

TAO Project Deliverable D 5.5

Overall research project final report

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Executive Summary

The TAO project aimed at improving the quality of life, social inclusion and well-being of older adults through the use of the Internet. The vision of the project was a triple win by improving the life situation and social inclusion of older adults, improving the sustainability and impact of online communities of older adults, and helping society and economy at large to better tap the rich expertise and knowledge base of older communities.

To this end, the TAO project has combined practical expertise in the field of online communities of older adults with multi-disciplinary academic approaches. The practical expertise was provided by online community platform providers and companies and organizations that provide technologies and methodologies to improve the functioning of these communities, the communication within the communities, and the interaction between the communities and third parties. The academic track of the TAO project covered approaches to the recruiting, activation and retention of older adults through online community platform providers, volunteer recruiting and volunteer management, business strategies and business models for platform providers for online communities of older adults, and collaboration between such online communities and third parties. This deliverable summarizes the activities of the research track of the TAO project, the concrete activities of the online community platform providers are illustrated in Deliverables D1.4 and D1.5.

Overall, the TAO project has found that online communities of older adults are confronted with specific challenges that require strategies and approaches tailored to the needs of older adults, have to comply with specific technological requirements and standards to present online content, and provide a powerful means to impact positively the level of social inclusion and personal well-being of older adults. The conditions under which online communities of older adults evolve and operate and their impact has been considered and evaluated in a wider European context in order to identify positive country or welfare system specifics.

The practical results of the TAO project are illustrated in a Handbook that is designed as a Wiki and aims at the establishment of a community of practice that continuously contributes to its further development. The community of practice is at an infant stage at current but will advance in the course of the post-project phase in the context of the exploitation plan and business model the consortium partners have developed to tap the knowledge gained through the project and to contribute to the improvement of the economic conditions for online communities of older adults and the quality of life of their members.

1 Introduction

1.1 Overview of the Deliverable

The European AAL-funded project TAO aimed at facilitating and promoting access of elderly and people in early retirement to online social communities and online collaboration projects. It thereby provided the target group, which hitherto has been underrepresented on online platforms, with new possibilities for social interaction and participation in value creating activities. At the same time the project attempted to harness the growing reservoir of potentially active elderly people to boost social activity and collaboration in online communities. It provided existing online communities with the tools and methods to attract more elderly people and endeavored to demonstrate how goal-oriented communities such as Wikipedia communities can profit from increased participation of elderly people, thus setting off a “community pull” to encourage elderly people to engage in social interactions on the Internet.

The project’s main focus was on two types of online communities in different countries:

- elderly-oriented seniors’ communities (such as Seniorweb CH and SeniorWeb NL)
- Wikimedia communities in various countries

The two main challenges with regard to promoting participation of elderly people in online communities addressed by the project were:

- Development of effective methods to encourage elderly people to take an active part in online communities and to facilitate inter-generational integration in such communities.
- User interface and functionality design tailored to the special needs of elderly people (but also taking into account the needs of a wider community, inter-cultural differences, and the effectiveness of technically mediated social interactions).

The project’s three main target groups of elderly people (mainly focusing on the age group between 60 and 70) were:

- “Lurkers”¹ or “passive users” of online communities and/or their products.
- People who have shown their willingness to learn how to use the Internet by participating in corresponding courses.
- Existing social groups which so far have almost exclusively relied on offline interactions.

In all cases the project’s activities made these people aware of the benefits and advantages of online social interaction and helped existing online communities benefit from their contributions.

This Overall Research Project Final Report shows TAO’s win-win-win-situation:

- ✓ Elderly people profit in terms of social capital and human capital (health and well-being, but also skills and knowledge), improved possibilities for online activities, and a larger array of online content which is targeted at their needs.

¹ The term "lurkers" in online communities refers to people who use the community in a way (e.g. by reading the content on its websites, reading forum postings, etc.) but never contribute (i.e. submit own content, post a comment, and the like) (see <http://en.wikipedia.org/wiki/Lurker>). Research has shown that often the share of lurkers in online communities is about 90%, while 9% contribute a little, and 1% contributes the lion share of the activities of the online community. See: http://www.useit.com/alertbox/participation_inequality.html.

- ✓ Existing online communities profit in terms of increased participation (leading to economies of scale allowing for the satisfaction of “niche” interests) as well as in terms of a qualitative improvement of their products, services and/or their social interactions.
- ✓ Society as a whole profits from improved social and human capital among seniors², from improved inter-generational relations as well as from the expected boost in “open” production and the creation of new opportunities for elderly people to put their knowledge and rich life experience to use.

From a “product” perspective, the following main outputs of the project, supporting these objectives, are represented in this deliverable:

- ✓ An inventory of methods for “mobilisation” and “inclusion & motivation” and corresponding guidelines, which will be consolidated into a handbook for online community consultants.
- ✓ Improved user inter-faces as well as prototypes for innovative approaches to supporting social interactions and collective action in online community settings.
- ✓ Community development models, to show how the participating community partners have evolved and explicated their TAO-related activities and services.
- ✓ Concepts and pilot implementations for new services, content, and activities in relation to online communities.
- ✓ Business models allowing to implement successful methods for “mobilisation” and “inclusion & motivation” in a sustainable fashion.

1.2 Connections to other Deliverables

As the title of this Overall Research Project Final Report already implies, this deliverable is a representation and report of the most important outcomes of the project. It therefore summarizes all activities of the project as already described and elaborated in all other deliverables for SP 1 to 5.

1.3 Value Added by the Project TAO

TAO’s win-win-win-situation towards both elderly people, online communities and society as a whole.

² Society benefits from an increase in the social and human capital of elderly people because it reduces dependency in the Third Age, and thus releases resources otherwise needed to provide assistance.

2 Community Development

2.1 Wikimedia, Germany

- Wikimedia Deutschland
- Berlin, Germany
- <http://www.wikimedia.de>
- charitable, not-for-profit, membership-based association
- 60 employees – 6.700 members – 1.700 volunteers
- supporting the creation, collection and distribution of open content, fostering equal opportunities in the access to knowledge and education
- donations, yearly member fees, public grants

Key activities with adults aged 50+: The active participation of older adults in Wikimedia projects was the main goal of the project “Silver Knowledge”. Wikimedia Deutschland partnered with organizations for seniors and offered workshops geared towards this group. In the experience of Wikimedia Deutschland, workshops should target people with motivation to contribute, who have topics to contribute and who have spare time to do so. Therefore, reaching out to people of all age groups interested in specific topics is more important than having a project with the label “for older adults”. Another observation was that older adults are most interested in topics that focus on historic events.

Key revenue streams: Wikimedia Deutschland is a publicly recognized non-profit organization, which primarily relies on donations for funding. The organization has an office with about 60 employees. There is a formal membership and members pay a yearly fee. Reduced or voluntary higher fees are also possible. This revenue stream is complemented by donation drives on Wikimedia websites. Some projects of Wikimedia Deutschland receive public grants.

Challenges: The education and knowledge department is addressing a number of challenges. The first one is diversity management. Traditionally, the most prevalent group within the Wikipedia community is young and educated males. The challenge is to diversify the community and to activate new groups. Activities at schools, universities, and with senior citizens is a great start, but needs to be expanded. The central focus of our activities is to try out new formats, expand our networks, and produce suitable education and information materials.

TAO community partner Wikimedia DE focused on developing a training concept and on involving cooperation partners in order to get seniors interested in becoming for Wikipedia. Their main goal was to enlarge the authorship of Wikimedia and its diversity by winning older adults as authors and members of the Wikimedia. Among the authors of Wikipedia, important population groups like older people (50+) are significantly underrepresented³. From this fact the target to win older people as volunteers for Wikipedia or other Wikimedia projects derived. Therefore, the project “Silver Knowledge” was initiated to activate, integrate and motivate older persons as authors. Wikimedia DE partnered with the EU-project Third Age Online (TAO) in October 2010. It developed strategies to get older people of the generation 50+ interested in volunteering for Wikipedia, state their motivations to participate and how this motivation can be encouraged in a long-lasting collaboration. To conduct Silver Knowledge as successful activity, Wikimedia DE engaged in cooperation with various partners and locations such as senior organizations or 3rd age universities. This way the project coordinators were able to address their target group through local cooperation partners who were in direct contact

³ Merz, Manuel (2011): Wikipedia Editor Satisfaction Survey. Erste Eindrücke. WikiCon, Nürnberg, 9.-11. September 2011, www.purl.org/merz/20110909

Merz, Manuel (2010): Wer editiert warum in Wikipedia? Ausblick auf die Wikipediabefragung 2011. Wikipedia Academy, Goethe-Universität Frankfurt, 19.-20. November 2010, Online im Internet: www.purl.org/merz/20101119

with the seniors. During the whole project, these cooperations were further developed and enlarged to build stable structures for multiplication through networks (e.g. Seniors' League, Bundesarbeitsgemeinschaft Wissenschaftliche Weiterbildung für Ältere (BAG WiWA), seniors' organizations etc.) and to establish local contacts.

A multi-level workshop concept was developed and carried out by qualified consultants. During the whole project span they were continuously trained to hold these workshops for potential new senior authors. It turned out that the best results could be achieved with consultants who were both experienced as authors of Wikipedia and had some experiences in adult education. During the course of the project, a consultant's network for exchange of experiences and course material was successfully developed in the Wikimedia Forum. This network will continue to exist independently after the end of the project – the support of and gaining outreach of new authors will be self-organized by the network. Anyway it will continuously be accompanied by Wikimedia DE in order to guarantee quality standards.

An activity included in the workshops was participation in "Wiki Loves Monuments", a Wikimedia photo contest most of the senior groups got involved in with high motivation. Participants take pictures of historical monuments and heritage sites in their region, and upload them to Wikimedia Commons. The aim of this event is to highlight the heritage sites of the participating countries. The introduction of community activities like Wiki Loves Monuments was one of the main strategies during the second half of the project. TAO partners such as SeniorWeb NL cooperated in these activities.

The whole idea and concept of Silver Knowledge was advertised and presented both in different national press articles (for example reports on local training events) and on international level (e.g. presentation of Silver Knowledge at Wikimania, Washington; EduWiki, Leicester and Wikicon, Dornbirn). The exchange with other European Wikimedia chapters (PL, NL, UK, CH) revealed that Wikimedia DE currently is the only chapter with a programme for the target group of older adults – a finding which clearly illustrates the necessity of programmes such as Silver Knowledge also as a concept other chapters can refer to as example to increase the percentage of older adults as Wikipedia authors.

