



Project FoSIBLE
Fostering Social Interactions for a Better Life of the Elderly



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1. Design Process: The Strategy

We can find excellent ergonomic guidelines to support the design of interfaces for the elderly and to help developers in building applications for interactive television (Carmichael, 1999), (Disckinson et al., 2007). The use of these guides provides a real added value in terms of accessibility, however it does not reflect the functional needs of the future users and it is not focused on sharing and collaboration among different stakeholders. Thus, designers do not have any tool allowing them to focus on the social aspects of interactive television applications, even if there is recent research that attempts to provide answers to this issue, including (Geerts, 2009), who introduced heuristics to support the social practices through interactive television services. It is essential for our research to have effective methods to interact with elderly end-users and to collect data on their needs concerning relationships.

As stated in D2.1, our suggested approach is participative by early focusing on the end-users, using methods from the User Centred Design field:

1. Firstly, we used semi-directed interviews at the home of the elderly people to understand their daily practices, how do they live, what are their actual interaction and communication modes and exploring in what areas of their life digital technology bring a meaningful contribution. Then, we focused on their needs in terms of information and communication, taking into account their abilities to interact with specific devices and technologies.
2. These interviews permitted us to create a set of personas (Cooper, 2004) describing attributes of the users and allowing us to keep in mind the elderly needs during the development process.
3. The personas were used to create scenarios describing how potential end-users will use or may use the services.
4. Mockups illustrating scenarios were then used to help in collecting feedback and foster communication between designers (ourselves) and the developers. Mockups were iteratively enriched and evaluated during focus group sessions. The objective was to collect data on how users perceive the system, and therefore to obtain their feedbacks, initial reactions to the design and to examine their preferences.

The establishment of an integrated design approach taking into account the needs of elderly and exploring the social dimension of TV allows to determinate how television technology can become a resource for the sociability among older people.

The first step of this design process (interviews) is described in details in D2.1. In this deliverable, we are focusing on the next steps, leading us to define functional requirements of the FoSIBLE system.

2. Personas Method and Definitions in Austria, France, and Germany

2.1 Personas Method

A Persona is an artefact that consists of a narrative relating to a desired user or customer's daily behaviour patterns, using specific details, not generalities. Personas, as pretended users, have names and faces to make them more real. They are carefully described in terms of needs, goals and tasks. During the design process, the design team tries to satisfy the persona's needs and goals. For (Pruitt and Adlin, 2005) until the user is precisely defined, designers can always imagine that they are the users. However, a completely defined user persona is a key to the suppression of any tendency for the developer to usurp or distort the user persona's role. The persona must be a concrete individual in every one's mind.

Alan Cooper (Cooper, 1999) - "inventor" of the personas-method describes it like this:

"Personas are not real people, but they represent them throughout the design process. They are hypothetical archetypes of actual users. Although they are imaginary, they are defined with significant rigor and precision."

In general, personas show the scope and nature of the design problem. Until "the user" is precisely defined, we can always imagine that we ourselves are the users (Pruitt and Adlin, 2005). We have different pictures in mind which hinder fluent communication (Figure 1).



Figure 1. Designers having different pictures of the users in mind.

Personas as communication tool allow defining which users we are building for and synchronize the pictures in our minds (Figure 2).



Figure 2. By the use of a persona, designers have the same picture of the user in their mind.

A lot of companies, Microsoft (Pruitt and Grudin, 2003), Ford, Chrysler, Sovereign Bank, Amazon, Best Buy, Staples, FedEx, UPS, IBM, SAP, SONY, Razorfish, Pfaltzgraff, Yahoo! Media, Electrolux, Cisco (Nieters et al., 2007) use personas successfully because of their advantages, which are:

1. Support having the **same picture** of our end-users in mind for everybody in the project; hence reduce communication-complexity which makes communication easier and more fluent (this again saves time explaining “the user” every time he/she appears in a communication process).
2. Bias the minds of everybody in the project towards **user-centred thinking**. This gives the otherwise “technical touch” of R&D projects a human touch and brings things to life in a natural way (as human minds deal great with other persons – but human minds have a hard time when dealing with abstract big bunches of data) – personas make use of the “Emotional Mind” of people (Shyba and Tam, 2005).
3. Be an **evaluation tool** as walkthroughs can be conducted with personas (which are very handy to judge design alternatives).
4. **Leave** the world of **possibility thinking** as you never fall back to “the user”.
5. Can **shorten feature debates** which saves time.
6. Can help the whole project team to **focus on the needs** of the target **users** instead of using a different ad hoc “the user” definition which comes to mind at a point in time (Humans have just one locus of attention. It lies in the nature of R&D that the developers’ locus of attention is focused on the technical issues and not the real end-users. Therefore there is a need for methods solving this missing focus on the end-user. Personas are one way to do it).
7. Unobtrusive - they do not modify any existing process and unfold their power subtly in the minds of people; they make thinking about “the user” **more convenient**.
8. Unlike bunches of data, personas support **informed design** (you can design UIs for personas – not for data representations).

