Global Family Networking for the Elderly
Usability Evaluation and Redesign of ModernFamilies.net

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Abstract

This paper, the corresponding wireframe documentation including the functional prototype and flowchart document the evaluation and redesign of the beta version of the social networking platform ModernFamilies.net. In order to reveal possible usability flaws for people of different generations, in particular the elderly, a user-centered design approach including an expert review, diary studies and interviews were conducted. The findings reflected the need for consistency and feedback in general. For young children, the concept of the site appeared to be hard to grasp. Experienced users found the access and management of relatives cumbersome. Most importantly, the elderly, novice computer users had a hard time getting started with the site on their own because they did not have access to a PC nor internet at their home. The latter and the fact, that some issues might never be solved by traditional usability testing because the user just feels overwhelmed by the vast amount of communication features he is faced with today calls for alternative, more intelligent, ambient interfaces. However, we came to the conclusion that although evaluation of such new technologies with elderly people is not always easy, it is best to be conducted in the participants home or a similar environment.
Author Keywords

Social networking, elderly, children, people of all ages, usability evaluation and design, ambient interfaces, ubiquitous environments, wireframes, flowchart
ACM Classification Keywords

H.5.2 [User Interfaces]: Evaluation/methodology, Graphical user interfaces (GUI), Prototyping, Screen design (e.g., text, graphics, color), User-centered design
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1. Introduction

The rapid development of more and more sophisticated technologies today offers us multifaceted means of communication that theoretically allow us to easily stay in contact with family, friends and loved ones, even if far away. They enhance our capability as human beings to break the physical bounds of time and space by digitally exchanging and sharing various information with other people in the blink of an eye between nearly any places in the world.

However, the increasing amount of Graphical User Interfaces (GUIs) that surround us, as for instance stationary and portable personal computers, cell phones and other mobile devices tend to exceed our capacity to absorb information mostly because they require our full attention in order to be activated (Ishii, 2008; Ishii, 1998). With several activities taking place simultaneously in the foreground of our attention, especially elderly people - who did not grow up with digital technology nor needed to use it during their working career - have a hard time getting started with and actually take advantage of existing communication devices.

In order to minimize our constant mental awareness, research on how the focus of our attention can be shifted into the background, that is the design and development of so called ambient interfaces and environments, has become more and more important during the past decade (Ishii, 2008; Ishii, 1998). Making use of ambient devices and advanced sensor technology is also the main theme of the AGNES project which is operated by a consortium of both academic and industry researchers throughout Europe, among which participating institutions are the Department of Informatics at Umeå University, Sweden and ModernFamilies.net SA, Austria. By implementing a social family network that integrates ambient technologies they strive to facilitate communication between the elderly, their family members and caregivers being at different sites in order to retain an autonomous life within their home as long as possible.

The focus of the underlying paper concentrates on the evaluation and redesign of the beta version of the social family networking platform ModernFamilies.net prior to the beginning of the AGNES project, and the exploration of alternative, future interaction modalities to facilitate its integration into the everyday home environment of the elderly.

To date, the ModernFamilies-platform is technically sophisticated, that is lots of features have been developed and implemented. However, a lot of these features are hardly used by any users. Besides, the overall amount of users is very limited (350 users, 2000 profiles) stretching over only a narrow age range. Especially, for the elderly generations the technology itself presents a high entrance barrier.

The reasons for the very low active usage rate might be diverse, however mainly be grounded in the usability of the interface and the interaction flow of the application. Not all steps in the interaction flow might be easy to understand, intuitive and unambiguous. One major known problem is that the users' expectations about building their family tree does not correspond to the implemented behavior of the application. Moreover, it has not yet been proved which features users find relevant, and which irrelevant, or which might be missing. Also, privacy and trustworthiness seem to be an important issue, such as the look and feel might not be appealing to all generations. Which other issues, problems, and possible barriers are there that prevent users - young people, adults and the elderly - from registering and...
actively using the platform? That is, how can the performance of the platform be improved to get as many active users as possible?

While many user-centered design methods and principles for evaluating standard web applications became well-established and have proven themselves, the evaluation of ambient interfaces is still a new and uncharted territory (Mankoff et al., 2003) and therefore another important subject matter of this paper.

This paper begins with identifying issues for usability evaluation and design for specific age groups, i.e. the elderly and children, in general. In the second step, the method and procedure for the evaluation and design of the social networking platform ModernFamilies are presented. Hereafter, the detailed findings and synthesized implications for redesign are described. Finally, the most important findings and recommendations are summarized, a possible future scenario showing how the ModernFamilies-platform could be integrated into the everyday home environment using ambient technology as well as an overview of current evaluation methodologies focusing on ambient interfaces is outlined. A collection of wireframes including a functional prototype and a flowchart illustrating the implications for redesign complete this paper.
2. Usability Evaluation and Design for Specific Age Groups

Iterative evaluation of interfaces while designing takes an important part within the interface development cycle. For instance, involving users into the design process also known as user-centered design, has been proven to be beneficial both among usability practitioners and researchers. When designing for people of specific ages different aspects have to be considered for children and for elderly people. This applies to both, the evaluation as well as the design process. The evolvement of novel technologies and application areas, such as the one of ambient devices and environments, causes additional challenges in regard to usability evaluation and proper design. However, as Mankoff et al. (2003) reaffirm, evaluation – that is continuously defining an interface's effectiveness – is indispensable for the further development of any interface.

The social networking platform ModernFamilies.net is aimed at being used by elderly, their family members young and old, caregivers and so on. Two important age groups to which one have to pay special attention when evaluating and designing the platform are children and the elderly. One reason for this is that both age groups vary a lot in their capabilities, for instance motor behavior, cognition and memory capacity, from average aged people (Dickinson et al., 2007). Hanna et al. (1997) moreover note, that ”Children’s usability testing can [even] refine user interface design [to make it] accessible for all ages”. Numerous literature and online sources are available on this topic. The issues presented below, basically refer to Hanna et al. (1997), Nielsen (2002a, 2002b), Burmester (2007) and the online Usability Forum (Usability Forum, 2009a, Usability Forum, 2009b) powered by the Austrian company Interface Consult.

In the following, some of the most important aspects to be considered when evaluating and designing applications for children and elderly are outlined.

2.1 Children

Children before entering high school are by their very nature usually impatient. The average amount of time they can concentrate usually lies between 8 and 15 minutes. During an evaluation session, it should be pointed out that not their ability to use a system is being evaluated, but that it is their thoughts and opinion which matter. To overcome shyness, if possible, siblings could be questioned in one and the same session unless they differ too much in their age. In order to receive adequate results when testing with children, furthermore the following aspects should be considered:

**Familiar environment:** If possible, test within an environment the children are used to.

**Flexible time schedule:** Schedule appointments generously.

**Max. session duration:** One session (for preschoolers) should last less than 30 minutes.

**Prepare children:** Ask parents to prepare and pre-inform their children previous to the test session.

**Concrete instructions:** Provide concrete task instructions.

**Playful introduction:** Begin with games or a self-exploration phase to settle them in.
**Body language:** Observe children's body language and mimics, such as sighs, smiles, frowns, yawns, fidgeting, laughing, swaying, and body posture, to complement limited think-out-loud skills.

**Refrain from help:** Pose counter questions instead of providing help right away (e.g. “What do you think?”).

**Motivate:** Provide positive feedback and motivation throughout the test (e.g. “Could you please find out for me...?”, “You are doing really well, really helping and telling lots of useful things!”, “Try for one more time!”).

**Non-monetary compensation:** Recompense children with a non-monetary award or incentive.

**No Y/N-questions:** Avoid asking Yes-/No-questions. Instead formulate the task as a kind request, e.g. “Now I need you to...”, “Let’s do this...” or “It’s time to...”.