The training workshops held within the scope of Silver Knowledge aimed at introducing Wikipedia to interested older adults and at motivating them to participate as new authors. The exact number of authors Wikipedia gained through the programme is hard to tell because there is no actual tracking of the conversion rate in the weeks and months after workshops. In any case, Wikimedia was successful in conducting its concept and enlarging the network of consultants who carry out the workshops for new authors. In retrospect, both consultants and participants agreed that the training events were not enough for most of the seniors to cover all aspects of using and editing Wikipedia. They need to be supported during their first steps and have the possibility to get direct support in their first steps as aspiring authors. One of the main findings of Silver Knowledge was the necessity of developing a more personal and therefore successful forum for a productive collaboration of older adults as authors in the Wikipedia. Depending on the local cooperation partner, various approaches are possible: informal meetings for coffee, tutorials, excursions, intergenerational researcher events, working groups and so on. Further supportive activities may be initiated on a local level, for example meetings of Wikipedia-groups with new authors or the introduction of some authors and their articles. Summing up, the participants have to be included and feel welcome and accepted in the Wikipedia community, for instance with newsletters or circulars directed to particular groups. As reaction to this finding for example the Silver Knowledge newsletter was conducted. It is written in collaboration with and for the members of the community. It regularly updates authors and new development and provides them with supporting material.

Wikimedia DE will continue to work on gaining new and empowering existing partnerships with different partners such as educational institutions or senior associations as well as furthering the development of strategies to enlarge the diversity among the Wikipedia authorship. The project Silver Knowledge will continue in a slightly different form and with the new name "Sharing Knowledge" ("Wissen teilen"). This is a reaction to the observation that Silver Knowledge mostly addressed the

older among the senior participants. People between 50 and 65 years old did rather not identify with the term “silver”. Hence, it is become necessary to find a more inclusive name, and use a term which does not address demographic criteria of the target groups, a name that emphasizes the activities of sharing knowledge. The new name “Sharing Knowledge” encompasses all these aspects. It provides room for different initiatives under one banner and does not exclude certain groups or individuals.

The efforts to increase the participation of older adults on Wikipedia will continue. In order to attract new authors, a number of different strategies will be followed. For example, good experiences were made with the concept consisted in combining expert lectures on theme based events with the possibility of getting in touch with established Wikipedia authors and learning about writing articles and contributing to Wikipedia. Providing “technical” information on Wikipedia in combination with interesting topics promises to be a successful way motivate interested persons to participate. Addressing organizations or clubs with a topical focus can be another successful strategy to win older adults - they often show interest in sharing their very special topics on Wikipedia. Cooperations like these quite often develop to a sustainable long-term partnership. Also it turned out during the project that people who were interested in Silver Knowledge often had already been involved in any kind of volunteering organization or in a social activity. The engagement for Wikipedia usually is added as another activity with limited personal commitment. The focus in winning older adults as authors should therefore be set on the target group of seniors who just retired and are looking for new challenges.

2.2 terzStiftung, Switzerland

- terzStiftung
- Berlingen, Schweiz
- www.terzstiftung.ch
- Not-for-profit-foundation
- 6 employees – 330 volunteers – 6550 members
- Providing information to senior citizens and offering senior-focused expert advice to developers of products and services
- Members pay a yearly member fee

One of the main activities of the terzFoundation and the so called terzExperts is to provide senior-focused testing for improving the usability of products and services. This was the reason why the terzExperts started collaboration with the TAO project to set up usability tests for websites with a focus on the needs of senior citizens.

The best-known definition of usability is the one from ISO, the International Organization for Standardization (9241-11): “The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use.”

We like this - although rather formal - definition because it encompasses the critical elements of

- Specific users — not just any user, but the specific ones for whom the product is designed.
- Specified goals — these specific users have to share the goals for the product, meaning that the product' s goals represent their goals.
- A specific context of use — the product has to be designed to work in the environment in which these users will use it.

The discussion of such general definitions within a core team of terzExperts was the starting point of a series of workshops. Based on a common understanding of some general principals we developed our own methodology and a series of checklists and instructions, always with the goal in mind to win and include as much volunteers as possible. The process finally resulted in a business model and a detailed description of the business process. The latter is important to clarify the interface for collaboration between the core team and the volunteering terzExperts. The process describes all steps, starting with costumer acquisition and ending with the invoice procedure. The core process can be summarized as follows:

- terzExperts of the core team contact the customer (website owner or website designer) to define five main tasks or questions to be tested on the website.
- According to the five questions, three terzExperts - who are not familiar with the page - navigate through the website. The testing process is facilitated by a test leader, who is a terzExpert himself.
- The customer and three additional terzExperts are observing the navigation of the test person in a separate room.
- An analysis of the three tests follows within the group of observers. As a result the group elaborates three focus points for the optimization of the website.
- The customer receives a report, the three recorded tests on a DVD, and an invitation to get in touch for a next test as soon as the proposed improvements are designed or implemented.
- Finally the customer's homepage is rated after every test by the test persons by filling in a questionnaire. If the website reaches an average of at least 7 of 10 points, the customer receives the so called "terzLabel" as an award for senior focused quality.

The practical testing activity has led us to the following insights:

- Testing is an essential activity to raise companies' awareness for the specific requirements of senior citizens.
- Often developers are convinced that they know enough about their users. But this is far from the truth. We have found confirmation, that only seniors can judge the senior's needs. And especially seniors with some impairment (visually, hearing etc.) are most critical test persons.
- It is crucial to run the tests in collaboration with the responsible designers/developers. This is mainly important to make the pains and pitfalls of the users tangible to the responsible persons.
- During the ongoing work it got clear that testing has to be an integral part of the design and development process. Testing the final result does not make sense, as at the end of the production process the motivation for changes is low.

Currently, the understanding of innovation is undergoing a fundamental change. Innovations are no longer being developed exclusively 'inside-out' from the perspective of a company or a service provider, but increasingly 'outside-in', from the perspective of the user or in general the stakeholders. Keywords in this context are 'user centered design' or 'co-creation'. Co-creation involves partnering with target users to find solutions in a progressing, iterative process, whereby needs are uncovered one step at a time, by generating ideas, developing concepts and coming up with preliminary solutions. These in turn will be evaluated based on the needs of the target users. This process repeats until a solution has been found that is satisfactory to the potential users.

This kind of reflections about the ideal development process for senior-focused products and services has led to the decision to continue the collaboration between terzFoundation and Bern University of Applied Sciences. The main idea of the joint venture is to involve senior experts earlier and at a much more active rate in the value creation process than this has been done in the past. And the slogan is: "We start where classic market research ends".

2.3 Zeix, Switzerland

Zeix contributed in SP 4 the concept, the methodological setup, proceeding and reporting for the exploratory study "How Online Communities Can Make a Contribution to the Social Integration of Persons Aged 60 to 75" in close cooperation with BUAS. The study was supported financially by the Swiss companies Swisscom, Zürcher Kantonalbank, Coop and Zeix.

The project team members Sibylle Loetscher (Zeix) and Jonathan Bennett (BUAS) presented the results at the following opportunities:

- Presentation at VSKB (Verband Schweizerischer Kantonalbanken) marketing conference (21. June 2011)
- Presentation at ZKB (Zürcher Kantonalbank) (17. January 2012)
- Article “Wie können Online Communities für ältere Menschen attraktiver werden? ” in “IT business” magazine 02/2012
- Presentation at Swisscom (Schweiz) AG (7. Februar 2012)
- Article “Online Communities im Test: Kein Gold von Silver Surfern” in “Netzwoche” magazine (1. March 2012)
- Presentation “Ältere Menschen und Online Communities - Motive, Hindernisse, Handlungsmöglichkeiten” at “Geriatiekongress 2012” (12.-15. September 2012)
- Participation at TAO final conference (12. September 2013)

2.3.1 Method and implementation

Aim: To identify solutions for promoting older persons’ use of online communities. To identify the dominant obstacles for persons aged 60 to 75 years in using online communities and to infer how online communities could become more attractive to potential users of that age group.

Sample: Average senior internet users, not beginners

The study was carried out with 18 internet literate persons aged 60 to 75 years. The sample included 6 active users (3 f, 3 m) of online communities, 6 persons (4 f, 2 m) expressing an interest in joining an online community (intenders) and 6 persons (3 f, 3 m) not showing an active interest in online communities (hesitators). A group of 6 skeptics (refusers; 1 f, 5 m) were interviewed by phone. Means for age were 64.5 (SD = 3.8) for active users, 65.7 (SD = 2.2) for hesitators, 70.0 (SD = 5.1) for intenders and 65.0 (SD = 2.1) for refusers. The participants were diverse with regard to place of residence (German-speaking Switzerland only) and concerning professional and educational background. Since the sample consisted of “younger” seniors, access to the internet was not an issue.

Method: Lab tests and panel interviews

Active users were treated to one usability test session while intenders and hesitators went through two usability test sessions. Each test session included a series of tasks (scenarios) and was preceded and followed by a semi-standardized interview. A semi-standardized telephone interview conducted four weeks after the second test session marked the end of the study.

2.3.2 Results

Unsatisfactory user experience with all online communities tested

Users were confronted with significant usability barriers throughout the whole process of using online communities. This included unattractive content, lengthy and complex registration processes, insufficient overview of the whole website and the specific community features as well as difficulties contributing to and thus becoming involved with the online community. These problems are mainly rooted in a lack of user guidance and missing fundamental explanations. This experience left many test participants with mixed feelings about their membership. Moreover, hardly any of the test participants would have been able to master the registration process without help from the test administrators.

Active users have found their niche

Active users entered online communities either by introduction through close family members, by “ideological affiliation”, i.e. contributing their knowledge to a cause in accordance with their values or beliefs, or in order to be informed about social real-life activities with people sharing their interests. All of them derived a personal benefit from using a certain online community. They were either very motivated to overcome any hurdles in joining the respective communities and/or were supported by family members in doing so.

No big differences between intenders, hesitators and refusers

Hesitators' attitudes towards online communities were rather critical to begin with, while intenders were quite optimistic that online communities had something in store for them. At the end of the study, the persistent non-users in both groups came to share the same skepticism about using online communities. Refusers ruled out deriving any imaginable benefit from using online communities and indicated privacy and security issues as reasons for not wanting to participate in online communities.