9. According to Cooper (Cooper, 1999), the design process becomes „**enlightened**”.

After defining the personas, the next step is to evaluate and iterate the personas (McGinn and Kotamraju, 2008) with the help of the consortium partners.

The basic requirements from the consortium partners by now are:

1. **Instead** of talking about “**the user**” (e.g. scenarios, discussions, descriptions...) one fitting **persona name** (if two personas fit just decide for one which fits better) should be chosen.
2. The **persona representations** (delivered by CURE initially and developed in each country) should be **present** in the development team (e.g. by pinning their descriptions on the walls of the development room).

Based on the information we collected when interviewing the elderly, we created primary and secondary personas for the three countries (France, Germany and Austria). These personas are the link between designers (ourselves), developers and end-users. Two primary personas were created for each participating country of the project.

2.1 Personas Definition – Austria

2.1.1 Helga Rettenbacher (66 years, female)

“I don’t want any problems with my computer”

Description	Helga is 66 years old and still active. She lives in the city in a flat with her husband and enjoys short trips to the countryside and other cities. She retired 8 years ago, after working for 23 years as an assistant in a notary’s office.
Social Situation	Helga has frequent contact with her friends and still meets with one former college once a week. She also has one neighbour she regularly invites for a coffee. Her children (two sons aged 40 and 41, and a daughter aged 43) visit her about once per month. She’s attending an English conversation club to not forget her English skills. The club is very informal and the members enjoy the relaxed atmosphere.
Health Situation	Helga has no major health problems.
Financial Situation	In her last job her salary was situated in the upper middle class and she now has enough money to live in a comfortable flat in the city. She and her husband also have a car and a small house in the countryside.
Technological Knowledge and Usage of Technology	In her job she was using technologies like electronic typewriters, telefax and copy machines. In the last years of her work she got introduced to PCs but she never mastered them very good. She now has a computer at home, which she uses once a week to check her e-mail or to look up some information on the internet. Although she uses the computer independently, she needs help from her youngest son as soon as there is a problem. She also has a mobile phone, which she uses infrequently. Recently her children bought her a digital photo camera, which she likes, but she prefers to go to the shop to develop the pictures instead of watching them on the computer.
Web usage	She regularly uses e-mail and search engines to look for information.
Negative Experiences	Once she accidentally deleted all her pictures on her computer, but her son could restore the data. She gets annoyed by spam e-mails.
Wish List	Helga wants to have a computer that is easy to use and doesn’t make any problems.
Additional	Currently her computer is in a small secondary room,

Information because she doesn't want to have it in her living room. She doesn't like its appearance and the space it takes away. Helga is an old school friend of Theresia Gruber.

2.1.2 Theresia Gruber (65 years, female)

"I need somebody to talk to"

Description Theresia is 65 years old and lives with her husband Peter (69 years) in a house in a small town near Vienna. She and Peter enjoy their retirement by going on excursions with neighbours. They also have a dog they walk every day. Before retirement 7 years ago she worked as a shop assistant in a fashion boutique.

Social Situation Theresia has four children, three sons (35, 39 and 40 years) and a daughter (37 years). They all live and work in bigger cities and visit her about once per month. Theresia and Peter used to live in Vienna until they retired, so many of their friends are still there. They talk a lot to them on the phone, and sometimes they drive to Vienna to visit a museum or go to the theatre.

Health Situation Theresia is still in good shape, although her eyesight has decreased recently.

Financial Situation Theresia and her husband used the money they got from selling their city flat to buy a house on the countryside. They don't have many savings, but can live with their combined pensions.

Technological Knowledge and Usage of Technology Theresia feels ambivalent towards technology. She never had to use a computer in her job, but her husband bought a computer recently and sometimes shows her things on the Internet. Other than her husband, who regularly writes e-mails, she only uses the land line phone to communicate with others. She does have a mobile phone, but only uses it infrequent.

