name and taglines enables the reader to identify differences between the personas.

Consistency

There is a relation between how long the personas exist and how thorough the descriptions are. In the companies that create new personas for each project the descriptions are less thorough and have less consistency between the different personas in a cast.

There is furthermore a tendency towards that the persona casts from companies that are new to the method are less coherent. This is especially observed in the companies where the persona method is not a core method, but a minor and more ad hoc practice. Furthermore, companies that have not had external consultants to help them with the persona descriptions have less coherence in their persona cast, with incoherence in wording and layout.

The photo

All the persona descriptions we have had access to, have worked with visual strategies to get the descriptions to foster empathy. However, the visual strategies differ in connection to how the company/project group perceives the concept of personas. Is the persona a representation of an average user based on quantitative and/or qualitative data? Is it rather a management tool aimed at embracing variety of user behaviour? Or is it an extreme user created for design purposes? The differences in perception of the persona concept is expressed in the following two quotes from different companies

C1: "What it [personas] really is, are patterns in data."

C12: "To us the advantage of a persona is that it is an extreme user. If you for example design an elevator, then there is a need that a wheel chair can enter – that is an extreme user. [...] And this is important to explain; a persona is a representative for a user group, it is not the average of a user group."

The strategies differ in the following ways: some create mood-boards that show pictures from the personas everyday life, in line with this the illustrations can be true to real life situations and leave an impression of the persona being an actual person. Other descriptions are created to look artificial e.g. one description is illustrated by the same persona at different ages and different representations wearing clothes in the same shades of colour, which points to the persona not being a real person.

Texts

All persona descriptions have text divided into subsections that portray personality features and characteristics and subsections that include information relevant for the specific project. It is different how much weight is put on the two parts. Some descriptions have a clear division between the sections that creates empathy and the sections that inform on use- or work related issues. Other descriptions integrate the two kinds of information.

In one persona cast the descriptions of present time scenarios were intertwined with the persona description. This made the persona description hard to use, as the whole concept behind personas is to use them in the design of future products. This might explain why this company cancelled using the method.

Extra material

Several projects had developed extra material such as post cards and life-size personas in order to enable empathy and to sustain the use of personas. The companies, where the persona method is well integrated, have considered how to promote the persona descriptions in the workspace, e.g. by hanging persona posters at central places in the company or placing posters on the floor.

DISCUSSION

We will in the discussion compare our analysis with the previous mentioned findings from the literature.

Personas are not used for design

In the literature it is reported that personas are used only for communication purposes and not for design. In design the method of building scenarios play a greater role than personas. In the rare occasions where personas are used for design it is only for interface decisions and not for fundamental technical solutions.

It is noted that designers who develop the personas refer to them more and that the designers who develop the personas become persona custodians.

The analysis of the presented study shows a somewhat different picture than in the existing literature. First and foremost, personas are used for design decisions, this was found across disciplines from IT development to architecture. The participants report that the personas only become valuable when they are used directly in the design process. Moreover, several participants report that personas are used in discussions and that designers refer to them and argue from their needs in order to take the right design decisions.

We did not experience a distinction between technical solutions and interface design. Furthermore, we did not see scenarios without personas all participants refer to personas and scenarios as a combined method. What we did see in the analysis is that there are designers who unknowingly become a sort of ambassador and drives the introduction of the method and the following use of personas. But there is more to the picture, it is not always the designers who use the personas that have developed them and most often many designers are involved in the use of a cast.

Designers do not refer to personas in their discussion

In the literature it is found that designers refer to their own opinions and impressions in discussions instead of to the personas.

As we did not take part in any discussions we have not been able to verify or falsify this. But in the interviews we did hear a lot of actual references to the personas and references to how including personas in discussions had helped in the design process.

Problems with persona descriptions

For the persona descriptions it is found in the literature that personas are perceived as abstract and impersonal, and that personifying information misleads and distracts. Additionally, some programmers can be critical because of specific details in the descriptions.

The first issue is not recognised in the Danish study, whereas the programmers' critical stance can be found in the oppositions towards the method where some mention

that it can be difficult to identify with personas that are very different from one self.

Personas are not created entirely from data

In the literature it is presented that personas can be based entirely on data, they can be based on data and fictitious elements, or they can be based solely on fiction and the foundation range from based on ethnographic immersions to produced on the fly.

As reported in the analysis the personas in the Danish companies are created on very different material, from huge user studies to designers' own assumptions. Different from the literature is that the participants are aware of when they use their own assumptions.