Link to everyday life decisive for further community usage

In spite of the mentioned difficulties, 5 out of 12 community beginners (3 intenders and 2 hesitators) intended to keep on using the tested online communities after the study had ended. They had managed early on to establish a link between their everyday lives and the respective communities and were able to focus on a limited number of tasks within the community offers. Others did not find content that made them want to return or held perceived risks, such as possible loss of control or privacy and security breaches, accountable for not continuing to use online communities. A lack of reciprocity as well as a general dissatisfaction with the contacts established in the online community were also among the reasons for discontinuing usage.

User profiles: Age not the decisive factor

Users of online communities are not a homogeneous group. Motivations, interests and hobbies as well as real-life social network activities differ as strongly between test participants as they do between members of younger generations. Only a small number of participants appreciated a community focus on older age groups (as in the case of seniorweb.ch). Many perceived risks were similar to those mentioned by younger user groups and discussed by ICT professionals. Thus, online communities do not simply appeal to one particular type of senior user. Rather, online communities are a means to an end and its users benefit from specific domains.

Limited options for social integration through online communities

This study suggests that socially less well integrated individuals might also face more difficulties participating in an online community than socially well integrated individuals. Nevertheless, online communities can make a contribution to preventing or decelerating social isolation by helping senior users organize and structure their lives and by assisting to keep up social integration after retirement. To a certain extent, online communities can also motivate for certain activities and connect people with similar interests. In addition, successful participation in an online community can strengthen one's self-efficacy and self-esteem.

2.3.3 Recommendations**A model of action: attracting and retaining (senior) members of online communities**

In order to turn potential users of online communities into active ones, it is necessary to take action on three levels. Firstly, users have to be attracted and activated by attractive content and clearly worked out and communicated benefits. Secondly, they have to be guided through the process of registration and familiarization with the online community. User-centered design is an approved process for reaching these aims. Thirdly, new members have to be rewarded swiftly for their first contributions and efforts in the community.

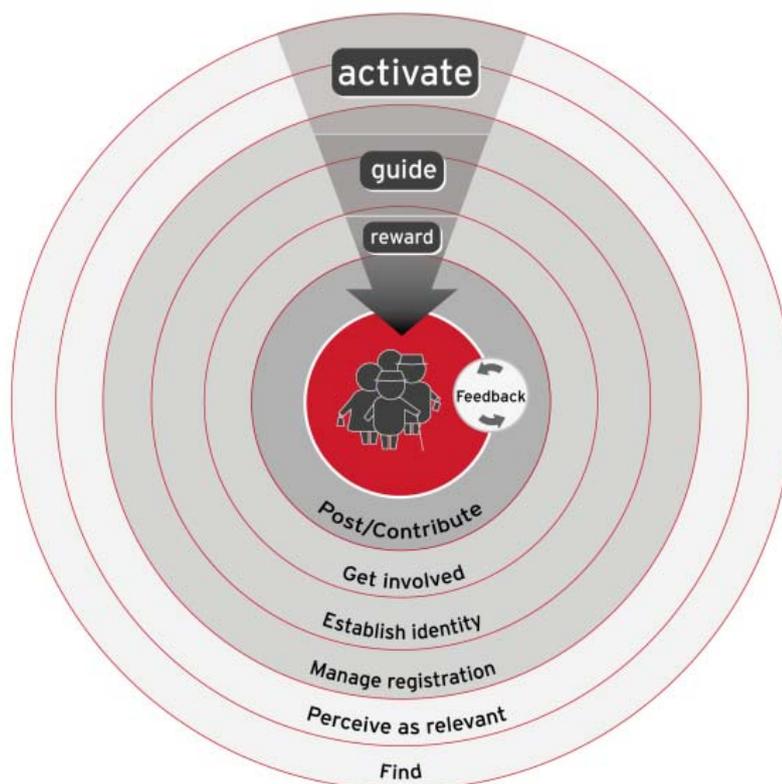


Figure 1: A model of attracting and retaining (senior) community beginners.

Success through collaboration of different stakeholders

Making use of online communities for social integration requires efforts from many different actors. Community operators face the challenge of developing an attractive platform by investing in high quality content for the target group, by providing a proven-to-be user-friendly application and by building trust through adequate, well-tailored communication. Current community members, offline organizations, businesses from the private sector and the media will be in charge of creating a supportive framework for the development of online communities and their contributions to social integration.

Quality guidelines needed

It is essential that quality guidelines for effective online communities are set, legal protection of privacy is ensured and that quality improvement in services offered by non-commercial and commercial stakeholders are promoted. This can be achieved through establishing and promoting a database of user-friendly communities and by initiating regular checkups and incentives (e.g. awards) for existing online communities.

2.4 Seniorweb, Switzerland

- Seniorweb.ch
- Zürich, Switzerland
- www.seniorweb.ch
- Legal form until 2008: Membership association; since 2008: Charitable foundation (trusteeship and only shareholder) and corporation (operator of the online platform)
- 2 part-time employees, 120 volunteers, 1.200 paying members
- Operates an interactive online platform for older adults (50+). Offers IT support and workshops for media competence to older adults in regional learning centers

- Key revenue streams: Advertising (50 percent) and members' annual fees (50 percent)

2.4.1 Free Cruise on the Internet

Seniorweb CH is the largest online community addressing older adults in Switzerland. It operates and develops a platform offering older adults an edited online magazine, an array of different services (often in partnership with other non-profit or for-profit organisations) as well as an active community section with a large range of interest groups and discussion forums. In order to explore the Seniorweb website and to make use of the different ways to contribute actively, users require certain skills. Thus, Seniorweb takes a direct interest in the education and training of older adults in basic and advanced internet usage, including Web 2.0. Accordingly, a major TAO activity for Seniorweb CH consisted of the design and implementation of workshops and courses on internet and Web 2.0 usage. Seniorweb's educational activities rely on the commitment of its volunteers who run the courses and workshops.

With its campaign 'Free Cruise on the Internet' (2011-2012), Seniorweb CH also aimed to recruit paying members for its website. 'Free Cruise on the Internet' consisted of low-threshold internet workshops, seminars and an information stand for older adults, and took place in various public locations (e.g. in a shopping mall in the Swiss capital Bern). The campaign informed older adults about the possibilities of the internet, and more particularly about how they could benefit from the internet themselves. Although 'Free Cruise on the Internet' was very successful in terms of customer feedback, the main goal of increasing Seniorweb CH's membership was not sufficiently reached.

The management of Seniorweb CH therefore decided to suspend 'Free Cruise on the Internet' and to focus instead on 'learning centers' licensed by Seniorweb CH. The rationale behind these actions is explained in the following section.

2.4.2 Development of a new business model

Apart from the goal of user education, Seniorweb CH also aimed to use its educational activities to draw attention to Seniorweb and its offers and to acquire new paying members – membership fees being a crucial source of revenues for the organization.

While activities in the framework of TAO (e.g. Free Cruise on the Internet) proved to be successful in terms of participants' feedback, the sustainability of these activities was insufficient because of a lack of revenues. Workshop and course fees did not suffice to cover volunteers' expenses and Seniorweb remained reliant on third-party sponsors. What is more, the number of newly acquired paying Seniorweb members remained below expectations.

Drawing from these experiences and making use of significant changes in its organizational setup, Seniorweb initiated a basic revision of its business model with the aim of positioning the brand Seniorweb CH more clearly. A critical review of the original business model showed it lacking clarity in terms of the value proposition. As a consequence, the change process "Opportunity 2013" was initiated. It included three workshops among the Seniorweb leadership team as well as a large conference for volunteers and employees in November 2012. This process resulted in the decision that Seniorweb CH's core community activities would henceforth take place in the field of furthering older adults' competences with regard to new media. Three core activities were defined, namely education, support, and magazine (edited website content) with the support and magazine activities being also geared towards furthering the educational activities.

What this means is that Seniorweb CH has changed its business strategy from being mainly a community platform that also happens to provide user education to being an organization focusing on educational offerings in the field of new media and supporting these activities with an online platform. Seniorweb CH considers its experience in this field (especially an intimate knowledge of older adults' needs with regard to new media gathered during the TAO activity Free Cruise on the Internet), the performance it has achieved in such courses, and the access to its large community as its key value propositions. Seniorweb CH has already licensed two regional learning centers (Bern, Zurich) as key

partners, which will be the venues for offering the new media competence courses and workshops. Drawing from the experiences of these first learning centers, Seniorweb CH is expecting to license additional learning centers in other parts of Switzerland. Successful learning centers should contribute to Seniorweb CH's goal of having a total of 10.000 paying members by 2017. The development of these learning centers by Seniorweb CH is an important outcome of the TAO project, as it derives from a fruitful exchange and collaboration between Seniorweb CH and SeniorWeb NL. SeniorWeb NL has been successfully running learning centers for several years.

The Swiss learning centers will be organized as companies with limited liability. The role of the Seniorweb website will change as well. After its re-launch, the website will function as an important channel for reaching potential educational customers, a function that the website has not clearly focused on so far. In addition, the website will offer the possibility of directly purchasing course and workshop services. Great emphasis will also be laid on the post-purchase customer support, i.e. on making sure that workshop participants are re-directed to the Seniorweb CH website for all matters of post-workshop educational support. In order to receive support services, workshop customers will be required to have a Seniorweb CH (paying) membership. The website will thus also be a vital means for acquiring new paying Seniorweb members.

While the learning centers' main revenues will be the fees from the workshop participants, Seniorweb CH will generate revenues from membership fees, the licensing fees from the learning centers and, as is the case already, from offering advertising space. Seniorweb CH's revenue structure is to change insofar as the aspired increase in members will provide a more steady flow of revenues than is provided by the more volatile advertising fees, which have been the most important revenue stream so far.

One of the main targets in the near future is the re-launch of the Seniorweb CH website. Seniorweb CH is aiming to include its volunteers in the process of testing and optimizing the new website, and to draw on BUAS expertise in usability and accessibility. The architecture of the website is to become simpler, and to focus clearly on learning and education with regard to new media.

2.4.3 Further activities in the framework of TAO

'Wiki Loves Monuments' is an international photo contest focusing on cultural heritage monuments, organized by Wikimedia. In the second TAO-year (2011-2012), Seniorweb CH participated at the community level in the 'Wiki Loves Monuments' contest and encouraged its members to upload photos to Wikipedia. Seniorweb CH's objective was to facilitate its members' first steps towards contributing to W. Simultaneously, Seniorweb CH aimed to strengthen the synergies between itself and Wikimedia CH. Seniorweb CH therefore announced the 'Wiki Loves Monuments' contest in its newsletter, published a related article in its online magazine and created a blog about the contest. Furthermore, contributions concerning 'Wiki Loves Monuments' were posted in the "photographer forum" of Seniorweb CH.