Web usage She only uses the Web together with her husband. While she likes to watch him browsing, she never tried it herself, because she is afraid she might break something.

Negative Experiences Theresia is somehow afraid of complex technology. Sometimes she envies her husband, because he is writing e-mails with their daughter, but she is depending on him to show her the messages.

Wish List Theresia wants personal guidance and introduction to any

technological novelty. Due to her decreasing eyesight, she needs large operational controls.

**Additional
Information**

Patience is not one of Theresia's strengths. If things are new, you need to explain them a couple of times. She gets easily distracted. Theresia is an old school friend of Helga Gruber.

2.1 Personas Definition – France

2.1.3 Madeleine Dufour (75 years, female)

“Independent and active”

Description	Madeleine is 75 years old and still lives independently in a house in a small town. Although she has lost most of her friends and also her husband she doesn't feel isolated. Until her retirement 20 years ago she worked part-time as a secretary in the local commune. She had frequent contact with many different people in her position as administrative staff.
Social Situation	Today, many of her former friends and work colleges have died. She keeps contact with the remaining friends and her family through telephone. Visits aren't that regular, since both her two sons (aged 50 and 52) have moved to another, bigger city. She never had a driving licence, but uses public transport to visit her sons once every month. She takes part in a bridge club once per week. From time to time she takes part in organised activities (e.g. excursions) of a local organisation for the elderly, but she never became friends with the other participants.
Health Situation	Madeleine still feels independent, but her legs make it more and more difficult to walk the road to the train station to visit her sons. Recently she had to give up the gardening work she loved. Her neighbour is now caring for her garden.
Financial Situation	Madeleine receives a small pension. After her husband died, she is on her own, but can manage her daily expenses pretty well. Before her retirement, her salary was situated in the lower middle class.
Technological Knowledge and Usage of Technology	Madeleine recently got a mobile phone from her sons, which she uses fairly regular. She now can call her sons while on the way and inform them about delays or decide on a meeting place. She also uses it to call her friends to chat or to make appointments with her doctor. In addition to that she has a computer at home, but she never uses it alone. Her grand-children use it from time to time when they come to visit her. She even has an email address, but needs the help of her children to check for mail. She has a new HD TV, but finds the two remotes (one for the TV and one for the decoder) complicated.
Web usage	Sometimes her grand-children or her sons show her things on the web, mostly about travel destinations and local services. She is fascinated by the amount of information you

have access to, but to use it herself she is too anxious.

- Negative Experiences** Madeleine once had a virus on her computer and her neighbour had to format the whole computer. She is now afraid she doesn't know what to do when using the computer or accidentally break something.
- Wish List** Her sons recently showed her Skype to have video call, but she can't handle the software herself. She would love to talk to her sons and being able to see them. She also would like to be able to search for nice places to do an excursion herself.
- Additional Information** Madeleine does not reject technology in general, as long as it can help her to stay in contact with friends and family, but it needs to be simple, because she has no computer knowledge.

2.3.2 Francois Dupond (81 years, male)

"A poem can make you feel better"

- Description** François is a 81 years old widower who lives independently in his flat in the centre of a small city (100 000 inhabitants). He retired 21 years ago from the textile industry. He was an accountant. After his wife died 2 years ago, François feels alone and isolated but he does not want to move in an old people's home. He is scared of losing contact with his two children (Robert and Françoise) who live hundreds of miles away and used to visit him to check if he feels ok.
- Social Situation** The life of François was totally dedicated to his wife, as she was suffering from Alzheimer's disease. François was very active in a group of spouses who were caregivers. After his wife died, François was then facing a difficult situation because he had to change completely his journeys. Now, he has found other occupations: he loves writing poems, painting, reading books, doing cross words. He would like to share his poems with others.
Once a month his two children come to spend a weekend. He loves his grandchildren so much. He calls them often. François's best friend Pierre comes to visit him once a week to speak about poetry.
- Health Situation** François suffers from his rheumatoid. It becomes more and more difficult for him to walk but he is still independent. He does not like to ask for help to do things that he was used to do. But recently he had to give up many of them like

tinkering because of the pain he feels on his hands.

Financial Situation

François receives a good pension.