It is difficult to tell the level of fictional components from the descriptions we have had access to. There seems to be fictional components in all the descriptions when it comes to the more personal parts.

In our research we never encountered any projects where the creations were produced on the fly. The descriptions were produced on very different sets of data, but even the companies that had no data had created a very thorough process to obtain as much internal knowledge as possible.

Personas are not created at the beginning of a design process

A common finding in the literature is that, contrary to recommendations personas are created throughout the design process and not only at the beginning.

This does not correlate with our findings. Companies where personas are created from project to project create the personas mainly in the beginning of the design process and use them at different stages in the process. Other companies have a set cast of personas that are used for multiple projects, thus they are not created in the beginning of the project, but they are used from the start to the end of the project.

Benefits

The literature mentions several benefits of using the method: Personas help individuals realize how the users/customers are different from themselves. They help prioritize audiences and bring about a focus on the most important audience(s). For product development they help focus on users/customers and their goals. In line with this personas help prioritize product requirements and help to determine if the right problems are being solved. Finally, personas are useful when communicating with non-designers and non-UX practitioners.

The reported benefits from the literature are seen in this study as well. The benefits are perceived as understanding users and their needs, but also providing a common language that enables discussions on users. Furthermore, the method is perceived as a management tool that reduces

wrong decision-making. The process of developing personas enhance the insights into the users and in line with this the project participants' implicit assumptions are discussed and thus becomes explicit. We have no explicit reports on the benefits when discussing with non-designers and non-UX practitioners, but what we can see is that it is used in many different phases of the design process involving many different work roles.

CONCLUSION

In the study of use of personas in Danish companies we found both similarities and differences in comparison with the existing literature. Most significant is that personas are created in the beginning of the design process and that they seem to be well integrated into the existing design practices and used for design. This may also explain why some companies have used the method for more than eight years and why most companies are satisfied or very satisfied with the method. But despite the current achievement, in many companies the success rests upon several failed attempts to use the method.

Concerning data, descriptions purely made on own assumptions, were observed, but contrary to the literature there is an awareness of the difference between data and own assumptions.

There is accordance between the perceived benefits in the literature and our study.

This study broadens the understanding of the application of personas in that it has found that companies develop the method e.g. when introducing role-play together with personas. Furthermore, it reports on the extended challenges and benefits that arise when companies have a transnational market and creates an international cast of personas.

Finally, we found a challenge inherit in the method as the lack of guidance of use in the persona descriptions. This needs to be looked upon in future studies.

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REFERENCES

1. Antle N.A. Child-Personas: Fact or Fiction? *Proc. DIS 2006*, (2006)
2. Atzeni, A., Cameroni C., Faily S., Lyle J., and Flechais I. Here's Johnny: A Methodology for Developing Attacker Personas. *Proc. ARES '11*, IEEE, (2011) 722–727
3. Blomquist, Å. And Arvola M. Personas in Action: Ethnography in an Interaction Design Team. *Proc. NordiChi 2002*, ACM, (2002) 195–198