From mid November 2011 to early March 2012, two workshop series with ten participants each were held in Bern and in Zurich. Participants worked according to the Design Thinking principle (Plattner, Meinel & Weinberg, 2009), thus starting out by exploring in detail the challenges and needs of the users. In an iterative process, educational objectives were formulated, initial web-based educational programs created, tested, improved, enhanced and then tested again until the process was finally completed. The rissip platform⁴ was used for the implementation, being geared especially well towards the needs of small to mid-sized businesses, smaller institutions and individuals. The platform enables users to develop and apply e-learning without having to operate any complicated or expensive infrastructure. The results of the working groups are available to the public on the Seniorweb CH website. They cover many different topics focusing not only on the use of technology and software but exploring also areas as diverse as living, dietary aspects, osteoporosis and intergenerational games while always placing an emphasis on the needs and interests of older adults.

⁴<http://www.rissip.com>

The workshops were initially moderated by BUAS and attended by interested members of Seniorweb. In the meantime, Seniorweb CH carries out these workshops autonomously, which is important for their sustainability. The developed applications are maintained and updated by the Seniorweb e-learning working group.

2.5 SeniorWeb, the Netherlands

- SeniorWeb
- Utrecht, the Netherlands
- www.seniorweb.nl
- Not-for-profit-foundation
- 30 employees – 3000 volunteers – 140000 members
- Running the most popular community platform for seniors in the Netherlands, familiarising those generations with computers and the Internet who have not had the chance to grow up with them, for and by seniors.
- Members pay a yearly member fee

Before implementing any actions or activities, UM-MERIT and SeniorWeb conducted a study on the demographics of the SeniorWeb members and the use of SeniorWeb's web contact services. The purpose of this study was to identify patterns and structures within SeniorWeb members that could later possibly help to tailor new services and products better to the needs of the target group.

About 10% of the members had used these web contact services. They fulfil three functions:

- Help / learn from each other
- Expanding social network and the member's life world (one can talk to people he would not meet in his traditional environments)
- The web contact services serve as the human face of SeniorWeb as an association, this is the best opportunity for the members to have direct interactions with each other
- Opportunity for the members to express themselves in new forms and contexts (e.g. photo contest) and to gain reputation that cannot be gained at home or in circles of the family or friends.

Based on the preliminary quantitative and qualitative research, a follow-up on the web contact services was made, via co-creation. Based on the results of the preliminary research and the focus group conversation, and the strategic policy of SeniorWeb, a new approach will be elaborated. In this approach, choices are made for on the one hand a possible phasing out of existing services and on the other hand of developing new services, their functionality and purpose. In this light, several co-creation sessions were organized to create the first guidelines for the new service. Based on this output usability tests were done and mockups were discussed with the members. Thereafter, the process of applying the research' output and members' feedback into developing the new web contact service was started. Currently, everything is set to order to launch the new web contact service together with the project's end, namely on the 1st of October 2013.

SeniorWeb members seemed too reluctant to the use of online contact services. The preliminary research shows that there is potential interest in social media. Manuals and informative articles would help. Therefore SeniorWeb decided to develop six Social Media Specials, guidelines for social media. Together with Studio Visual Steps, SeniorWeb developed six Specials to introduce social media. The Specials are practical and accessible handbooks and user guides tailored to the older person. Following the methodology known as the Visual Steps Method (or Visual Steps concept), attention is made to the special needs and requirements of the target group. For example, the Visual Steps publications contain easy to understand, visually oriented, step by step instructions and feature practical, useful information, tips and helpful hints.

Every Special focuses on one social medium, i.e. four social networking sites – Facebook, Twitter, Hyves and SchoolBANK – and two online communication software applications – Messenger and Skype.

Since also the Ambassadors (volunteers) seemed to have insufficient knowledge of social media, train-the-trainers meetings and presentations on Facebook, Twitter and other social media were organized.

During the research UNU-MERIT and SeniorWeb were able to apply a methodology for the mobilization of elderly people. After the identification of experiences, interests and concerns within several target groups (with regard to the amount of participation in online collaboration communities), several multipliers in order to activate and mobilize even more members were chosen. Based on these results we agreed on the development of tutorials and information material (a.o. the Social Media Specials) and on the development of a new web contact service, mostly focusing on the members' wishes, needs and motivations. For example, co-creation and focus groups made it clear that SeniorWeb members want to exchange information on computer topics and that expanding social contacts and discussing other topics are not an aim of their online SeniorWeb activities. While developing an online purchase assistant for IT products, co-creation confirmed the members wanted a whole other kind of service than expected: this feature should be sober and no frills are desired.

This web contact service will be the new platform for and by seniors of the Netherlands to exchange information on IT topics. Combined with the ever developing and expanding online course platform of SeniorWeb, the website now is designed to fulfill every SeniorWeb members' need for IT support.

After a first round of identifying the target groups and applying quantitative (surveys) and qualitative, such as co-creation and other participatory, methods, those that have proven successful were multiplied by SeniorWeb for other aspects of setting up the new web contact service. This time, the researchers only assisted on a more organizational level, where SeniorWeb carried out all the tasks.

During the project we found out that SeniorWeb applied several successful methods for mobilization and activation of senior citizens online. Both the researcher of MERIT and the team of SeniorWeb were more than willing to disperse and propagate their experiences, so these successful methods could be applied in others countries, language regions or other cultural contexts. Dissemination of the project's results were made at both academic and target group conferences, in bi-lateral workshops with project community partners and in (inter)national workshops with online senior communities and other collaborative platforms with the same target group.

SeniorWeb's and UNU-MERIT's activities yielded innovations in the following fields:

Process/methodology

- With the development of new activation and mobilization methodologies for the creation of a new web contact service for SeniorWeb new service concepts and community practices were explicated.
- Besides community development, with SeniorWeb being able to apply co-creation and other participatory methods in their own community, the activities also actively contributed to more sustainability of participation among the senior members.

Integration of technologies

- During the research SeniorWeb's new web contact service was developed by their programmers. With the project's results and the member's input this tuned out to be both an adaptation of SeniorWeb's existing web contact services, interfaces and functionalities and new possibilities, features and functions.
- During the research special attention was paid to elderly needs and preferences as well as to the effectiveness of technically mediated social interactions.

Content/activity

- New online offers, innovative activities, course material and tutorials were developed, which especially took SeniorWeb's members needs and interests into account.
- After the project, further content, activity innovation, application of co-creation and other participatory methods will continue both as on the basis of earlier work, which was improved and streamlined during the project and a result of the project's activities.

2.6 Internationalization of community development

Wikimedia Germany disseminated their experience to other chapters and during the Wikimania Conferences in Washington (2012) and Hong Kong (2013). Besides that TAO had several other educational outreach activities, such as experience transfers where SeniorWeb NL both Seniorweb CH and Seniornett Norway invited to discuss learning centres, marketing strategies, their websites, computer support service, business models, financing and their general policies.

3 Software Development

Existing online community platforms often do not offer the best possible accessibility/usability experience for elderly users or new users in general: user interfaces are not always as clear and intuitive as they should be, functionalities are sometimes hard to understand at first sight, assistive functionalities for people with disabilities may be absent, while help pages may be hard to find or badly structured.

Usability and accessibility improvements from a technical point of view have been developed for the CMS that the Wikimedia Communities and the Seniorweb CH Community are running – MediaWiki and Drupal.

3.1 Accessibility Improvements of MediaWiki

During the first project phase, the assessment of the platform of the German Wikipedia (de.wikipedia.org) and recommendations for improvement are described in a test report. The tests have been carried out by a group of blind and multiple-handicapped individuals according to the WCAG 2.0 guidelines of the W3C consortium, which cover all areas of the POUR principles.

Moreover, test tools such as WAVE, Web Developer, CCS2.0 (a color contrast analyzer) and script code analysis have been applied. For many drawbacks found (such as missing semantic structuring, no linked images, incorrect markup of data tables, inaccessible CAPTCHAs etc.), recommendations for authors and authoring tools are given.

The identified issues can be divided into several categories:

- Accessibility issues localized at the core of the MediaWiki platform (the underlying CMS software of Wikipedia) can be solved by programmers with access to the source code of the MediaWiki instance used for Wikipedia. These contacts directly work for the Wikipedia Foundation located in the US.
- Community based accessibility issues. In order to enhance accessibility of Wikipedia not only the underlying software must ensure accessible interaction and perception but also every single article must be written in an accessible way. In order to achieve this, the whole Wikipedia community must be sensitized, informed and taught in how accessible content is written.
- A third category in-between the two mentioned ones can be tackled and solved by the various Wikimedia chapters themselves. Thanks to the valuable collaboration with WM Germany, some issues have already been fixed, which is actually ongoing during August/September 2013.

Some of the problems identified for de.wikipedia.org are discussed in Wikis (e.g. Meta Wiki, Blind Wiki) but a similar systematic approach based on the WCAG 2.0 guidelines has not been considered before.

During the second project phase, the results of the first phase have been promoted into the (developer and publisher) Wikimedia community, in order to spread impact of accessibility improvements.

In order to establish an ongoing improvement process, an “Accessibility Tracking” Group Page (https://www.mediawiki.org/wiki/Groups/Proposals/Accessibility_Tracking) has been developed and brought to life within the Wikipedia resp. Mediawiki ecosystem.

The core element of the group page is an interactive table summarizing the results of the test report. Every single issue is represented with its WCAG 2.0 test criterion number, a traffic-light-like symbol indicating whether problems could be resolved or by whom they best get tackled, a short description of the problem and a column for additional information. The original test report is directly linked.

The group page will be open for editing to everybody. Issues can independently be resolved and traffic lights can be changed accordingly. We expect new accessibility issues to be added and we hope that also issues from other than the German chapter will be entered.

Besides the tracking system, an accessibility checklist for authors and publishers has been developed and integrated, as well as an assistance tool (CAC – Content Accessibility Checker) which analyzes accessibility issues on MediaWiki based websites. The CAC tool is also published on GitHub under the Creative Commons Licence (CC BY 3.0 CH):

<https://github.com/Access4all/ContentAccessibilityChecker>

3.2 Usability Improvements of Drupal

Three usability requirements have been selected from a list of requests from the Drupal community which are essential for web sites such as seniorweb.ch: link management, dynamic properties (in the first project phase) and assisted translation management during the second project phase.