Technological Knowledge and Usage of Technology

François got recently a PC from his daughter with an internet access. She wanted him to write his poem on the PC to be able to share them. His grandchildren showed him how to use Skype to connect with them when they are using the computer. But for François this is still complicated, especially when he receives e-mails. What he prefers is sending his poems to his best friend Pierre.

Web usage

François mainly sends emails with poems to family and Pierre. He also sends e-mails and electronic postal cards for celebrations.

Negative Experiences

He received once a message for an upgrade and when he clicked on "OK" he was not able to use the computer again. Fortunately, his son helped him on the phone. Since that he does not accept any upgrades.

Wish List

He would like to share his passion for writing poems with other persons on the internet but he does not know how to do that. He would also like to participate to "café-philo" sessions online. He also would like to subscribe to computer courses.

Additional Information

François feels less lonely since he has discovered the Internet. He is very happy that he can reach his grandchildren easily. He is ready to do more efforts to learn more about computers.

2.2 Personas Definition – Germany

2.2.1 Karl-Heinz Schöps (79 years, male)

“What do I need that for”

Description	Karl-Heinz is 79 years old and is living with his wife in a flat in Siegen. He worked as a salesman before he retired 14 years ago. He used to be very mobile and therefore tries to stay independent as long as possible. He doesn't want to move in an old people's home. He is still driving his car and mostly uses it to go to the countryside. There he enjoys walking in nature with his wife or with old friends.
Social Situation	Karl-Heinz and his wife get regular visits from their children. They have 2 daughters, aged 49 and 56, and a son aged 57. Their grandchildren visit them from time to time with the grand-grandchildren. Some of Karl-Heinz's friends have already died. The ones that are left join him for a walk on the countryside or play cards at his place. Otherwise he also enjoys reading books alone.
Health Situation	Due to his age, Karl-Heinz, has slight problems with sight and hearing. While he had to give up bicycling he is still able to go for walks in the countryside. Recently he got problems with his right hip.
Financial Situation	Before his retirement Karl-Heinz's salary was situated in the middle class. Since he is very cost-conscious he was able to save a fair amount of money, although his wife was never working. His pension is enough to live and to have some extra money to support the grand-children.
Technological Knowledge and Usage of Technology	Karl-Heinz is not interested in technology. He has never used a computer and does not see any value in it. He uses a fixed-line phone at home to make appointments with friends or family, but he tries to keep the conversations as short as possible. He prefers to talk face-to-face. In the flat they have a TV in the living room. He recently had to buy a new HD flat screen, since the old one was broken. He has his difficulties with the remote control. He likes the bigger image of the new TV, but only watches TV for the news.
Web usage	Karl-Heinz does not use the web or e-mail. His grand-children try to convince him to buy a computer with internet access, but he thinks it's too complicated for him.
Negative Experiences	While not having experienced anything negative with a computer or the internet, he hears some stories of identity theft and all too open sharing of private data on the internet

in the media. He is worried about his grand-grand-children playing too many games on the computer and not going outside. He saw in the news that there were kids running amok after playing computer games.

Wish List

Karl-Heinz wants to live independently as long as possible. He wants to keep contact with his friends and family.

Additional Information

Karl-Heinz knows about his physical state, but tries to cover it up not to worry his children.

2.2.2 Viktor Braun (75 years, male)

“Active in old age”

Description

Viktor Braun is 75 years old and is living with her wife in Siegen. He was a sportsman, particularly active in football in his youth. He also worked as a trainer in a local club and was private fitness gym owner. He enjoys walking in nature and chat with old friends.

Social Situation

Viktor and his wife have regular visits from their children. They have 2 daughters. Their grandchildren visit them from time to time. Some of Karl-Heinz’s friends have already died, but he has some very good friends in the neighbourhood. He sometimes gets out of the house and enjoys walking and reminding about past times with his friends.

Health Situation

Due to his age, Viktor has some problems with knees. He cannot stand for too much time. He is still able to go for walks. Recently he got problems with vision and hearing. While watching TV, he turns up the volume many times above the average hearing level.

Financial Situation

Viktor belongs to the middle class. His pension is enough to live and to have some extra money to support the grandchildren.

Technological Knowledge and Usage of Technology

Viktor is interested in technology, especially those that relate to physical exercising or staying in contact with friends. He tried to use computer together with their grandchildren, but never stick to it for full purpose benefit. He likes to use fixed-line phone at home to make appointments with friends or family. He likes also to talk face-to-face. He has TV in the living room and has some difficulties with the remote control. He likes the bigger image of the new TV, and even more a higher level of sound.