In addition to the individual results of a usability study, the following guidelines when designing user interfaces for children might be helpful (Hanna et al., 1997; Nielsen, 2002a; Burmester, 2007; Usability Forum, 2009a). Most of them result from the children's restricted cognitive and motor skills, since their fine motor skills of their hands and their eye-hand coordination are not yet fully developed. Preschool-aged children are not able to properly differentiate between left and right-hand mouse button. However, mouse and touchscreen are most preferred as input devices by children. Moreover, children often need up to 3 times longer to react on an event compared to an adult person. Furthermore, they most often have access to only slow internet connections and outdated hard- and software.

**Set main intention:** Set the main intention of the application, e.g. providing goal-oriented tasks, playing (fun) and/or entertaining (cool), supporting community concept, promoting creativity and learning.

**Min. button size:** Use a minimum button size of 64 x 64 pixels, for clicking areas smaller than 64 x 64 pixels expand to minimum size on mouse over.

**Mouse pointer:** Apply a ludic1 mouse pointer.

**No double-clicks:** Omit double-click actions.

**Omit drag-and-drop:** Prefer point-and-click to drag-and-drop, since it causes less faults.

**Visual/Audio feedback:** Provide prompt feedback and illustrate abstract processes, such as waiting time, visually. Also, consider visual or audio feedback for click actions.

**Colorful:** Use colorful designs.

**Simplicity:** Enforce simplicity, e.g. use simple language and metaphors familiar to children instead of fancy and abstract wording.

**Flat hierarchies & 3D-metaphors:** Keep information architectures flat and navigation straightforward, e.g. one access per destination; consider the application of geographic navigation metaphors, e.g. villages, rooms, 3D maps etc..

**Indication of location:** Always provide information on current location, e.g. a location-based breadcrumb.

**Avoid time-taking actions:** Avoid extensive and time consuming downloads.

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1 *ludic* derives from the Latin term *ludus* = *play*. It literally translated to *playful* and describes any concept which is related to or characterized by *play* (Merriam Webster Online Dictionary 2009); cf. also Saffer, 2007
Use standards: Use only standard interaction techniques if possible.

Multimedia effects: Make use of multimedia effects, such as animations and sound (e.g. talking).

Games: If applicable, include (collaborative) games.

No scrolling: Avoid scrollable pages.

Crisp instructions: Keep instructions as short as possible and visually connect with element on the screen; provide anytime access.

Characters: Use leading characters from cartoons, movies, TV shows etc..

2.2 Elderly

Evaluating and designing applications for elderly people still faces quite a few challenges and difficulties (Dickinson et al., 2007). In a few more decades, those related to the elderlies' low level of experience or reluctance towards using modern technology - because not being used to growing up with digital technology nor using it during their working career - will be disappearing with younger generations growing old. Dickinson et al. present a list of issues to consider when conducting usability evaluation studies with older adults which are summarized below:

Min. font size: Use at least 14 pt font size for written documents.
Language: Use clear language.

Min. font size: Find regulations in case the elderly bring companions, such as pets.
Remind & follow-up: For diary studies, regularly check or send reminders if information is protocolled as required, immediately discuss results afterwards, or with unexperienced participants discuss at best one-to-one right away.

Flexible time schedule: Allow for flexible time scheduling and allow for re-scheduling due to unexpected personal incidents, such as illness etc..
3rd parties: Pay attention to pre-screening of participants by 3rd parties, e.g. caregivers etc..
Contact information: Provide comprehensive instructions about how to get to the site, contact phone numbers etc. and confirm receipt.

Easy facility access: Ensure simple route guidance and disabled-friendly access to the facility.
Incentives: Offer appropriate incentives, e.g. free computer courses.

Regarding the concrete design of applications for elderly people, their performance and perception are often influenced by limited vision, cognitive and motor behavior skills (Dickinson et al., 2007). Eye sight, precision of mouse movement and memory capacity, for instance, often decline with increasing age. Using keyboard and voice recognition are preferred over a mouse as input methods. In order to make user interfaces accessible to elderly people it is recommended to follow the guidelines listed below (Nielsen, 2002b; Usability Forum, 2009b).

Simplicity: Enforce simplicity, e.g. avoid anglicized, technical and fancy vocabulary.

Flat hierarchies: Avoid pull-down and hierarchically deep menus, use static menus instead.
Standard colors: Use distinct, standard colors for hyperlinks.
**Fault-tolerant input:** Support several formats for fault-tolerant data input, such as telephone numbers.

**Simple error messages:** Keep error messages simple while stating the error, explaining it clearly, and providing the easiest solution possible to repair it.

**Explain conceptual models:** Provide help for and explanation of apparently similar conceptual models, e.g. URL vs. search-box input field.

**Min. font size:** Use large font sizes, at least 12 pt, ideally with an option to increase, in particular hypertext links.

**High contrasts:** Ensure high contrasts and avoid green-blue shadings.

**Restrict amount of information:** Keep information on a single page to a minimum.

**Emphasize:** Emphasize important things.

**White space:** Apply white spaces between several links generously.

**Icons:** Use meaningful icons.

**Min. screen resolution:** Adopt applications to a minimum screen resolution of 800 x 600 pixels or 1024 x 768 pixels.

**Button size:** Design buttons and other active areas larger than usual.

Summarizing the issues for children and elderly mentioned above, Saffer (2007) brings it to the point:

> “Testing is best done in the subject's own environment: on the subject's computer, in the subject's home or office, in the subject's city or town.” (Saffer, 2007)
3. Method and Procedure

With the most important aspects when evaluating and designing applications for specific age groups in mind, the beta version of the social family networking platform ModernFamilies.net was evaluated and redesigned.

Previously to the evaluation and redesign, a stakeholder interview with the company ModernFamilies.net SA, Austria as the creator of the ModernFamilies platform was carried out.

The evaluation and redesign of the existing beta version of ModernFamilies.net is based on a user-centered design approach in combination with an expert evaluation. This included an expert review conducted by the author to identify issues that could be improved promptly and without major effort, followed by an informal qualitative usability study to identify major usability barriers. The qualitative usability study furthermore involved diary studies (Kaptelinin, 2008; Saffer, 2007), personal and telephone interviews with participants. Diary studies and interviews were chosen because they do not rely on the researcher's permanent presence usually required by field studies (Carter et al., 2005) which would not have been feasible due to limited time and resources of this study.

The findings from the expert review, diary studies and interviews were then analyzed and summarized to the most important issues that could lead to a major improvement of the existing beta version and to possibly new approaches (cf. 4.Findings from Expert Review, 5.Findings from Diary Studies and Interviews).

3.1 Participants

Due to limited resources and time, five family members and friends of the author all living at different sites throughout Germany were recruited for the usability study, for which reason the presented usability study can only be referred to as informal. Participants included 1 primary school-aged 6 year old girl, 2 complete novice users (1 male aged 56 years, 1 female aged 83 years) and 2 experienced computer users (both female, aged 28 and 53 years). The average age of participants was 45 years.

All participants except two were asked to expose themselves to the ModernFamilies-platform for a week and to protocol their experiences in a diary template (cf. Appendix). The other two, complete novice computer users, the 83 year old woman and the 56 year old man, were interviewed in person at the author's home site due to their limited experience with and access to a personal computer with internet connection (cf. 2.Usability Evaluation and Design for Specific Age Groups). Subsequently, all participants were interviewed about the existing prototype application by directed storytelling (Saffer, 2007) in regard to functionalities, ease of use, look and feel etc..

3.2 Material

The diary studies were conducted using instruction sheets and age-specific templates (cf. Appendix).
Based on the findings a flowchart (cf. 6.Implications for Redesign) representing parts of the new site structure and wireframes including a functional prototype (refer to accompanying wireframe-document) were designed to illustrate the implications for redesign. All, flowchart and wireframes including prototype were created using MS Visio and OmniGraffle, both of which are common diagramming and design software tools.
4. Findings from Expert Review

In this chapter, the findings from the expert review, which was carried out before the diary studies and interviews with the participants, are presented.

4.1 Profile Screen

Consider to rename Profile, since it might be misleading and mistaken for the person's personal details.