A central issue in content management systems is the assurance of link integrity such as avoiding dead links to other documents. In order to address the problem, a *link management component* has been defined for Drupal which periodically checks the link integrity. It is an improvement over the Drupal 6 link checker module. The improved component contains a comfortable user interface and generates statistical information.

As a side effect, a *link checker for newsletters* has been developed. In order to avoid newsletters with broken links or image paths, a quality assurance component can be added. Before sending, all links included are extracted and validated. A notification component allows for re-considering the newsletter.

Dynamic properties are a new concept for defining flexible sets of data records. Defining a list of events on an online community platform was, until now, only possible with a fixed set of fields. With dynamic properties, the definition of a more flexible event list is possible. The newly introduced concept also has influences on e-commerce systems; online shops, for example, with their huge variety of products can be implemented in a much more flexible way.

All enhancements are implemented and are in the publishing process; the link checker for newsletters is already in use on the seniorweb.ch platform.

During the second project phase, an important requirement has been identified and implemented for multi-lingual web sites such as seniorweb.ch. The *Translation Management Tool* (TMGMT) has been designed and implemented, which supports the translation process for website content. The CMS now provides high quality support for multilingual workflows, and even unqualified editors who are not that experienced in multilingual development are able to work with it.

The process design has not been decided solely by our partner *MD Systems*, but depended on the opinion building and decision making process within the Drupal community. However, MD Systems

largely influenced the process design and implementation as a main contributor to the Drupal Open Source CMS, based on experiences with the seniorweb.ch platform.

As a nationwide organization in Switzerland, Seniorweb has set itself the goal to communicate uniform in at least the three official national languages: German, French and Italian. This is important for Seniorweb, to not only limit their presence to the swiss german part of Switzerland.

The manual management of the translation process is only possible for small web sites with mostly static content. Different translation strategies and a variety of web assets for medium and large web sites need tool support.

The following requirements for an assisted translation component have been identified:

- different translation services (“unqualified” editors, professional translation services)
- different implementation strategies (immediate publication after translation, “after-review” publication)
- rework of translation based on feedback/review to translated content
- preview function; facilitates layout checks due to e.g. longer/shorter translations compared to original text lengths

The TMGMT component introduces a layer for managing multilingual processes across the whole CMS with a uniform process, its central term is the concept of a *translation job*. Users (or the system itself) create jobs and have a management overview over all jobs and its progress. Jobs can contain multiple documents and each of those can contain structure. The structure is preserved along the whole translation and review process.

Every job can be assigned to a translator and an optional review process allows quality assurance with communication between translator and the reviewer.

A translator can be a local user (in the own CMS) and users with the translator role have a simple user interface that is dedicated to translation. In partnership with professional translators, this interface will be constantly improved. Content creation thus is completely separated from translation.

Online service providers can also act as translators. Meanwhile, multiple companies offer access to networks of human translators that can provide high quality translation. Such language service providers can offer translation at a very low priced rate and with low translation latency. Often, translations can be expected within a few hours.

The TMGMT component for Drupal has already been published (<https://drupal.org/project/tmgmt>).

3.3 Internationalization of software development

The results of this subproject have been presented at numerous conferences: AALforum in Lecce (2011), Eindhoven (2012), Norrköping (2013), Wikimania in Washington D.C. (2012).

4 Impact Analysis

For the impact analysis, the TAO research team had to measure the impact of selected methods for mobilization, inclusion and motivation developed in this project and provide both the Evaluation team (SP 6) with the necessary quantitative results needed for evaluation purposes and the Action Research team (SP 4) with insights to the characteristics and the psychosocial consequences of Internet usage of the target public and the effectiveness of selected measures for mobilization.

The context analysis is an integral part of impact analysis because it defines the scope in which the impact analysis was carried out and illustrates a broader range of activities that aim at similar targets as TAO and to which TAO activities and results can be compared. Next to that a geographical scope was provided in which the TAO activities take place and to what extent this scope is comparable to other countries.

4.1 Two-wave Survey among Elderly Beginners

The issues of the psychosocial consequences of Internet usage in the elderly as well as the consequences of seniors' participation in online communities have produced a considerable amount of research in the recent decades. At the start of TAO, the literature on these issues was vague and revealed conflicting results. Other problems of the research at that time were small sample sizes which have a high risk of selection bias and cross-sectional study designs from which one cannot draw causal inferences. Furthermore, data from the countries that participated in TAO were nearly not available.

4.1.1 Methodological considerations

Therefore, the TAO survey utilized a rationale which tried to facilitate a comparatively strong research design which allowed drawing causal conclusions. Methodologically, the claim of causality requires high standards. Within health research or epidemiology, causality is given – among other criteria – when:

- there is a clear temporal relation (before/after),
- the relation is plausible,
- the relation is strong,
- the relation is specific,
- the relation is consistent with the current knowledge,
- the study results can be replicated.

In order to secure many of these criteria, the main features of the TAO survey research design were

- a large sample size,
- a longitudinal data collection in two waves,
- the utilization of well-known and – if available – tested questionnaires and instruments,
- the application of multivariate statistics.

The main outcome domains were defined as mental well-being and (real life) social inclusion.

The data collection was carried out via the Web-platform SurveyMonkey^(R) for elderly online and simultaneously with a paper and pencil questionnaire for elderly offline. The questionnaire contained the following contents:

- Sociodemographic characteristics (including social inclusion variables; mainly taken from the European Social Survey Questionnaire)
- Computer- and Internet use (e.g., intensity, duration, contents; mainly taken from the GVV WWW User Survey)
- Mental well-being (Mental Health Index – 5)
- Psychosocial Consequences of Internet Use (18 items subscale of the Internet Consequences Scale – ICONS)

4.1.2 Wave 1 – data collection and results

The data collection in wave 1 (W1) turned out to be successful as we could recruit more than 3.100 participants. Analyses of the socio-demographic data and subsequent comparisons with the most recent European Social Survey data from the Netherlands, Germany and Switzerland revealed that our sample was in many aspects representative for the 60+ years population in these countries.

The descriptive results revealed the following about senior onliners. They:

- Are well socially included in real life,
- have a very good mental well-being,
- use computers and the Internet for a long time (40% use computers since before 1990),
- have generally made positive experiences using the Internet,
 - use any kind of Internet content, however, to a different degree: social media, active contribution to Wikipedia; online banking; political information seeking.

In the next step, it was tried to find out which issues of well-being and social inclusion were associated with being an onliner (vs. being an offliner). The multivariate logistic regression analysis showed that being an onliner was associated with:

- Younger age (below 70),
- Male gender,
- Higher education,
- Good mental-wellbeing (above median),
- Not being in a partnership,
- No person to talk to,
- Not living alone,
- Many real life pro-social activities.

From these apparently conflicting results (e.g., not being in a partnership vs. not living alone) one can conclude that being online serves different needs, namely those of seniors who are socially excluded and those of seniors who are socially well included. The results on age, gender and education are well-known from other research.

Another research issue was to find out which variables were connected with social media usage (Facebook and similar websites). The following items were significant predictors in the final regression model:

- Less than tertiary education,
- Younger age (below 70 years),
- Longtime Computer experience (since before 1990),
- Information seeking online daily,
- Online entertainment activities at least weekly,
- Youtube visits at least weekly,
- Seeing friends at least once a week,
- Prosocial activities at least once a month,
- Positive psychosocial consequences of Internet use (above median).

We can conclude that social media usage (which happens less often than using other Internet-applications) is associated with high social inclusion and affinity to computer use and to the usage of other Web-related activities. Social media usage is not significantly related to mental well-being.

4.1.3 Wave 2 – data collection and results

The results so far have given information on associations between our main outcome domains (mental well-being and social inclusion) and Internet/social media usage of seniors. The pivotal analysis of causal relations is based on matching wave 1 (W1) with wave 2 (W2) data. One year after W1, online seniors who provided an e-mail address for further participation in the survey were asked again to fill out the questionnaire. Apart from minor modifications, the questionnaires of W1 and W2 were identical. We could recruit 803 participants. Data of 670 seniors were matchable with W1 data.

In terms of our main research domains we found nearly identical results in most regards. Neither computer/social media usage, nor social inclusion, nor mental well-being revealed major shifts within the 12-14 months between W1 and W2. Only the psychosocial consequences seemed to be regarded less positively in W2 compared to W1. The participating seniors apparently led a life in stability with regard to well-being and social inclusion.

Although our sample in principal was large enough to statistically detect even subtle differences, this data situation made it nearly impossible to find any causal relations. So, it was no surprise to the research team that, when analyzing W2 social inclusion and mental well-being while adjusting for W1 social inclusion and mental well-being, no Internet activity-related variables turned out to be significant predictors. Our longitudinal survey confirmed a common wisdom among health researchers, namely that historical patterns predict future patterns.

4.1.4 General conclusions

To sum up the results from W1 and W2, we found interesting associations between low as well as high social inclusion with Internet usage, an association between good mental well-being and Internet usage, and we also found an association between high social inclusion and social media usage. These associations, however, did not turn out to be causal relations when W1 data were matched with W2 data.

In the light of these results, we conclude that Internet and social media usage in our survey do not enhance well-being and social inclusion. Contrary to many assumptions, we assume that Internet and social media usage are rather 'selected' by seniors according to their needs and according to their mental capabilities. Thus, socially well included seniors, which build the majority of onliners, use the Internet to broaden their communication pathways. In our survey, only few socially isolated seniors used the Internet for staying in contact with others.

From a psychological perspective, the 'selection'-hypothesis makes more sense than the 'causation'-hypothesis. Using the Internet and social media is ambitious and challenging to elderly beginners. The prerequisites are rather high in terms of self-esteem and self-efficacy; computer anxiety, on the other hand, needs to be low. Being online and using social media is much easier when the mental well-being is high, social inclusion is strong, and – not to forget – one is used to use the computer. Many predominantly male participants in our survey have started using the computer in their working life and have maintained the use of a computer after retirement.

4.2 Context Analysis

The context analysis aims at finding out how different kinds of organizations in different European countries master the challenges that are aligned with organizing and collaborating with older adults online. We basically differ between Wikimedia Chapters and community organizations like SeniorWeb NL or Seniorweb CH. In addition, we differentiate between profit and non-profit / not-for-profit organizations; local, regional, national and international scope of the organization; and key purpose of the organization (e.g. communication platform, collaboration platform, participation platform).