Web usage	Viktor tried to use Internet, but only together with his grandchildren during visits. He is mostly interested in sport news, football, and physical exercises.
Negative Experiences	Due to limited use of Internet, Viktor doesn't have negative experience.
Wish List	Viktor has still interest in sports, and during morning is exercising slightly in bed. He has also few neighbours with whom he shares interest on sport events and games.
Additional Information	Viktor and Karl-Heinz are neighbours and they know each other for 30 years.

These personas are used in consolidated scenarios which will mainly focus on topics of interest identified by the FoSIBLE consortium.

3. Scenarios

Scenarios are used for describing how the personas can use the defined services. They allow rapid communication on the potential uses and needs and especially about the technical feasibility. We have also presented scenarios to end-users to enrich and refine scenarios iteratively during the development process.

We describe below our first versions of the scenarios, followed by a consolidated version, based on discussions with the end-users (on pertinence) and the technical partners (Kaasa and AIT here) on feasibility.

3.1 Scenario 1 [Tags: awareness, sharing things together]

Awareness

Theresia is 65 years old and lives with her husband Peter (69 years) in a house in a small town near Vienna. They have a dog with which they walk every day. Before her retirement 7 years ago she worked as a shop assistant in a fashion boutique.

Theresia's four children all live and work in bigger cities and visit her about once per month. Theresia and Peter used to live in Vienna until they retired, so many of their friends are still there. They talk a lot to them on the phone, and sometimes they drive to Vienna to visit a museum or go to the theatre. Although all her neighbours are nice to her, she hasn't yet made a lot of close friends. When Theresia is at home, she sometimes misses the feeling she had in Vienna, when there was always someone around to talk to. She and her neighbour Helga, who lived next door for many years, used to leave messages or small presents at the door from time to time, to remind one of the other. Recently she and Helga got a new device that is connected to their TV and allows them to talk to each other. Furthermore, and more important to them, it allows them to continue with an old tradition: They now can leave messages on the TV screen of the other person. These messages can be of different type: They can be type-written, hand-written, spoken or some images or even video messages. Theresia always needs to smile when she comes home and finds a message from Helga on her screen. It shows her, that Helga is still thinking of her.

If Theresia wants it Helga automatically gets a notice if she is present in front of her TV set or in the living room. If configured so the device will automatically trigger a call if both are present in the room. So they never miss an occasion to communicate with each other.

Theresia likes the sense of connectedness she gets, when she knows what people are important to her during the day.

Sharing Things Together

Helga is 66 years old and still active. She lives in the city in a flat with her husband and enjoys short trips to the countryside and other cities. She retired 8 years ago, after working for 23 years as an assistant in a notary's office.

Helga has frequent contact with her friends and still meets with one former colleague once a week. She's attending an English conversation club to not forget her English skills. The club is very informal and the members enjoy the relaxed atmosphere.

Helga also has the new special set connected to her TV. With it, Helga can not only send little messages to her friends and family, but also share items of common interest. For example, she can share tips on interesting books with the other members of her English conversation club. They all can also write book reviews and share it with everybody involved. With Theresia, she regularly shares recipes about dishes she likes to cook. Any content can be shared in different manners.

The device automatically turns on whenever Helga sits in her chair in front of her TV set. A welcome screen appears with a menu that lets her select the main functions via intuitive arm gestures. To help her with the operation the device can be controlled via gestures. Turning the pages of a book for example is easy with a few simple arm-movements.

3.2 Scenario 2 [Tags: museum visits, round table discussions]

Madeleine is 75 years old and she still lives independent in a house in a small town. Until her retirement 20 years ago she worked part-time as a secretary in the local commune. She had frequent contact with many different people in her position as administrative staff. Although her husband died and the fact that she lost contact with her work colleagues she does not feel so isolated.

Madeleine is a very independent and active person. She goes every morning to the city centre for shopping. She likes helping people by doing volunteer work at the local parish, taking part in a bridge club once per week and attending philharmonic concerts, but recently her legs make it more and more difficult to walk and she had to give up some of these activities and also the gardening work that she loved. Her neighbour is now caring for her garden and doing shopping for her.