In the Details tab and in general, obligatory fields should be marked as such by an asterisk or similar, all others not required accordingly not at all. A person's e-mail address should only be required for an invitation of this person. Moreover, the layout of input fields is confusing.

When saving changes in the Details tab and for some other actions, intermediate feedback e.g. in form of an hourglass indicating the saving/calculating process or selection (e.g. after selecting a type of relation) is missing. The response time to some actions partly is quite long.

In the Relations (Beziehungen) tab, an option to Add a Relative (Verwandten hinzufügen) could be useful.

4.2 Mini View

The connection between the mood message bubble and the question mark is not clear.

If linking to the Details from the Mini View, the Mini View window had disappeared after the Details window has been closed.

It might be important to quickly Add a Relative from within a person's Mini View.

4.3 Family Tree View

Parent generations should not automatically be generated unless added oneself.

First and last names of family members should be visible within a family member's box element.

Horizontal scrolling of large family trees is not possible, except via left and right arrow keys.

If the focus of the family tree has been changed to another relative, exiting the modified view of the family tree is not obvious (cf. Figure 19).

If a new family member is added to the family tree without specifying a concrete name, the default name for the relative, e.g. Marleen's Mother (Marleen's Mutter), along with the type of relation, e.g. Mother (Mutter), seem redundant, since the type of relationship is mentioned twice, but not graphically set off against each other (cf. Figure 22).

Distant family members are not displayed, although still alive. An option to hide deceased persons in the family tree might be useful.

4.4 Add a New Person and Add a New Relation

The difference between Adding a New Person (Neue Person anlegen) who is not yet existing in the network and Adding a New Relation (Beziehung hinzufügen) to a person already
existing in the network is hard to grasp. The user may not remember or accidentally make a wrong decision. It is assumed that setting up a new person and defining the relation go hand in hand.

In the relations overview table, only unconfirmed relationships are marked. On the confirmation screen the tense of the phrase *The connections are now being established*... (*Die Verbindungen werden angelegt*...) is quite misleading.

Being able to directly define relatives as nieces, nephews, aunts and uncles might be convenient.

Siblings are not always added error-free, i.e. their parental relationships is sometimes set up wrong, e.g. real *brothers* are set up as *half-brothers* and the other way around.

**4.5 Invite**

Currently, it is not possible to invite persons without first setting up their profile. However, inviting other people, without setting up their personal data first, might be useful for indirect or distant relatives, e.g. brother-in-law, sister-in-law, nieces, nephews).

An option to print out and send paper invitations to relevant persons should be considered, also an option to send out invitations to a person's mobile phone.

**4.6 Tooltip and Wording**

When hovering over a family member in the family tree, avoid to display its technical database relations as tooltip help. Also, when defining the correct pair of parents from the list, the labeling of relatives does not correspond to normal speech.

**4.7 Inconsistent Use of Icons and Labeling**

Icons and labeling are not used consistently throughout the entire application. The pictures below show the current use of different icons and labels for one and the same thing, or of one and the same icon for two different things.

**4.7.1 Ambiguous Linking**

Clicking on the silhouette icon in the top left corner links to Profile Screen - News, from within the *Mini View* yet to Profile Screen – Details.

![Figure 1: Silhouette icon currently linking to Profile Screen - News](image1)

![Figure 2: Silhouette icon linking to Profile Screen - Details](image2)

**4.7.2 Add a New Person**

Two different icons are used at different places for *Adding a new person* to one's network.
4.7.3 Add a New Relation

Two different icons are used at two sequential places for *Adding a new relationship* and then, confirming it.

4.7.4 Write a Story

A completely different icon is used for accessing *Stories* than for *Writing a story*. Also, two different labels are used for one and the same action of *Writing a story* (cf. Figure 8, Figure 9).

4.7.5 Write a Message

The faded labeling *Write message* (*Nachricht schreiben*) within the *Mini View* is ambiguous since it conveys the impression that I myself am not allowed to write a message. Also, in the sidebar navigation (Figure 11) a different label is used for one and the same action of writing a message than in the *Mini View*. 
4.7.6 View Network

Clicking onto View network (Familie ansehen) via the Mini View within the radar view not only changes the focus to this person, but also switches to the Family tree view for which a different icon (cf. Figure 13) is used.

4.7.7 Details

The gender of the Details icon within the Profile Screen is not identical with the gender of the Details icon within the Mini View.
4.7.8 Views vs. Navigation

One and the same icon is used for two different meanings.

Figure 16: Views
(Ansichten)

Figure 17: Navigation
5. Findings from Diary Studies and Interviews

The findings presented below are based on the diary studies, personal and telephone interviews conducted with the participants. If not otherwise indicated, all of them are unsupported, single statements.

5.1 Primary-School Children

5.1.1 Concept Understanding

Communicating over the internet is not yet fully understood by the primary school-aged child. The ModernFamilies-site and the concept of keeping track of one's own family through creating a family tree is too complex and can not be used without help and instructions of an adult. The mouse plays a central role when using the computer.

5.1.2 Relevant Activities

Adding people as contacts was seizable. The site's functionality was compared to Skype which the child is familiar to. Other major activities the child enjoys on a computer are text editing, educational and e-learning games. Out of the available games the Puzzle and Connect Four were of interest. Moreover, they use Google to search for their favorite characters, such as Bibi and Tina, Lillifee, Playmobil and the like. Uploading pictures was seen as a merit.

5.1.3 Representation of Family Members and Friends

Friends and family members were confirmed to be represented by a photograph of their face. Further, they should be displayed around oneself.

5.1.4 Look and Feel

Look and feel, that is the color scheme of the website was rated as positive.

5.2 The Elderly and Novice Users

5.2.1 Infrastructure at Home

The typical home setting of the elderly and novice, but potentially interested participants can be described by not sufficient access to a personal computer, nor internet connection. Their first and major barrier to overcome is a lack of the basic understanding of computer usage (e.g. starting the computer, mouse operation on graphical interface etc.) and internet technology (e.g. selecting an internet provider, the difference between e-mail and internet-address, connecting to the internet through the browser etc.), but not the ModernFamilies-site at first hand.
5.2.2 Language and Wording

In addition, sufficient English knowledge can not be assumed. The ModernFamilies-site is loaded in the English version per default, but not in the language of the country, e.g. German in Germany, where it is accessed from. Furthermore, the notion Tutorial was not understood.

5.2.3 Free of Cost

A prominent indication that using the ModernFamilies-site is free of any costs is very important to potential first time users.

5.2.4 Log in

There is a risk that the type of data needed for logging in is not quite understood when visiting the site for the first time due to the inarticulate labeling of the input fields.

5.2.5 Welcome Screen and Help

The Welcome Screen, that is the instructions about how to use the site is very important to the elderly, novice users. Navigation – The important elements you see (Navigation – Wie navigiere ich im System?) was not understood. The icon was stated to be confusing with the same icon being used for Views (Ansichten) in the sidebar navigation (cf. Figure 16, Figure 17).

The Welcome Screen, in one case, was even mistaken for the navigation menu of the website itself, apparently because the background was faded out. It was complained about too much text to read. The participant lost its patience and without any help would have exited the site without ever having tried out something.

The Help (Hilfë) character at the top right corner was instead mistaken for another member of the family due to its nearly similar shape and coloring.

5.2.6 Mood Status

Within the Mini View, the question mark being connected to the current mood status was not clear, but mistaken for a help functionality.

5.2.7 Look and Feel

Look and feel, that is the colors of the site were rated as positive.

5.2.8 Management of Relatives

Family members and friends are basically seen as contacts. An access to one's contacts, that is relatives, directly via the sidebar navigation was stated missing. However the management of contacts was stated to be absolutely essential, also in order to quickly change or delete a relationship.