Before the context analysis started, we created a common analysis framework that describes for each type of organization what information we search for and how we interpret this information. Subsequently we identified relevant organizations in twelve countries outside the TAO consortium's home countries (the number of countries is relevant for the sustainability and internationalization goals of TAO) that suit best as a case study for TAO against the background of the relevant conditions in each country, as is explained in the European and National Policy Context (chapter 4.2.1). To carry out the case studies (one per country plus Wikimedia chapters that appear useful to examine, based on their activities or strategies targeting older adults), we collected data and information via phone interviews. The interviews shall were recorded and summarized. The analysis below focuses only on the relevant aspects of the conversation for our context.

4.2.1 European and National Policy Context

In May 2010, the European Commission adopted e-Inclusion as one of the main topics of the 'Digital Agenda for Europe' and consequently, the concept entered the debate on aging populations in full force (EC, 2010a). E-inclusion is, according to the EC, a possible strategy to achieve active aging. The concept is strongly related to other European policies on social inclusion, for example, and is conceptualized as a "focus...on participation of all individuals and communities in all aspects of the information society" (EC, 2010a). According to the EC, e-inclusion is the solution to the gaps in Information and Communications Technology (ICT) usage, and moreover, will improve quality of life and social participation and thus will reduce social exclusion (EC, 2010a). The EC furthermore claims that e-inclusion methods are an effective way of reaching vulnerable social groups such as older people (Stegeman et al., 2012). A multitude of programs specifically designed for older people therefore focus on creating opportunities to make them increasingly active online. It is also stated that these programs decrease dependency and increase responsibility, thus leading to living more active lives as people age (Stegeman et al., 2012).

However, most critical e-inclusion and innovation policy studies argue that the concepts 'access' and 'usage' are on the one hand too techno-deterministic and on the other hand insufficient as policy terms to get people involved online and informed about e-inclusion (Maier-Rabler, 2002; Golding and Murdock, 2001; Light, 2001; Burgelman, 2001; Cammaerts and Burgelman, 2000; Warschauer, 2002). Besides our focus on the EC, there are plenty of national initiatives of this – too techno-deterministic – kind, too. In this chapter, we will present an analysis framework for e-inclusion and innovation policy in Europe, applied to several case studies to highlight national policies and explain how similar or different they are from the EC's e-inclusion policy.

The link between e-inclusion and innovation policy was best described by Maier-Rabler (2002), when she coined the concept of e-policy as "the strategy for the introduction of ICT in a certain social environment." With her model of new e-policy (see Figure 3), she proceeds from infrastructure-oriented measures, linked to bridging the digital divide, to identity-oriented measures to close the knowledge gap between different generations (Martinson and Minkler, 2006). This model should "make people understand how they are affected by the new media and which individual choices they have" and "eventually lead to the acquisition of the desired capabilities in order to develop a self-determined style of utilization of the new information and communication technologies" (Maier-Rabler, 2002). Describing the new e-policy model, Maier-Rabler sees a shift between policies on the technological/infrastructural level of (technical) access and (technical) skills, to policies about more individual-based aims focusing on capabilities and understanding of new media and digital technologies (2002).

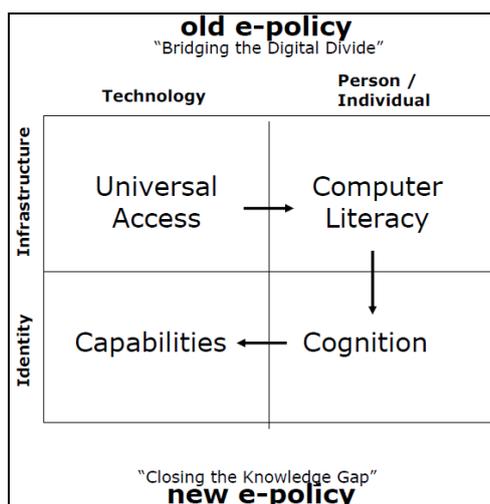


Figure 2: Model of a new e-policy. The predominating information-culture constitutes current e-policy practice. The shift suggested by Maier-Rabler (2002) is from infrastructure-oriented to identity-oriented measures.

These e-inclusion and innovation policies, both focusing on access, literacy, and cognition as capabilities are top-down, since the policy makers decide on which strategies to aimed at and to what extent a country focuses on e-policy on a infrastructural, technological, capacity or ability level. Besides these top-down approaches, e-inclusion and innovation policy can also be emulated by smaller or other national initiatives or organizations that choose to pursue e-policy and to close the knowledge gap bottom-up. To assess the directions and degree of successful e-inclusion and innovation policy in Europe that has been pursued, we apply both the bottom-up initiatives as the top-down approaches to the e-policy model.

To see overlaps between e-inclusion and aging policies in Europe we follow the approach of Sapir (2006), clustering Europe according to socio-economic situation and care model zones:

- The continental welfare state (Belgium, France, Germany, Luxembourg, Netherlands, Austria)
- The Scandinavian welfare state (Sweden, Denmark, Finland)
- The Anglo-Saxon welfare model (UK, Ireland)
- The Mediterranean welfare state (Italy, Spain, Portugal, Greece)

And, as added by Ivan (2009), with the accession of the new 12 EU member states (in 2004 and 2007):

- The Eastern European welfare state (Eastern European countries, such as Romania, Bulgaria, former Yugoslavia and the Baltic countries).

However, together with describing the e-policy-model of several European countries, Maier-Rabler also clustered European countries and labelled them, differentiating "between e-strategies and e-actions" and categorising "strategies and actions into access, skills/literacy, cognition/awareness, and capability driven policies" (2010). This led her to create the following clustering with labels "drawn on the main characterizing element of the cluster" (Maier-Rabler, 2010):

- Nordic Openness: Denmark, Finland and Norway
- Anglo-Nordic: United Kingdom, Ireland, the Netherlands and Sweden
- Stuck-in-the-Middle: Austria, Germany, Slovakia, Slovenia, Italy, Spain, and Malta
- Traditional National Individualists: France, Belgium, Portugal, Poland and Hungary
- New Achievers: Estonia, Latvia, Lithuania, the Czech Republic
- New Uncertain Conservatives: Greece, Cypress, Bulgaria and Romania
- Little Princesses: Luxembourg and Switzerland

With several overlapping countries, many similarities can be seen between both Sapir and Ivan's (2006; 2009) and Maier-Rabler's (2010) approach, but "even when the goals of policies are the same

for a number of countries or regions, or sectors, the difference in specific contexts may call for different policy solutions” (Wintjens and Nauwelaers, 2008).

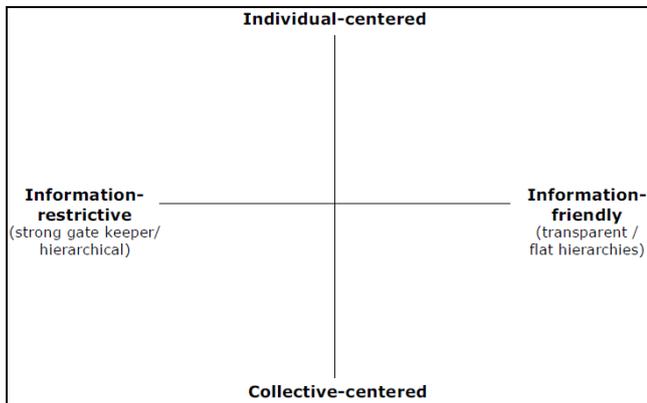


Figure 3: Information cultures and e-policy (Maier-Rabler, 2002)

For our research, we not only elaborate on political, economic, technological and demographic trends in Europe, but also on social and innovative trends, and we attempt to label and cluster the bottom-up initiatives and approaches in Europe. Maier-Rabler created a matrix in which information cultures are assigned to two axes (see Figure 3). On the one hand the axis of either individual-centered or collective-centered societies and on the other hand the axis of information-friendly (open, transparent) or information-restrictive (gate-keepers) cultures.

Where top-down national policies are considered as information-restrictive and most of the times collective-centered, opening up these policies for more social innovation is considered as information-friendly. These bottom-up initiatives and approaches are an example that e- policy does not “lead automatically to the well-known either or not, connected or not-connected, haves or have-nots, but to a variety of patterns of involvement” (Maier-Rabler, 2002). The varying national e-policies are hence illustrated in figure 4, where the European information cultures are mapped, according to the earlier mentioned labels.

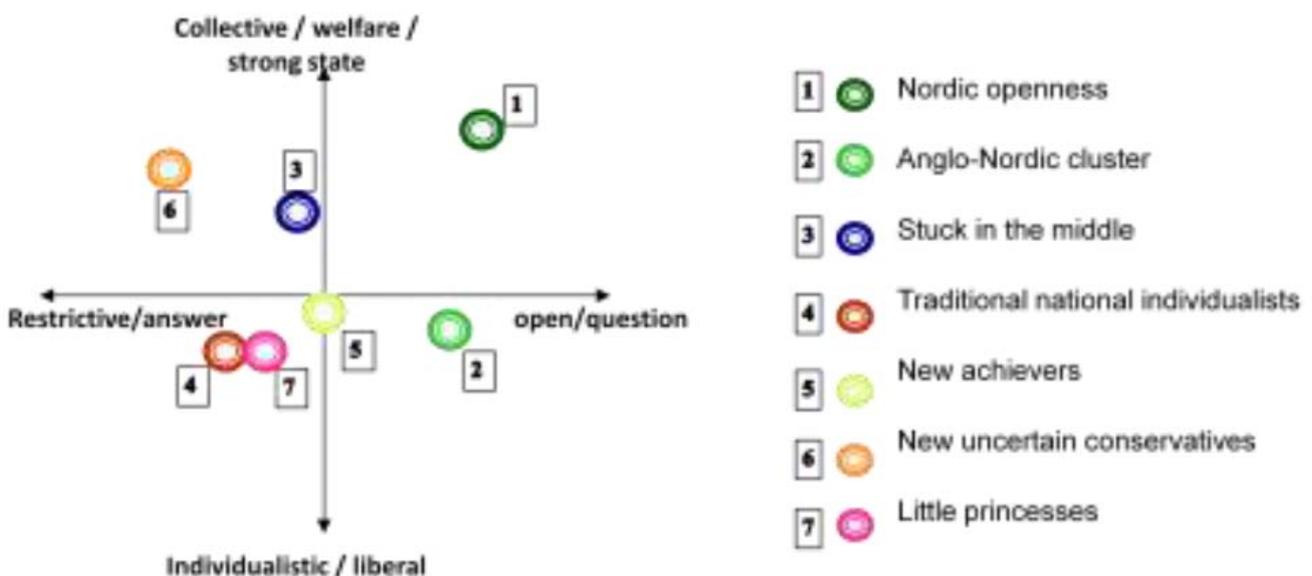


Figure 4: Mapping European information cultures (Maier-Rabler, 2010)

To illustrate that bottom-up involvement might give a different character to a country’s e-policy, we will elaborate different case studies, such as several European Wikimedia Chapters and Online Senior Communities in the following chapters.