What Madeleine preferred was to participate in collective activities organized by a local association for elderly: Roundtable discussions organized by a psychologist, philosophy-coffee - a debate around a theme that aims to establishing a philosophical exchange in which everyone can speak, theatre, and annually travel. Unfortunately, since this year, due to financial restrictions, all of these activities are no more organized. This change

affects Madeleine and all her friends from the association and as a result, they do not see each other so often anymore.

Madeleine recently received from the city (as a part of a local project) a television set with special features that permits her to participate with other persons who are in old people's home in group activities. Virtual guided tours on this special TV for cities and museums can be organised and also collective discussions.

Round-table discussions

As Madeleine and her friends liked so much the round-table discussions organised by the local association, they decided to organise them on the TV among all the former members of the association. The only thing is that the round-table discussions were organised by a psychologist and they do not have any idea on how to fix the discussion theme or who will animate the debate. To define interesting themes for everyone they decide to let everyone propose a theme, and all the themes will be treated one by one. Also, persons who want to animate the debate for a theme can put its name beside.

After that the date, the theme of the debate and the animator are fixed, every participant receives an alert on her/his TV screen 15 minutes before the meeting starts to remind her/him that the round table discussion that she/he was interested in will start soon.

When the meeting begins, a 3D environment with a round table is displayed on the TV screen. All the participants are represented around the table by 3D avatars or their photos (as they prefer) with their names or pseudo. For this first round-table discussion, Madeleine is the animator and the theme is 'the television'. Madeleine starts to explain the theme and the objectives of the round-table discussion (based on her last experiences in the local association), she defines also the points to discuss which every participant can access on her/his TV screen from the "round-table plan" rubric. The participants can use a white board if they want to explain something by writing or drawing.

Madeleine and her friends enjoy the discussion and speak about this new special television and how they expect to use it in the future. For their next round-table they decided to invite persons from old people's home that have more experience with this system to share experiences.

3.3 Scenario 3 [Tags: gaming, physical activity, intergeneration, awareness]

Viktor has been using the FoSIBLE product for several months. A SocialTV platform is running on Viktor's TV so that besides TV watching Viktor is also able to keep contact with his friends and relatives by means of video chatting or gameplay. Viktor's sofa is equipped with simple yet big enough controllers in both handrails (arm rest of sofa) and on the floor mat. Two controllers can be removed and put on most sofa handrails. They

are big enough for hand yet not too high (Something like a bigger “button joystick” that fits to a hand, looks like a button but have functionality of joystick. Optionally we can also imagine only bigger buttons instead of such joystick). Viktor doesn’t like the remote control of the TV due to small buttons, he sometimes uses the controllers on the sofa to control the TV to achieve some simple tasks, e.g. switching channels, or adjusting volume. The sofa is also used to play games on the TV. Viktor likes to play some games on the TV from time to time, because it involves body movement and he can play with his friends even when they are not nearby.

Viktor is watching the news in the afternoon. There is nothing special happening today, Viktor is a bit bored by the news. He sees in the buddy-list overlay on the TV that Karl-Heinz is also watching TV. Viktor selects Karl-Heinz from the buddy list and sends him an invitation to a game. Karl-Heinz is using FoSIBLE product too. Being invited to play a game with his friend Viktor, Karl-Heinz sees the invitation on his TV. Karl-Heinz has an option to accept the invitation for the game or to decline it. Karl-Heinz accepts it. The game is then started between Karl-Heinz and Viktor. They can choose to play the game in competitive or collaborative mode.

There are 3 games for showcasing. The first is “Online Sudoku”. Sudoku is a well-known and widely-accepted game. Viktor likes playing Sudoku very much. He sometimes plays it alone on the TV. The “Online Sudoku” also supports multi-play, so that Viktor can solve a Sudoku puzzle together with friends.

The second game is “Bouncing Ball”¹. The concept of the game is conveyed in Figure 3. This game involves much arm and hand movement to move the “plate” in the game to prevent the ball from hitting the player’s own goal. Image 1 shows the competitive mode of “Bouncing Ball”, however, the game also offers a collaborative mode, where players play side by side. In collaborative mode, Viktor and Karl-Heinz defend the big goal in a way that each of them is responsible for its own half of the big goal.



Figure 3. Concept of "Bouncing Ball".