5.2.9 Navigating

When getting lost, navigating backwards by using the browser button was expected.
5.3 Experienced Users

5.3.1 Added Value
The added value or advantage of the ModernFamilies-portal compared to other communication services (e.g. calling via landline phone, short text messaging via mobile phone, e-mail via regular e-mail provider, internet telephony, blogging, private webpages etc.) as well as social networking portals (e.g. facebook, studiVz etc.) is not obvious. Coping with several different social networking platforms, because different friends use different platforms, is seen as time-consuming.

5.3.2 Log in
Needing to fill in 3 input fields in order to log in, that is the e-mail-address, login name and password, instead of usually 2 (either e-mail-address or login name in combination with password) was confusing.

5.3.3 Management of Relatives
The process of adding and inviting a new person, that is entering the person's personal information, is considered to be confusing, laborious and time-consuming. Moreover, the difference between Adding a person (Person anlegen) and Add a relation (Beziehung hinzufügen) in the Mini View was not understood (cf. 4.4 Add a New Person and Add a New Relation).

“Add a relation - for what do I need this? Is this a new contact?” (Participant's statement)

It is expected to define the relationship when adding a new relative. An option to simply invite relatives via e-mail or to search the network for persons (relatives) by their name as offered by other social networking platforms or setting up and managing relatives simply as contacts was expected.

Categorizing friends is considered to be sensitive information which should be invisible for the friends themselves. Parent generations should not automatically be generated unless added oneself.

5.3.4 People Chooser
The option for Adding to your network here (Hier anlegen) along with Is somebody missing in the list? (Fehlt jemand in der Liste?) was thought to be too underrepresented. A graphical button inline with the other buttons was preferred instead.

5.3.5 Structuring and Navigating Stories
Structuring and navigating through a vast amount of stories of one's contacts is seen as critical. Stories about others are only seen as relevant if there is an option to get automatically notified about new stories.
5.3.6 Games

The game design was rated as negative. Graphics and realization were considered to be confusing and daunting, for instance the transparent background images. The instructions are too extensive. A design that speaks for itself compared to long instructions is preferred by the experienced users. Out of the currently available games, *Connect Four* is of interest.

5.3.7 Videos

Uploading and watching video streams do not qualify due to fearing slow loading times and despite a broadband ISDN connection.

5.3.8 Trustworthiness

The site was rated as trustworthy, although the registration process with accepting the use terms and conditions are confronted with skepticism.

The protection against spamming when setting up another person's profile and having to enter his e-mail address is seen as crucial.

5.3.9 Look and Feel

The combination of colors (pastel yellow, red and green) appears unfinished and immature. A color theme of deep colors (turquoise etc.) would be preferred.

In the following chapter, the synthesized findings from the expert review, diary studies, personal and telephone interviews are presented.
6. Implications for Redesign

In the following, the synthesized implications from the expert review, diary studies and interviews are presented. The suggestions for improvement are furthermore illustrated in detail in the accompanying wireframe document including a functional prototype. The functional prototype represents the changes affecting the flow of the site which are moreover reflected in a flowchart diagram (cf. Figure 18).

6.1 A Separate Version for Kids

The study of the primary school-aged child showed that the underlying concept of the Modern Families-website is too complex for children of that age. A minimized version for children offered by a separate tab on the Modern Families-front page is suggested. The kids' version should only include the most basic functions and a very simplified management of one's contacts, that is relatives.

Some sample features could be: searching for people by name, inviting people via e-mail, educational and/or e-learning games (e.g. Puzzle, Connect Four), text editing/writing messages or uploading pictures.

Since children are attracted by spatial and 3-dimensional layouts (Nielsen, 2002a), the use of geographic navigation metaphors (e.g. houses, cities, landscapes etc.) should be considered for design to support independent navigation.

Wireframe reference: Front Page

6.2 Front Page

Besides offering access to the kids version, the front page should load the language version of the country where it is accessed from by identifying the language settings of the operating system, the browser or the client's IP-address, since it can not be assumed that all first-time visitors have proficient English knowledge.

The unique selling proposition of the Modern Families-website needs to be made more clear on the front page, e.g. by Keep in touch with your entire family (Bleiben Sie in Kontakt mit Ihrer ganzen Familie). Also, a prominent indication on the front page that the service is free of any cost is needed.

In the German version, corresponding labels must be distinct, that is replace Loginname by Anmeldename or Nutzername. Furthermore, the registration option for first time visitors should be more obvious. If feasible, merge log-in and registration.

Wireframe reference: Front Page

6.3 Support for Novice and Elderly

A compact first-steps guide that addresses the basics of computer usage (e.g. starting the computer, mouse operation on graphical interface etc.) and internet technology (e.g. selecting an internet provider, the difference between e-mail and internet-address, connecting to the internet through the browser etc.) is indispensable.
Figure 18: Flowchart showing changes in the darker color
An option to print out invitations on paper including the first-step guide would reach out to those having only little previous to no computer and internet experience.

*Wireframe reference: Invite*

### 6.4 Welcome Screen and Tutorial

The *Welcome Screen* needs to be distinguishable from the sidebar navigation. Include *Getting started (Erste Schritte)* in the headline. Replace *Navigation* by *Introduction (Einführung)*. Shorten and realign the text paragraph below the headline. Structure the text in the tutorial for better perception at a glance.

*Wireframe reference: Welcome Screen*

### 6.5 Main Page

If the family view has been changed, the difference between which person is currently being in focus and *Going back to one's own family* needs to be more obvious (cf. Figure 19).

![Figure 19: Current family tree view – Focus and Exiting](image)

Allow for horizontal scrolling of the *Family tree view* via a scrollbar. Make clear, e.g. through tooltip help, but also in the *Tutorial*, how the *Family tree view* differs from the *Radar view*.

*Wireframe reference: Main Page*

### 6.6 Management of Relatives

Adding a new person (relative) and defining the relationship should go hand-in-hand. It is suggested that a user profile can only be created by the person itself, except for already deceased ones, to keep the administration effort as minimal as possible. Potential relatives should be searchable within the network. A relationship request needs to be sent first, that is a person is only added as a relative one's network if the relationship has been confirmed by the potential relative. Mark not confirmed relationships as *Pending*.

Moreover, one should be able to define a person being responsible for the handling of one's profile after one's own death.

Rename *Relations (Beziehungen)* in the sidebar navigation and the *Profile Screen* to the more general term * Relatives (Verwandte)* to make the access to one's relatives more obvious. In the *Mini View*, rename *Add relationship* to *Add relative*.

Potential relatives, that are not yet a member of the platform, should be possible to be invited via e-mail and other means of communication, e.g. paper invitation, mobile phone etc. without setting up their profile at all. In the current version, providing an e-mail address when setting up a new relative should clearly indicate that the addressed person is going to be sent
an e-mail. If feasible, allow to define new relatives as nieces, nephews, aunts and uncles (which would include defining mutual grandparents, parents, one's parents' siblings and/or one's sister-/brother-in-law etc).

Wireframe reference: Add Relative, Invite, Main Page, Mini View, Profile Screen - Relatives

6.7 Help

The help function in its shape and appearance should be distinguishable from family members and friends since it does not belong to the family network and offers different functionalities. An agent-like character though should remain since it encourages personification. In the German version, replace the word Tutorial by Anleitung.

Wireframe reference: Main Page, Help

6.8 Tooltip and Wording

Make use of more meaningful terms as tooltip help, for instance, the type of relation related to the person only one level below. Thus, the example below should read Mother of Great-
Grandmother ... (Mutter von Uroma ...) instead of Mother of Mother ... of Father ... of Mother (Mutter von Mutter ... von Vater ... von Mutter ...).

When selecting parents from the list, the name of the relative should correspond to general language usage and word order. Thus, the example below (cf. Fehler: Referenz nicht gefunden) should display the concrete name, i.e. read Auguste Neumann, Stendal, or Else Müller's Mother, Stendal (Else Müller's Mutter, Stendal) instead of Else's Mother Müller Stendal (Else's Mutter Müller Stendal).