	Nordic Openness	Anglo-Nordic	Stuck in the Middle	Traditional National Individualists	New Achievers	New Uncertain Conservatives	Little Princesses
WikiMedia Chapters		Sweden	Spain	France		Romania	
Senior Communities	Norway Denmark	Netherlands (see chapter 2.5)	Slovenia	Belgium	Latvia	Greece	Luxembourg

Table 1: European dimension of TAO Context Analysis

4.2.2 Wikimedia

4.2.2.1 Wikimedia Foundation

- Wikimedia Foundation
- San Francisco, California, USA
- <https://wikimediafoundation.org>
- charitable, not-for-profit, membership-based association
- 170 employees – 6500 volunteers
- develop and maintain open content, and providing it to the public free of charge
- public donations, fundraisers, sponsorship, brand merchandising

Key activities with adults aged 50+: Wikimedia Foundation is currently not targeting adults aged 50+ specifically. Including 85-year-olds in Wikimedia projects doesn't matter more than including 16-year-olds. What matters to the foundation's goals is including people who are knowledgeable and want to contribute, for example to topics the collaborative encyclopedia Wikipedia, the foundations' most well-known project with more than 280 multilingual editions. Strategies to encourage people to participate in national editions of Wikipedia include: Engage people in real life activities around free knowledge, offer the opportunity to support chapters' activities on a local level, and finally, offer affiliation for people living in regions where there are no chapters yet or where chapters might not be feasible. In addition to Wikipedia, there is a family of currently 13 other Wikimedia projects, including the dictionary Wiktionary, the educational resource Wikiversity or the free knowledge base Wikidata.

Key revenue streams: Wikimedia Foundation relies on public contributions and onsite fundraisers to fund its mission. Wikimedia Foundation also increases its revenue by alternative means of funding such as grants, sponsorship, services and brand merchandising. Access for search engines and similar businesses to Wikimedia databases in exchange for fees used to be a revenue stream, but is no longer offered to new customers. In 2012, the Wikimedia Foundation launched the Funds Dissemination Committee (FDC), which disseminates funds to eligible entities, including national Wikimedia chapters.

Challenges: Getting more people to edit Wikipedia is among Wikimedia’s current goals. The number of people who contribute five edits or more each month to Wikipedia has fallen from 8800 authors in 2008 to 6500 authors in 2013. This means between 2008 and 2013, 2000 active members, about 25 percent, have left the community. One of the factors contributing to this development is an increasingly less inclusive community of contributors with complex norms and policies. Another important factor is the competition of Wikipedia with newer high-profile like Facebook. A third factor is the continually improving quality of articles on Wikipedia: It is difficult to add to an article that is already extensively sourced and fact-checked. Researching, sourcing and writing articles has become a very time-consuming activity.

4.2.2.2 Wikimedia España

- Wikimedia España
- Valladolid, Spain
- <http://wikimedia.org.es>
- not-for-profit, membership-based association
- organization of activities that promote the creation and release of open content, including projects hosted and supported by the Wikimedia Foundation
- Wikimedia foundation grants, public donations, public grants, membership fees

Key activities with adults aged 50+: Wikimedia España tries to get people of all ages involved with creation of open content in public workshops and courses at schools, universities, museums and other public institutions. Since 2011, the photo contest Wiki Loves Monuments is one of the major and most successful activities. The pocket book “Wikipedia, from A to W” was produced as a guide for librarians, archivists and people in the media seeking to become involved with and support the use of open content on Wikipedia. Wikimedia España advocates for free access to knowledge in the media. The chapter promotes the use and improvement of Wikimedia Foundation projects, as well as other projects that fall within the scope of its statutes.

Key revenue streams: Wikimedia España is mainly funded by grants and donations.

Challenges: Besides constant struggles to generate more sources of revenue, Wikimedia España is focused on increasing creation and release of open content: Find people who can provide scientific and historical contributions, as well as advice in various fields of knowledge. Get more supporters to produce quality images and articles. Get more supporters to work on revisions of existing content. Improve and update information, documentation, and support for supporters. In order to achieve these goals, the chapter is making the most of existing contacts with universities and cultural institutions. Other challenges lie in the field of public relations: The movement for open content and the chapter itself need to become more visible in the public.

4.2.2.3 Wikimedia Sverige

- Wikimedia Sverige
- Stockholm, Sweden
- <http://www.wikimedia.se>
- charitable, not-for-profit, membership-based association
- 5 employees – 170 members – 2300 volunteers
- organization of activities that promote the creation and release of open content, especially projects hosted and supported by the Wikimedia Foundation
- Wikimedia foundation grants, public donations, membership fees

Key activities with adults aged 50+: While quite a lot of active contributors in Sweden are above 50, the interviewee in the chapter believes activities shouldn’t expressly target older adults. People wouldn’t want to be seen as old or needing extra help. In autumn 2013, Wikimedia Sverige was

invited to a lecture at the senior university in Sweden. To attract new contributors, the chapter focused on knowledge that the audience was already having. Team members sought to find persons among adults aged 50+ who had a passion for certain topics and wanted to contribute to articles that should be on Wikipedia, but are not. Wikipedia Coffee is another activity well suited for adults aged 50+: Community members choose a café in their town and organize a small social event. Writing on Wikipedia can sometimes feel lonely. Wikipedia Coffee is an opportunity to meet up in person, talk about ongoing events and get support from fellow Wikimedians. Wikimedia Sverige plans to organize workshops every other week, beginning in the spring of 2014.

Key revenue streams: One of the greatest challenges in the chapter right now is money. Wikimedia Sverige has issues funding everything they want to do, basically. The chapter has gone from one to five people in less than a year. The chapter is working hard and dedicated to gain funding from various sources and also working towards finding a more sustainable structure for the organization as a whole.

Challenges: Wikipedia needs to be packaged as easy to use when presented to new contributors, even when it is not. The new Visual Editor of Wikipedia will hopefully bring about a big change, especially when trying to get less computer-savvy people to contribute. But bridging the digital divide is not only about technical skills, but also about trust. Older adults don't see computers as necessary or as a natural part of their life. They don't have the same relationship to the Internet as younger generations. They don't trust strangers on the Internet and are, therefore, less likely to contribute. Overcoming the anonymity in online communities is essential in building trust.

4.2.2.4 Wikimédia France

- Wikimédia France
- Paris, France
- <http://www.wikimedia.fr>
- charitable, not-for-profit, membership-based association
- 6 employees – 470 members
- supporting the creation, collection and distribution of open content; workshops at libraries, universities and other public institutions
- Wikimedia foundation grants, public grants, membership fees

Key activities with adults aged 50+: Older adults are included in training sessions by Wikimédia France targeted toward several different types of new contributors. Since March 2013, a fellow for communication seeks to increase contacts with public institutions as well. “WikiPermanence” events are held as a physical meeting between Wikipedians and new contributors, or simply those who want to know more about the operation of Wikipedia and other related topics. Community members at WikiPermanence answer questions, show demonstrations, and provide assistance. Adults aged 50+ are included in WikiPermanence events.

Key revenue streams: Founded in 2004, the French Wikimedia chapter is funded mainly by Wikimedia foundation grants, but also by public grants and membership fees.

Challenges: Many projects were continued despite the lack of funds and capacity to hire new staff dedicated to projects of the chapter. In turn, Wikimédia France focused on continuing successful projects and refrained from starting new ones. Some educational projects did not work as well as people had hoped because of the brevity of the allotted time slots. For example, it proved difficult to properly introduce using and editing Wikipedia in short training sessions. People conducting training sessions learned that new contributors need significant support by tutors; otherwise they will face too many difficulties and will not stay. Mass upload projects are also difficult because of a lot of work needed by few volunteers able to prepare quality uploads. One widely publicized incident in 2013 involved the DCRI (Direction Centrale du Renseignement Intérieur) who forced a volunteer to delete

an article in the French edition of Wikipedia about a French military compound on the grounds that it contained classified military information.

4.2.2.5 Wikipedia Community România

- Wikipedia Community România
- Romania
- <http://ro.wikipedia.org>
- online community
- supporting the creation, collection and distribution of open content in the Romanian edition of Wikipedia
- no revenue streams

Key activities with adults aged 50+: An official Wikimedia chapter does not exist yet. The efforts of the community currently focus on providing support to authors, correcting errors or vandalism in Wikipedia articles, and moderating conflicts in the community. To get more adults aged 50+ to participate, the interviewee proposes authors should write more about the history of their own country; not as a form of nationalism, but because they are knowledgeable about it and can provide content that cannot be found on the English edition of Wikipedia. In his opinion, the community should talk to schools or municipal administrations and support them in writing about their local history or create photos of the places they live in. Key players in these activities could be people who have written books about local history.

Key revenue streams: The Wikipedia Community in Romania currently does not have established revenue streams.

Challenges: Romania is one of the countries with the lowest proliferation of Internet access and computer literacy scores in Europe. The Romanian Wikipedia Community is small compared to other countries. In the experience of the interviewee from the community, Romanian people aged 50+ are often not very computer-savvy and tend to view content in Wikipedia as superficial. Traditional encyclopedias on the other hand were seen as more trustworthy by them. The lower reputation of Wikipedia served as a barrier for participation. Additionally, Wikipedia would primarily serve the interests of an audience that is interested in topics on pop culture or sports. Topics older adults are interested in received significantly fewer contributions. They might feel excluded when they become aware of this disparity in the content. Another challenge is the sometimes chaotic editing process in Wikipedia. For example, many people make suggestions for improvements in the discussion pages, yet these suggestions seldom encourage active authors to rewrite the articles. The Wikipedia Community in Romania needs to attract more contributors in order to overcome this problem.