¹ <http://www.igra.hr/igre/2/arkadne-igre/687/smash-out/>

The third game is called "Hit the mice"². The concept is shown in the following picture (Figure 4). In the game there are 4 holes on the ground, and mice might come out of the holes. Hitting the mice correctly in time will bring positive points during the gameplay. The player either presses the hand controllers or taps on the floor matt to hit the corresponding mice on the screen. The game can be either played in a competitive manner to achieve the highest score, or in a team manner to just have fun together. This game involves both movement of the arms and legs.



Figure 4. Concept of "Hit the mice"

The SocialTV platform is an open platform. New games or applications can be designed for it. Viktor's grandchild occasionally checks the App-marketplace on the SocialTV platform to look for new interesting games. When Viktor's grandchild sees Viktor on the buddy-list overlay, he/she invites Viktor to play a game. After playing the game, they usually establish a video chat to plan family meeting or simply comment the game results. Although Viktor doesn't like some of the games, he enjoys the feeling of living independently but at the mean time staying in tight contact with the family and friends.

² http://i.digua123.com/img/5_b_5773181.jpg

3.4 Consolidated scenarios

The decision was made to consolidate and specify all scenarios to fit the potential of the selected Smart TV platform (HBBTV) and control interfaces (gesture recognition and tablet). Following are given two consolidated scenarios.

3.4.1 “SocialTV” Scenario

Karl occasionally checks his account on fossible.kaasa.com, where he registered once with his login name “karl” and password “karl70”. He also accepted few friendships. When Karl starts TV, a transparent FoSIBLE widget is started, asking Karl to login once with his fossible.kaasa.com login and password into the FoSIBLE widget. Next time this information is automatically remembered upon switching TV on. Upon login, Karl can see regular full-screen TV program rounded with some SocialTV features: (1) selectable buddy list to show who is online watching TV, what channel and current program name, yet optionally if somebody is sitting in front of sofa or is temporarily away of it; (2) positioning on a buddy refreshes wall by showing recent status i.e. recommendations of programs by others or new friend add-ons. (Given that somebody recommended a TV channel and program to Karl, a notification to either accept or not this program is shown. For simplicity we assume this is not the case right now as it will be described later). Karl-Heinz is switching channels and stops on ZDF, while his friend is watching SAT3 program. Buddy list shows to Karl-Heinz that his friend is online and he is watching SAT3 with current program titled “Daily News”. Karl-Heinz positions to SAT3 as well.

Karl-Heinz and his friend start a chat to see if there is anybody writing there as of channel-chat functionality (chat with friends watching same channel). Karl-Heinz types some words via tablet. But, seeing nobody is interested in chat, Karl decides to switch channel to RTL1 where he decides to check if something interesting might be going on worth to recommend to his friend for watching. He selects his friend from the buddy list and context menu shows up offering to send message, or recommend channel/program, or continue watching just his TV channel. Karl decides to send recommendation, what brings up a TV-Guide window showing program list and timeline of different channels. He observes that “Baywatch” is to start at 18.00 in 2 hours from now on RTL2. He decides to recommend this to his friend. Karl still watches RTL1. Karl’s friend receives the recommendation notification popup with option to either accept recommendation or not. Choosing recommendation enables a reminder popup 15 minutes before start of the show. The recommendation is also shown on his wall inside FoSIBLE widget and on the wall of his web account on fossible.kaasa.com. Optionally, Karl decides also to send some message by choosing this option from the contextual menu when selecting his friend.

3.4.2 “Reading Club” Scenario

François is staying on his armchair watching a literary program “le bateau livre” on “France 5” channel. He likes to be abreast of literary news. The show discussion was about Jonathan Franzen’s new novel “Freedom”. He activates his buddy list and sees that Madeleine is online, watching “Arte” channel. Using his tablet, he activates the chat box and sends her a message by typing on the virtual keyboard to invite her to switch to “France 5” channel. On Madeleine’s TV the chat box appears on the corner of the screen highlighting the message of François. Then they start to exchange messages about the TV show. Madeleine says, “This is a great show I did not hear about it before”. François is very happy that he can find someone who shares his passion for books.

François has an idea: “it will be nice to recommend this book to my book club community”. He activates the FoSIBLE widget. To have access, he does not need to identify himself as he chose to connect automatically by saving his login and password. Once connected, François uses left and right gestures to navigate and find the “Clubs” service. Existing clubs appear and with the tablet he chooses the “Book Club”. François can see on his main page persons who joined the club recently, the most recommended books and the last active discussion(s) on the forum. On his tablet, he clicks on “Recommend a book” icon. A recommendation form is represented. He fills in the form using the virtual keyboard on the tablet -with the book title and author name. From the “Share Book Recommendations” space, François can see what his friends are reading now, and he can keep track of what he would like to read by marking some recommendations as “book to read”. As François wants his best friend Pierre to be notified of this recommendation, he sends him a dedicated message “A really good book! Come this weekend and we can discuss around a cup of tea”. Pierre receives the message instantly on his “Stay in Touch” space with a notification displayed on his tablet.