4. Bødker, S., Christiansen, E., Nyvang, T., and Zander, P.-A. Personas, People and Participation: Challenges from the Trenches of Local Government." *Proc. PDC 2012*. ACM Press, (2012) 91–100
5. Chang, Y. Lim, Y. and Stolterman, E. Personas: From Theory to Practices. *Proc. Building Bridges*, ACM, (2008) 439–442
6. Chapman, C.N., Love, E., Milham, R.P., ElRif, P., and Alford, J.L. Quantitative Evaluation of Personas as Information." *Proc. HFES 52nd Annual Meeting*, (2008) 1107–1111
7. Cooper, A., Reimann, R., Cronin, D. *About Face 3.0: The Essentials of Interaction Design*. Wiley, (2007)
8. Cooper, A.: *The Inmates Are Running the Asylum*. Indianapolis. SAMS, (1999)
9. Dotan, A., Maiden, N. Lichtner, V. and Germanovich, L. Designing with Only Four People in Mind? – A Case Study of Using Personas to Redesign a Work-Integrated Learning Support System. *Proc. HCI '09* Springer, (2009) 497–509.
10. Faily, S. and Flechais I. Persona Cases: a Technique for Grounding Personas." *Proc. CHI '11*, ACM (2011) 2267–2270
11. Floyd, I. R., Jones, C. M., and Twidale, M. B. Resolving Incommensurable Debates: A Preliminary Identification of Persona Kinds, Attributes, and Characteristics. *Artifact 2, 1*, (2008) 12–26
12. Friess, E. The Sword of Data: Does Human-Centered Design Fulfill Its Rhetorical Responsibility?" *Design Issues 26, 3*, (2010) 40–50
13. Gudjónsdóttir, R. and Lindquist, S. Personas and Scenarios: Design Tool or a Communication Device? *Proc. COOP'08*, (2008) 165–176
14. Hosono, S. Hasegawa, M. Hara, T. Shimomura, Y. and Arai T. A Methodology of Persona-centric Service Design. *Proc. 19th CIRP*, (2009) 541–547
15. Junior, P. T. A., and Filgueiras, L. V. L. User Modeling with Personas. *Proc. CLIHC '05*, ACM Press, (2005) 277–282
16. Kantola, V., Tiitta, S. K. Mehto, K. and Kankainen, T. Using Dramaturgical Methods to Gain More Dynamic User Understanding in User-centered Design. *Proc. C&C 07*, ACM Press. (2007) 173–18
17. Kvale, S. *InterView*. Hans Reitzel. (1997)
18. Laporte, L., Slegers, K. and De Grooff, D. Using Correspondence Analysis to Monitor the Persona Segmentation Process. *Proc. NordiChi 2012*, ACM, (2012) 265–274
19. Long, F. Real or Imaginary - the Effect of Using Personas in Product Design. *Proc. IES Conference, 2009*. Irish Ergonomics Review, (2009)
20. Ma, J. and LeRouge, C. Introducing User Profiles and Personas into Information Systems Development. *Proc. AMCIS 2007*, (2007) paper 237
21. Markensten, E. and Artman, H. Procuring a Usable System Using Unemployed Personas." *Proc. NordiCHI 2004*, ACM Press, (2004) 13–22
22. Massanari, A. L. Designing for Imaginary Friends: Information Architecture, Personas and the Politics of User-centered Design. *New Media & Society, 12, 3*, (2010) 401–416
23. Matthews, T., Judge, T. and Whittaker, S. How Do Designers and User Experience Professionals Actually Perceive and Use Personas?" *Proc. CHI '12*, ACM, (2012) 1219–1228
24. McGinn, J. and Kotamraju, N. Data-driven Persona Development." *Proc. CHI '08* ACM Press. (2008) 1521–1524
25. Miaskiewicz, T., Kozarb, K. A.: Personas and User-centered Design: How Can Personas Benefit Product Design Processes? *Design Studies 32, 5*, (2011) 417–430
26. Negru, S. and Buraga S. Towards a Conceptual Model for Describing the Personas Methodology. *Proc ICCP '12* IEEE (2012)
27. Nieters, J. E., Ivaturi, S. and Ahmed, I. Making Personas Memorable. *Proc. CHI '07*, ACM Press, (2007) 1817–1824
28. Nielsen, L. *Engaging Personas and Narrative Scenarios*. Vol. 17, PhD Series. Samfundslitteratur (2004)
29. Nielsen, L. *Personas - User Focused Design*. Human-Computer Interaction. Springer (2012)
30. Nielsen, L., Nielsen, K. S., Stage, J. and Billestrup, J. Going Global with Personas. *Proc. INTERACT 2013*. Springer, (2013)
31. Nielsen, L. and Nielsen, K. S. Personas - from Poster to Performance. *Proc. PIN-C. 1*, Chap. 273, (2013) 270–273
32. Pruitt, J., Adlin, T. *The Persona Lifecycle*. Morgan Kaufmann (2006)
33. Pruitt, J., Grudin, J. Personas: Practice and Theory. <http://research.microsoft.com/en-us/um/people/jgrudin/publications/personas/pruitt-grudin.pdf> (2003)
34. Rönkkö, K. Hellman, M. Kilander, B. and Dittrich, Y. Personas Is Not Applicable: Local Remedies Interpreted in a Wider Context." *Proc. PDC 2004*, ACM, (2004) 112–120
35. Sinha, R. Persona Development for Information-rich Domains. *Proc. CHI2003*. ACM, (2003)
36. van Velsen, L. van Gemert-Pijnen, L., Nijland, N. Beaujean, D. and van Steenberghe, J. Personas: The Linking Pin in Holistic Design for eHealth. In *proc. eTELEMED 2012* (2012)