Figure 20: Current tooltip showing technical relation in the database
6.9 Mood Status

The graphical visualization of the mood status needs to be revised in all instances (Mini View, Write a new message etc.). Make use of tooltip help and default text to explain the mood status functionality which would make the question mark redundant.

*Wireframe reference: Mini View*

6.10 People Chooser

Replace the link for Adding a relative which does not yet exist in the list by a prominent button.

*Wireframe reference: People Chooser*

6.11 Profile Screen

Rename Profile to e.g. Account or Work space (Arbeitsbereich or Arbeitsfläche), since Profile might be misleading and mistaken for the person's personal details. Account or Work space cover more than the personal details.

In the Personal Info tab and in general, obligatory fields should be marked as such by an asterisk or similar, all others accordingly not at all. Logical related fields should be aligned and grouped together. Allow to add additional contact info under the Personal Info tab, omit the tab Contact details (Kontaktdaten) instead.

*Wireframe reference: Profile Screen – Personal Info*
6.12 Feedback

When saving changes under Profile Screen – Details and for all actions in general, intermediate feedback, e.g. in form of an hourglass indicating a saving, calculation or selection process, should be included after each action. For delays longer than 1 sec. a progress bar or timer needs to be added (Saffer, 2007), delays longer than 10 sec. should be reviewed if they are reasonable at all, e.g. loading contact list in the People Chooser.

When setting up a new relative, the wording and tense of the confirmation should be more precise, that is The relationship was created successfully. (Die Verbindungen sind nun angelegt.) instead of Creation of connections in progress ... (Die Verbindungen werden angelegt ...). Thus, the screen should only appear once the system has successfully established the connections, yet showing the hourglass mouse pointer already on the previous screen where the action has been triggered.

6.13 Family Tree Node

Display first and last names of family members in two lines within a family members box element providing a more unique assignment of each person.

Furthermore, graphically set off the (default) family member's name (e.g. Marleen's Mother) from the type of relationship (e.g. Mother).

*Wireframe reference: Main Page*
6.14 Icons and Labeling

Ensure consistent and distinct use of icons and labels throughout the entire ModernFamilies-site. Replace and use autonomous icons and labels for each concept.

6.14.1 Unambiguous Linking

If using the same icon, also link to the same target, here Profile Screen - Details.

6.14.2 Add a New Person

Use one and the same icon for Adding a new person via the sidebar navigation as via the Mini View.

6.14.3 Write a Story

Use a similar icon for Accessing stories as for Writing a story, e.g. displaying the book without the pencil. Also, apply the same wording for Writing a story in the sidebar navigation (cf. Figure 29) as in the Mini View (cf. Figure 28).
6.14.4 Write a Message

Replace Write message (Nachricht schreiben) in the Mini View and Message (Nachricht) in the sidebar navigation with Send message (Nachricht senden). Alternatively, move the label of the sidebar navigation into the tooltip help.

![Figure 30: Ambiguous faded labeling within the Mini View](image)

**Figure 30:** Ambiguous faded labeling within the Mini View

6.14.5 View Family

Clicking onto View network (Familie ansehen) within the Radar view should only put the selected family member into the focus, but not switch from the Radar to the Family tree view.

![Figure 32: View Network (Familie ansehen) should not switch between types of View](image)

**Figure 32:** View Network (Familie ansehen) should not switch between types of View

6.14.6 Details

Use the gender icon corresponding to the user's profile.

![Figure 33: Male gender icon within the Profile Screen](image)

**Figure 33:** Male gender icon within the Profile Screen

![Figure 34: Female gender icon within the Mini View](image)

**Figure 34:** Female gender icon within the Mini View

Use a different icon for the Instructions (formerly Navigation) concept within the Welcome Screen than for the Views (Ansichten) in the sidebar navigation.

![Figure 35: Icon for Views (Ansichten) in the sidebar navigation](image1)

![Figure 36: Icon for Navigation within the Welcome Screen](image2)

6.15 Open Issues

Ensure an error-free set-up of siblings, i.e. set up real brothers as such instead of as half-brothers. Possibly, this is a technical bug needing to be fixed.

If connecting to the Profile Screen via the Mini View, the Mini View should remain visible after the Profile Screen will be closed. This consistent behavior should be applied to all pop-up screens.

Currently, adding parents automatically is required for network reasons and to ensure you can add siblings at all. If technically feasible, parent generations should not automatically be generated unless added oneself.

Currently, distant related family members are not displayed in the Family tree view, but in the Radar view. This is due to space restrictions and the number of hops up and down specified in the algorithm. If feasible, include at least those distant relatives that are still alive also in the Family tree view.

Moreover, it is questioned how vast amount of stories of one's relatives can be navigated. Consider to include an automated notification about new stories if not yet available.

If feasible, provide different color schemes to satisfy sufficient color perception for elderly people on the one hand, but also the individual desires for certain favorite colors.

Keep text instructions to a minimum.
7. Conclusions and Future Perspective

The findings from the expert review, diary studies and interviews led to a number of implications for the redesign of the beta version of the ModernFamilies-platform prior to the beginning of the larger EU-wide AGNES project that strives to build a network for the elderly based on this platform integrating ambient technologies. Being additionally illustrated in the accompanying wireframe document including a functional prototype and flowchart, the most important recommendations are summarized below.

**Feedback and performance:** Ensure flawless and smooth performance without interfering parallel running browser applications. Always indicate loading times (e.g. when saving changes) by means of an hourglass and provide a progress bar or similar for loading times exceeding 1 sec., delays longer than 10 sec. should be avoided at all (Saffer, 2007).

**Consistency:** Ensure consistent use of icons, labels and linking. Consistently, distinguish obligatory from optional input fields.

**Management of relatives:** Provide a prominent access to managing one's relatives and relationships. It is suggested that a user profile can only be created by the person itself, except for already deceased ones, to keep the administration effort as minimal as possible. Potential relatives should be possible to be invited directly via e-mail (also mobile phone or a printed invitation) without setting up their profile first.

**Separate version for kids:** For children, a minimized version comprising only the most basic functions to keep in touch with other family members is recommended. Allow for a ludic design and consider 3-dimensional metaphors.

**Unique selling proposition:** Develop a unique selling proposition that distinguishes ModernFamilies.net from other similar platforms and indicate this clearly on the front page.

**Language localization:** Load the front page in the language most suitable to the client's location by identifying the IP-address. Avoid anglicized terms within the German version (e.g. Tutorial).

**Analogue support:** Provide a compact first-steps guide and an option to print out invitations on paper in order to reach out to those that have only little previous to no computer and internet experience.

**Welcome Screen and tutorial:** Apply the expressions Getting started (Erste Schritte) and Introduction (Einführung) on Welcome Screen to make it unambiguous from the Main Page.

**Readability and visibility:** Allow for a minimum font size of 12 pt throughout the entire site and horizontal scrolling to make larger family trees at small screen resolutions visible.

**Help:** Redesign shape and appearance of the current Help module to clearly distinguish it from both, members in the family tree and the Mini View of a family member.

**Tooltip and wording:** Avoid showing database relations in tooltip help and name listings. Instead use the relationship to the next closest person in the family tree and the relatives' real names (first and last name).
It should be noted that the findings and recommendations presented within this paper do not claim to be complete. One reason might be that through the absence of the researcher in diary studies it can not be assured to what extent the object of study has been examined (Carter et al., 2005). Moreover, documenting their answers to questions parallel to testing the application might be exhausting for participants. Carter et al. therefore suggest to have the participants visually capture the moments by means of digital cameras to complement the diary studies. In the long run, a quantitative, statistical inquiry to define the users' personal opinion about colors, look and feel, relevancy of site features etc. with a decent amount of participants is recommended. Also, a follow-up study with participants outside the author's circle of acquaintances for a formal evaluation of the developed ideas based on the wireframes and functional prototype is necessary. According to Kaptelinin (2008), for a representative diary study not more than 10 participants are required, whereas observing 20 participants can elicit far more issues than observing only half as many.