To help the members of the “Book Club” to stay in touch and being aware of the activity of the community, a monthly letter is sent to them by the system on their “stay in touch” inbox. This monthly letter is a kind of newsletter that contains book reviews from the club members and the most recommended readings.

4. Mockups

Mockups were then developed, based on the results from interviews, focus groups and discussions with technical partners. The aim was to collect feedback and comments from potential users, and to evaluate technical feasibility. Feedbacks helped us to start an iterative process of development.

Based on these feedbacks, we have defined 4 activities on our first mockup that the user can select when looking at his/her TV set: WatchTV (SocialTV), Play, Stay in Touch, Participate in clubs (Figure 5).

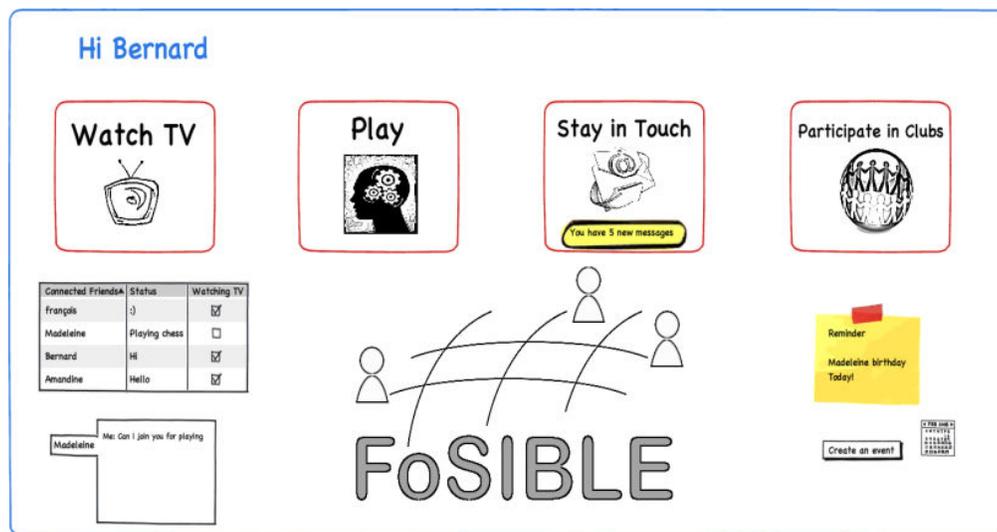


Figure 5. First FoSIBLE mockup.

- If the user selects Watch TV, he/she will be able of course to watch any program, but also to see his/her buddy list, to interact with his/her buddies, to recommend programs and to look at recommended programs (Figure 6).
- If the user selects Play, he/she will be able to play games, to invite others to a game, to compare scores.
- If the user selects Stay in Touch, he/she will have the access to all the materials that his/her relatives want to share with him/her (photos, videos, drawings), user will be able to send/receive message, etc.
- If the user selects Participate in clubs, then he/she will see existing clubs (yoga, cooking, poetry, reading), and he/she will be able to create a new one. In each club, user can share (texts, videos, photos), ask questions and discuss (Figure 7).



Figure 6. SocialTV/WatchTV mockup.



Figure 7. First reading club mockup.

The mockups help future users to imagine the alternative design features and interface of the social interactive TV system. They also permit to focus on problem areas of the project and to verify the adequacy of design choices to the needs of future users. They evolve due to the interactions with end-users and technical partners (Figure 8).



Figure 8. Actual prototype combining Reading Club and SocialTV features.

Focus groups are actually organized to allow users to develop their own ideas on the applications they will evaluate and control interfaces. The focus group includes ten end-users; with the support of a group leader, the participants are able to speak freely about the system during a session lasting about two hours. The objective is to collect data on how users perceive the system, and therefore to obtain their feedbacks, initial reactions to the design and to examine their preferences. After implementing focus groups results into the platform, participants will be equipped at home with the FoSIBLE system, and we will follow their use during one year.

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