However, some issues might never be solved by traditional usability testing, since the user feels mentally overloaded or just overwhelmed by the vast amount of communication features he is faced with today requiring his full attention.

“Can we really go on living with such a rift, increasingly looking at the world through screens? Must we stay trapped in a kind of submarine, forever doomed to contemplate idyllic worlds through the periscope?” (Violet)

Taking this fact into account, the research and development of so called ambient technologies would present another, more comprehensive way for improving the overall usability of the ModernFamilies-platform. The reason therefore is obvious: ambient technologies or interfaces are characterized as information displays that do not require the full attention of its user, but instead run in the background of his perception, only providing information when necessary to a relevant situation (Mankoff et al., 2003). In doing so, they avoid overloading the user's capacity of processing information.

The current beta version of the ModernFamilies-platform already introduces an opportunity supporting interaction with an ambient device, a smart rabbit developed by the French company Violet. The rabbit, named Nabaztag (cf. Figure 37), operates through a W-LAN connection and transfers information related to the ModernFamilies-platform, such as new incoming e-mail messages and stories, from the virtual world behind the computer screen to the real world, the physical home environment we as human beings live in.

Ambient interfaces, such as the Nabaztag rabbit, not only make use of W-LAN-technology, but also WiFi, Bluetooth, RFID-sensors, and also video cameras (Brewer et al., 2007) that allow devices to seamlessly interact with each other while providing information to its user without overloading him (Ishii et al., 1998; Ishii, 2008). Further, they make use of subtle cues from the environment, such as sound, light, movement, temperature, weather, touch, air flow, shadow, changing forms, color or smell to provide awareness in the background of its user. Moreover, ambient interfaces are able to provide Tangible User Interfaces (TUIs), that allow
for direct manipulation of information through physical objects, with supplementary information from beyond the direct presence of its user.

A sample future scenario showing how the ModernFamilies-platform can be further integrated into an ubiquitous, everyday home environment of the elderly using ambient technology could be imagined as follows: The device the platform is running on is not necessarily a conventional personal computer, but rather an unobtrusive piece of combined technologies situated at a central location within the home environment of the elderly, yet still blending in with the background periphery. Organic interfaces (Vertegaal & Poupyrev, 2008) would allow for an extension of the conventional 2-dimensional screen interface to furniture, walls, and the like. Sophisticated sensors distributed throughout the entire home would increase seamless and natural communication with the ModernFamilies-platform from within any room. In addition to the already existing functions, the ModernFamilies-platform is most notably providing information on the presence and activity status of the elderly living distant from their family members and loved ones. For instance, a GPS-enabled mobile phone could transfer information of the elderly person's approximate current location to the caregiver's platform similar to the *Whereabouts Clock* by Harper et al. (2008), that is either its home or other predefined, frequently visited locations outside the home, such as a grocery store, pharmacy and the like. Also, the ModernFamilies-platform could be connected to wearables such as a wrist watch or garments equipped with biometric sensors (Benyon, Turner & Turner, 2005) to constantly monitor and/or log the elderly person's heart beat, blood pressure and other biomedical characteristics. At the caregiver's location this information could be visualized within a digital photo frame showing the elderly person, as introduced by Consolvo et al. (2005) under the *CareNetDisplay*. By logging these and other relevant, visual information of the day the ModernFamilies-platform could also contribute supporting the memory of the elderlies allowing them to recapitulate certain events in presence of others as referred to by Harper et al. (2008) as life-logging systems. The possibilities are vast and infinite. Aipperspach et al. (2008) also present an interesting, graphical future scenario in their
paper exploring in particular the physical space at home for integration of virtual communities.

However, the development of such ambient interfaces and ubiquitous environments in turn raises a number of new questions, such as how can these novel technologies be best evaluated? Which current methods and practices for evaluation are there? What other challenges and problems are encountered when evaluating and designing for ambient devices and ubiquitous environments?

Usability evaluation of ambient devices is especially challenging, since most usability practitioners and researchers have only little previous experience with ambient interfaces (Mankoff et al., 2003; Consolvo et al., 2005). Besides, there is only limited documentation on what explicit characteristics define an ambient interface as ambient and how these characteristics can be measured.

Some methods that have been applied to evaluating ambient interfaces are ethnography and long-time laboratories resembling people's living spaces (Mankoff et al., 2003), such as the Philips HomeLab in Eindhoven, The Netherlands (Ruyter, 2003). Other established, more time- and cost-saving methods are GOMS and heuristic evaluation, such as Nielsen's heuristics. However, these methods focus on task-oriented applications that again require the user's full attention. Mankoff et al. therefore argue that these standard evaluation methods are not applicable to ambient interfaces.

Thus, they adopted and developed twelve heuristics to be suitable for designing usable and evaluating ambient interfaces which are listed and explained in short below.

**Sufficient information design:** Design the display appropriate to the amount of information.

**Consistent and intuitive mapping:** Keep cognitive load to a minimum through intuitive information display.

**Match between system and real world:** Follow conventional language and concepts instead of technological ones.

**Visibility of state:** Make system states and changing in between them visible.

**Aesthetic and pleasing design:** Consider an aesthetic and pleasant design.

**Useful and relevant information:** Display only relevant information.

**Visibility of system status:** Provide feedback about the system's status within adequate time.

**User control and freedom:** Support undo- and redo-actions.

**Easy transition to more in-depth information:** Make detailed information spreading over multiple levels easy accessible.

**“Peripherality” of display:** Make the interface unobtrusive and allow for easy monitoring when needed.

**Error prevention:** Prevent errors before providing error messages.

**Flexibility and efficiency of use:** Provide personalization and adaption to different user experience levels.

Another method being worth to be adapted to ambient interfaces would be the Expert review which has proven to be successful among usability practitioners for standard interface applications (Mankoff et al., 2003). However, it is not regarded as quite as effective, easy
applicable, time- and cost-saving as heuristic evaluation and again requires the evaluators to
draw back on previous experience with ambient interfaces.

To sum up and representing Saffer's position (2007), both the evaluation of the
ModernFamilies-website as well as of ambient interfaces is always best to take place in
people's, and thus the elderly people's home environment. Rodden et al. (2004) furthermore
conclude that only “placing [the devices to be evaluated] in a number of domestic
environments [allows] for prolonged assessment and continued elaboration”. A decent
alternative to this might be flexible user-experience study environments, such as the
mentioned Philips HomeLab (Ruyter, 2003). In addition to this and for further inspiration, the
interested reader is directed to the project *interLiving*, also funded by the EU, which similar to
the ModernFamilies.net and the AGNES project aims to facilitate generations of family
members living together (Hutchinson et al., 2003).
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References


Appendix

Briefing

ModernFamilies
Date: 2009-04-03
Author: MV

Problem

The ModernFamilies (www.modernfamilies.net) project is a social networking platform for families across all generations. It is part of the larger AGNOM project which strives to interconnect various state-of-the-art technologies to an integral whole to support in particular the elderly suffering from chronic mild cognitive impairment and dementia to retain an autonomous life within their homes as long as possible. ModernFamilies as a social networking platform takes over the task to facilitate communication between these elderly people and their family members living at different sites.

To date, the ModernFamilies platform is technically sophisticated, that is lots of features have been developed and implemented. However, these features are hardly used by any users. Besides, the overall amount of users is very limited (350 users, 2000 profiles) stretching over only a narrow age range. Especially, for the elderly generations the technology itself presents a high entrance barrier.

The reasons for the very low active usage rate might be diverse, however mainly be grounded in the usability of the interface and the interaction flow of the application. Not all steps in the interaction flow might be easy to understand, intuitive and unambiguous. One major known problem is that the users' expectations about building their family tree does not correspond to the implemented behaviour of the application. Moreover, it has not yet been proved which features users find relevant, and which irrelevant, or which might be missing. Also, privacy and trustworthiness seem to be an important issue, such as the look and feel might not be appealing to all generations. Which other issues, problems, and possible barriers are there that prevent users, young people, adults and the elderly, from registering and actively using the platform? That is, how can the performance of the platform be improved to get as many active users as possible?

Suggested procedure

In order to find answers to the problems and questions mentioned above, a user-centered design approach in combination with an expert evaluation is suggested. First, an expert review of the existing prototype application of ModernFamilies to identify issues that could be improved promptly and without major effort will be provided. Afterwards, a usability study to identify major usability barriers will be conducted. One family and close friends belonging to its network will be exposed to using the existing prototype for a week. The intended family and friends involve young people, adults, and elderly ranging from 2 yrs. to 86 yrs., from complete novices to advanced computer users, living at different sites. All family members and friends will be asked to self-report their experiences in journals analog or in digital format. After being exposed, they will be additionally interviewed about the existing prototype application by directed storytelling in regard to functionalities, ease of use, look and feel etc. If necessary, a supplementary interview with another family that has already used the system prior to date will be conducted. As a next step, results will be analyzed and summarized as the most important issues that could lead to a major improvement of the existing prototype, and possibly to new approaches. Based on the findings from the expert review and family interviews a functional

Figure 38: Briefing document
prototype will be designed. Moreover, possibilities of how the ModernFamilies application could be seamlessly integrated into people's everyday environment, especially those of the elderly for lowering the entrance barrier and providing more natural forms of interaction, will be explored, taking advantage of the fact that a sample prototype demonstrating interaction with ambient devices already exists on part of ModernFamilies. The steps in short include:

1. Export review
2. Usability study (self-reporting and interviews)
3. Analysis, evaluation and summarization of findings
4. Design of a functional prototype based on the findings
5. Exploration of novel interaction modalities to facilitate integration into everyday environment
6. Finalizing written report

**Technical constraints**

The existing ModernFamilies prototype is mainly based on AJAX and the open source flash server technology Redis as backend. Due to high server storage costs the server's space is currently limited. Large data, such as home videos, could evoke a storage problem as the number of users increases.

**Expected timetable**

Week 14 – 23, 2009

(Subject to change)

Week 14 – 15:
- Expert review
- Communicating findings from expert review to ModernFamilies
- Preparation of usability study (acquiring family members and friends, formulating instructions, preparing interview material and scheduling interviews)

Week 15 – 16:
- Exposing family members and friends to ModernFamilies

Week 16 – 17:
- Conducting interviews
- Analysis, evaluation, and summarization of findings

Week 18 – 20:
- Prototype design

Week 21 – 23:
- Exploration of novel interaction modalities and finalizing written report
Deliverables
Deliverables include a written report documenting the procedure, intermediate findings, and design recommendations, as well as the prototype material.

Detailed project goals
Improve the social family network platform of ModernFamilies by:

- In the long run, increasing the number of users (currently 350 users, 2000 profiles) across all generations, that is young people, adults, and the elderly; also invitation rates, successfully accepted invitations, usage rates
- In the long run, increasing the overall ease of use for all generations (compared to?)
- Identifying usability barriers and halting interaction flows, plus providing suggestions for improvement
- Improving the feature for building one's own family tree
- Determining an overall site look and feel suitable for all generations (modes for adjustment)
- Determining privacy flaws
- Determining relevant, irrelevant, and missing features
- Providing an understandable, non-technological terminology
- Identifying alternative modes of interaction and how those could be integrated into the elderly's environment

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Office: +43 720 515666
Skype: andkfreiner
Email: ofice@modernfamilies.net

Marleen van Hauer (MV), Umeå University
Skype: marleenvanhauer
Email: marleenvanhauer@gmail.com

John Watsworth, Umeå University (UmeU)
Email: jwworth@informatik.umu.se
Tagebuch (6-10 Jährige)
ModernFamilies

Bevor es losgeht
Eltern, bitte zuerst auf www.modernfamilies.net registrieren. Entweder eigene E-Mail-Adresse oder folgende verwenden:

meine adresse2@gmail.com

(E-Mails können dann über http://mail.google.com mit dem Passwort nilpferd abgerufen werden).


Los geht's!
Wie alt bist du?
__ Jahre

Hast du schon mal einen Computer benutzt?
__ Ja, klar.
__ Nein, noch nie.

Wenn du schon mal einen Computer benutzt hast:

Hast du einen Computer bei dir zuhause?
__ Ja
__ Nein

Ist dies dein eigener Computer?
__ Ja
__ Nein

Wie oft benutzt du einen Computer?
__ Mal pro Tag/Woche/Monat/Jahr

Welche Sachen vom Computer benutzt du?
__ Maus mit Scrollrad
__ Maus ohne Scrollrad
__ Linke/rechte Maustaste
__ Tastatur
__ Andere: ______

Figure 39: Diary Template for Children (Aged 6-10 yrs.)
Welche Sachen machst du gewöhnlicherweise mit dem Computer?

Das Kind jetzt ein bisschen am Computer ausprobieren lassen.
Werden Maus und Tastatur benutzt? Wenn ja, wie?
Verhalten des Kindes:

Was weißt du schon über den Computer? Was kannst du schon allein?
Antwort/Verhalten des Kindes:

Was weißt du schon über das Internet? Was kannst du schon allein?
Antwort/Verhalten des Kindes:


Schau dich mal um und probier ein wenig aus auf der Webseite!
Verhalten des Kindes:
Was kannst du hier alles machen?
Antwort/Verhalten des Kindes:

Versuche nun etwas, was dich besonders interessiert.
Verhalten des Kindes:

Du
Wie solltest du auf dem Bildschirm dargestellt/angezeigt werden? (z.B. Figur, Strichmännchen, Gesicht, Foto, Name etc.)
Antwort/Verhalten des Kindes:

Wo kannst du Informationen über dich erfahren?
Antwort/Verhalten des Kindes:

Meine Familie
Wie sollte deine Familie, also deine Eltern, Geschwister usw. dargestellt/angezeigt werden? (z.B. neben dir, um dich drumherum, in verschiedenen Häusern etc.)
Antwort des Kindes:
Weiβt du, was ein Familienstammbaum ist? Wenn ja, wie kannst du deinen eigenen bauen? 
Antwort/Verhalten des Kindes:

Wenn du Lust hast, darfst du jetzt oder in den nächsten Tagen auch noch andere Dinge ausprobieren, die dich interessieren.

Am Ende der Woche:

Was hast du noch alles ausprobiert?

<table>
<thead>
<tr>
<th>Welche?</th>
<th>Eigene Vorgehensweise/Gedanken/Probleme:</th>
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</table>
Was kann man mit der Webseite machen?
Antwort/Verhalten des Kindes:

Was hat dir an der Webseite gefallen?

Was hat dir nicht so gut gefallen?

Wie findest du das Aussehen der Webseite (Farben, Formen usw.)? Welche Farben usw. fändest du besser?

Welche Begriffe u. Bezeichnungen verstehst du nicht?
Welche Spiele/Games interessieren dich/würden dich noch interessieren?

- Puzzle
- Tetris
- Vier Gewinnt
- Christbaum-Spiel
- Schach
- Andere: __________

Stell’ dir vor, die Webseite kann zaubern. Was würdest du dir von ihr wünschen?

Was möchtest du sonst noch unbedingt sagen?

Vielen Dank für’s Mitmachen!
Hinweise

Diese Befragung/dieser Test ist Teil einer Forschungsstudie der Universität Umeå in Schweden. Es geht um die Webseite www.modernfamilies.net.

Sie soll Familien (Kindern, Erwachsenen und älteren Menschen) helfen, die weiter entfernt voneinander wohnen, leichter miteinander in Kontakt zu bleiben.

Bitte die Webseite ca. 1 Woche (im Zeitraum vom 8.4. - 14.4.) selber ausprobieren (siehe nachfolgende Anleitung).

Bitte die unterstehenden Fragen beantworten sowie eigene Vorgehensweise, Gedanken, Probleme etc. wie in einem Tagebuch in dem dafür vorhergesehen Platz notieren.

Bitte daran denken, daß die Webseite getestet wird, nicht du selbst. Es gibt also keine richtigen oder falschen Antworten.

Zwischen dem 15.4.-21.4. ist eine kurze Abschlußauswertung per Telefon geplant (Die Teilnahme hierfür ist freiwillig).

Alle persönlichen Daten werden vertraulich behandelt. Daher bitte alle Informationen über diesen Test ebenso vertraulich behandeln.

Die ausfüllten Fragen und Tagebuchnotizen bitte entweder per E-Mail an marleenvanhauer@gmail.com oder per Post zurücksenden an: Marleen Vanhauer, Nygatan 67, 90331 Umeå, Schweden.

Vielen Dank für's Mitmachen!

Figure 40: Instructions and diary template for adults (all ages, novice and experienced users)
Demografische Daten

Name:
Geschlecht:
Alter:
Muttersprache:
Wohnort u. -land:
Gewünschter Tag und Uhrzeit für Abschlußauswertung:
Telefon-Nr. für Abschlußauswertung:

Technikaffinität und Computernutzung

Wie stuft du dein Interesse an modernen Technologien ein, wie z.B. das Internet, mp3-Player, Mobiltelefone etc.?

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<tr>
<th>1</th>
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<th>4</th>
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<tbody>
<tr>
<td>Gar nicht interessant</td>
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<td>Sehr interessant</td>
</tr>
</tbody>
</table>

Hast du einen eigenen Computer bei dir zuhause?
__ Ja
__ Nein

Seit wieviel Jahren nutzt du Computer?

Wofür nutzt du Computer hauptsächlich?
__ E-Mail
__ Internet-Recherche/Surfen
__ Soziale Netzwerke (z.B. Facebook, meinVZ, mySpace)
__ Nachrichten lesen
__ Einkaufen über das Internet
__ Internet Banking
__ Blogs schreiben
__ Erstellen u. Bearbeiten von Texten/Tabellen
__ Fotos bearbeiten
__ Telefonieren über das Internet (z.B. Skype)
__ Chatten
__ Spiele
__ Anderes, und zwar: __________

1 Angabe freiwillig
2 Angabe freiwillig
ModernFamilies - Tagebuch Erwachsene

Welche Internet-Verbindung hast du bei dir zuhause?
___ Breitbandverbindung (DSL/Kabel-Modem)
___ Analog Verbindung über Modem
___ ISDN
___ Verbindung über Handy/UMTS/GPRS etc.
___ Keine

Wie häufig rufst du im Durchschnitt deine E-Mails ab?
_________ Mal(e) pro __________ (z.B. Tag/Woche/Monat/Jahr)

Tagebuchnotizen
Bitte den Ton bzw. die Lautsprecher am Computer anschalten.

Registrieren
Bitte registriere dich auf der Webseite www.modernfamilies.net.


Eigene Vorgehensweise/Gedanken/Probleme:

Anmelden
Bitte melde dich mit deiner gewählten E-Mail Adresse an.
Eigene Vorgehensweise/Gedanken/Probleme:

Eigenes Nutzer-Profil
Wie kannst du dein Nutzer-Profil vervollständigen?
Eigene Vorgehensweise/Gedanken/Probleme:
Familienmitglieder/Freunde hinzufügen
Wie kannst du Familienmitglieder/Freunde hinzufügen?
Eigene Vorgehensweise/Gedanken/Probleme:

Einladen
Wie kannst du Familienmitglieder/Freunde einladen, dem modernFamilies-Netzwerk beizutreten?
Eigene Vorgehensweise/Gedanken/Probleme:

Familienstammbaum
Wie kannst du deinen Familienstammbaum ansehen?
Eigene Vorgehensweise/Gedanken/Probleme:

Bitte probiere jetzt oder in den nächsten Tagen auch noch andere Dinge aus, die dich interessieren.

Am Ende der Woche:
Welche Dinge hast du noch alles ausprobiert?

<table>
<thead>
<tr>
<th>Welche?</th>
<th>Eigene Vorgehensweise/Gedanken/Probleme:</th>
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<tr>
<td>Welche?</td>
<td>Eigene Vorgehensweise/Gedanken/Probleme:</td>
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Wie findest du die Idee/das Konzept von der ModernFamilies-Website?

Wie findest du das Erscheinungsbild (Farben, Formen, Layout, Design usw.) der modernFamilies-Website? Was fandest du besser?

Welche Begriffe u. Bezeichnungen verstehst du nicht?

Wie vertrauenswürdig stufst du die modernFamilies-Website ein?

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<td>Weiß nicht</td>
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Warum?

Welche Spiele/Games interessieren dich/würden dich noch interessieren?

- Puzzle
- Tetris
- Vier Gewinnt
- Christbaum-Spiel
- Schach
- Anderes:     

### Wie interessant oder uninteressant findest du folgende Dinge und Funktionen? Ggf. bitte begründen. (Bitte Antwort **Fett** markieren, ankreuzen oder ähnliches)

<table>
<thead>
<tr>
<th>Familiestammbaum-Ansicht</th>
<th>1</th>
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<tr>
<td>1 Gar nicht interessant</td>
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<th>Netzwerk-Ansicht</th>
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**Warum?**

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<tr>
<th>Leberstationen von Personen mit persönl. Geschichten auf der Landkarte anzeigen</th>
<th>1</th>
<th>2</th>
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**Warum?**

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<th>SMS an andere modernFamilies-Mitglieder schicken</th>
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**Warum?**
E-Mails/Nachrichten an andere modernFamilies-Mitglieder schicken

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<th>1 Gar nicht interessant</th>
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<th>6</th>
<th>7 Sehr interessant</th>
<th>0 Weiß nicht, was das ist.</th>
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Warum?

modernFamilies-Nachrichten über das Telefon empfangen

<table>
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<th>1 Gar nicht interessant</th>
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<th>7 Sehr interessant</th>
<th>0 Weiß nicht, was das ist.</th>
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Warum?

Landkarten-Ansicht

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<tr>
<th>1 Gar nicht interessant</th>
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<th>7 Sehr interessant</th>
<th>0 Weiß nicht, was das ist.</th>
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Warum?

Netzwerk-Neuigkeiten (Anzeige neuer Beiträge von anderen Familienmitgliedern)

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<th>1 Gar nicht interessant</th>
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<th>0 Weiß nicht, was das ist.</th>
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Warum?
### Spiele/Games

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### Fotoalben

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Warum?

### Videos hochladen u. Bearbeiten

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Warum?

### Familienmitglieder/Freunde als Kontakte hinzufügen

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Warum?
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<td>Familienmitglieder/Freunde einladen, dem modernFamilies-Netzwerk beizutreten</td>
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<td>Eigene Familienstammbäume bauen</td>
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<td>Andere vom modernFamilies-Netzwerk auf dem Telefon anrufen</td>
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<td>Persönliche Geschichten mit anderen teilen</td>
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53
<table>
<thead>
<tr>
<th>Persönl. Geschichten lesen</th>
<th>1 Gar nicht interessant</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7 Sehr interessant</th>
<th>0 Weiß nicht, was das ist</th>
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<td>Warum?</td>
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<table>
<thead>
<tr>
<th>Persönl. Geschichten schreiben</th>
<th>1 Gar nicht interessant</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7 Sehr interessant</th>
<th>0 Weiß nicht, was das ist</th>
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<tr>
<td>Warum?</td>
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<table>
<thead>
<tr>
<th>Bloggen</th>
<th>1 Gar nicht interessant</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7 Sehr interessant</th>
<th>0 Weiß nicht, was das ist</th>
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<th>4</th>
<th>5</th>
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<td>Weiß nicht, was das ist.</td>
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</tbody>
</table>

**Warum?**

**Welche Dinge oder Funktionen hast du vermisst?**

**Sonstige Kommentare**