4.2.3 Online Senior Communities

4.2.3.1 Norway



- Seniornett
- Oslo, Norway
- www.seniornett.no
- Not-for-profit foundation
- 800-850 volunteers – 6 employees – 170 learning centers in Norway
- Offering IT support to senior citizens in Norway, founding of new learning centers and offering support to volunteers and members of Seniornett

- Funding: private and governmental, members pay a small amount

Key activities with adults aged 50+: Seniornett Norway is based in Oslo with 6 employees and a majority on 800-850 volunteers. The board is mainly responsible for the financial matters due to their large network. Their main focus lies in teaching senior citizens in small communities and motivating seniors to use the internet in 170 learning centers spread throughout Norway. Seniornett's business model is characterized by the 50+ year old volunteer community who teach senior citizens in a one-to-one-model about ICT and internet in their own pace. This strong tradition of volunteering is very typical in the Norwegian context because of their long-term commitment and socializing through volunteering. Current projects include the establishment of new learning centers and support volunteers in different locations with workshops and learning material and the participation in EU-projects which have senior citizens as a target.

Key revenue streams: Most funding origins from private and governmental sources and members pay only a small amount.

Challenges: Due to the geographical circumstances (mountains and long distances), one of the main challenges has been to reach seniors and recruiting them and managing volunteers. Besides the geographical circumstances, promoting Seniornett and recruiting new members has been another barrier and lacks of an effective market strategy that might reach senior citizens in small towns.

4.2.3.2 Belgium



Let's communicate together with **Generation 50+**

- People communication (agency of www.seniorennet.be)
- Brussels, Belgium
- Marketing Communication and market strategies for senior citizens
- For-profit organization
- 1.400.000 visitors per month
- Offering marketing consultancy and communication campaigns targeting the generation 50+
- Collaboration with private partners/companies

Key activities with adults aged 50+: People Communication is a marketing and communication agency specialized in the 50+ generation. With 15 years of experience in the marketing to seniors, People Communication's aim is to propose a series of strong communication tools. People Communication also provides marketing consultancy and works proactively with her customers to set up marketing and communication campaigns towards the 50+. They work as the media agency of the successful seniorennet.be, where seniors in the age 50+ help each other and exchange information online.

Key revenue streams: As a marketing and communication agency specialized in the 50+ generation, their customers are companies, associations, media agencies, advertising agencies and events organizations etc. who want to communicate towards the 50+ generation.

Challenges: One of the main problems they are facing is volunteer management and recruiting skilled volunteers who are knowledgeable and might attract senior citizens. Within their organization they have experienced that working together with volunteers and the amount of freedom they are

given might cause tension within the community. Subsequently, they face the problem that some communities grow faster than other and are not able to allow more members.

4.2.3.3 Latvia



- <http://www.senioriem.lv>
- Riga, Latvia
- Targeting senior citizens (55+) online.
- Free online platform
- Offering an online platform for interactive exchange between members and providing articles on health and lifestyle for seniors
- Collaboration with private partners/companies

Key activities with adults aged 50+: The main goal of Senioriem is to produce information of target group's interest, as well as offering some services, for example classified ads. So far senioriem.lv is still the first and the sole website for elderly people in Latvia. For the time being only one person Kaspars Odins, has been taking charge of creating original content, acquiring materials from partners, editing and doing some marketing activities. The website was a personal investment by his own company.

Key revenue streams: Senioriem.lv is the product of Kaspars Odins' private company "Midas Eiropa. Ltd." and was established almost 2 years ago. The website's offerings are free and currently only Midas Eiropa is paying for all costs.

Challenges: Kaspars Odins invested in developing the website and all content, while working as a journalist. Currently he is looking for more funds, sponsors or projects, however this is quite hard at the moment in Latvia.

4.2.3.4 Greece



- 50+ Hellas
- Athens, Greece
- www.50plus.gr
- Non-governmental, not-for-profit organization
- 1 salaried employee in administration; 3 executive board members; ad-hoc volunteers according to project needs

- Training of older adults (50+) in the new technologies. To bring older adults' perspectives to the forefront, create visibility for their issues, raise awareness of elder abuse. Create and maintain a network of organizations committed to the support of older adults
- Mainly funded through EU programs (research and development)

50+ Hellas is strongly involved in stimulating activities in favor of older adults. However, it is not focused on integrating older adults and volunteers into its own organization (e.g. through membership). By its own estimate, it mainly reaches persons aged 50-70 years. 50+ Hellas has worked successfully with intergenerational learning arrangements from which both older and younger adults benefit.

There are 700 recipients of a newsletter and 500 subscribers of the Facebook page. An estimated 1.000 persons aged 50-70 are reached regularly. Many of these engage in ad hoc volunteer work but they are not in a continuous work-relation with 50+ Hellas.

Bringing up 25% of self-funding, which is a frequent condition in EU research and development calls, is challenging for 50+ Hellas. Moreover, the funding scheme provides very little long-term security.

4.2.3.5 Denmark

Ældre Sagen

- Aeldre Sagen
- Denmark
- <http://www.aeldresagen.dk/>
- National membership organisation
- 100 employees (fte), 13.000 volunteers; 650.000 members
- Key activity & target group: Facilitating the access to and use of the internet for older adults 50+
- Members pay an annual fee

In the beginning the initiative was focused on advancing the interests of older adults in general. Nowadays, the focus is on accessing the internet and using it in all possible ways. The organization has become very visible and has a strong impact on the political debate. Aeldre Sagen's Facebook page is enormously popular and a new community website was launched recently. Among its digital offers is also a website dedicated to the intergenerational communication between family members.

Not all of Aeldre Sagen's activities are online. There remains much "traditional" journalistic activity for hardcopy magazines. Aeldre Sagen stresses that it wants to reach all older adults, not only those who are online.

The activities and services involving older adults are extremely widespread and driven from the bottom up. The only condition for an activity to take place is that a volunteer's proposal (e.g. computer class, dance lessons) is met with interest from the community.

4.2.3.6 Luxembourg



- LuxSenior
- Luxembourg
- www.luxsenior.lu
- Created as the result of a ministerial policy and today integrated in the federal administration (Ministry of families and integration).
- No designated employees (rather mandated persons at the Ministry), volunteers or members
- Provides online information about Active Ageing to persons aged 55+
- Fully financed by the state of Luxembourg, via the 'Ministry of Families and Integration'

LuxSenior, founded in 1998, is a website which provides information about 'Active Ageing' to persons aged 55 and above. Being a static (unidirectional) information platform, LuxSenior does not offer visitors the opportunity to interact with other visitors. The website is a result of a ministerial policy, and therefore also run by the 'Ministry of Families and Integration'. LuxSenior does not have any designated employees; instead, various persons at the Ministry are mandated to publish information on the platform. The platform and its maintenance are fully funded by the state of Luxembourg. LuxSenior is well-known in Luxembourg, also because the local internet courses for older citizens (organized by the senior clubs 'Club Sénior') have raised the awareness of the information platform. In the future, LuxSenior aims to make the website more dynamic, e.g. by offering opportunities for interaction and providing more links to other relevant websites.

4.2.3.7 Slovenia

- The Third Age University of Slovenia
- Ljubljana, Slovenia
- <http://www.univerzazatretjeobd-drustvo.si>
- joint program by 45 Slovenian universities
- 300 study groups – 5.000 participants
- provide access to education to older adults, influence the social and economic status of the elderly, education and consulting for national and international organizations
- public grants

Key activities with adults aged 50+: The Third Age University of Slovenia is a voluntary educational movement, meant for 50+, mostly retired people, but also for elderly workers. It has been established to provide access to education to older adults and to contribute to changing the social and economic position of the elderly. At present, it encompasses 35 universities all over the country. Each Slovenian university organizes study circles, lectures, and some of them also summer universities, educational camps, study trips, etc. An introductory course on using and contributing to Wikipedia has been in place in the capital city of Ljubljana for several years.

Key revenue streams: The Wikipedia course is funded by a grant from the city of Ljubljana. People pay for computer literacy courses at the Third Age University, but not for the Wikipedia course. The decision was made because the administrators believe people would not be willing to pay for it. Currently, getting another grant to fund the project is the main goal. Secondary goals are doing more coursework and publishing more articles on Wikipedia.

Challenges: A challenging aspect during the organization of the Wikipedia courses is the interdisciplinary background of the target audience. The courses must allow for a wide range of topics participants can contribute to. Lecturers have to assess what each person is most interested in and help them find topics they can contribute the knowledge to – everyone is bound to be knowledgeable about something. Additionally, Wikipedia can be daunting for newcomers, even if they are already well-versed in using computers and the Internet. In a nutshell, lecturers had to bridge diverging interests as well as differences in computer literacy skills among the participants.

5 Outcomes, internationalization and impact

In this chapter several outcomes of our project will be elaborated. We will discuss the handbook that has been produced as output of the project, but also our internationalization efforts in the form of workshops to share our knowledge. Furthermore we will discuss the impact of TAO in two more exploitation examples of how the TAO knowledge was used in order to cooperate in two projects with respectively WikiMedia Netherlands, and the Hotel Management School Maastricht and Proteion Thuis (a care provider). All these outcomes show how the output of TAO could be transferred to new and challenging activities, were both the community and the research partners of TAO could transfer their TAO accomplishments.

5.1 Handbook

During the course of the project one of the main targets was to provide information concerning the findings, results and outcomes of TAO to the public. To document the results of the research on activities implemented by the community partners and the research on older adults' use of ICT and online communities, the TAO Handbook was created as a useful tool for organizations and individuals wishing to involve older adults in their community's activities. As a base for activation, integration and motivation of older people the handbook targets two main groups: managers and staff of online communities and online collaboration on the one hand; trainers and multipliers in online communities and collaboration who wish to include older adults in their online activities on the other hand.

The contents of the Handbook are continually enhanced by editing and adding relevant experiences made by project and non-project members of the Community of Practice. The idea of the Handbook is not only to make the TAO results useful for practical implementation by professionals and volunteers, but also to benefit from the experience of people experienced in the field of online communities and older adults. Not only members of the TAO research team but also external stakeholders and every person of interest is able to use and edit the Handbook, including their own experiences. All contents are under the Creative Commons Attribution/Share-Alike License (CC-BY-SA), meaning they are free for use, dissemination and modification. It is drafted in the collaborative Wikiversity, which hosts learning modules that are freely accessible and that anyone can edit (<http://en.wikiversity.org/wiki/TAO>). In a vivid Community of Practice everybody is free to contribute, improve or revise the content of the handbook. In this way a collaborative drafting takes place – also an actual version of the handbook will be published at the end of the TAO project, the Handbook can be seen as an unfinished draft all the time, as it will remain open for changes and supplementations also in excess of the project. During the project the Handbook was presented and disseminated in various ways and to a great variety of potential contributors, aiming to include and foster the exchange between actors in fields related to the TAO aims (facilitating and promoting access of older adults and people in early retirement to online social communities and online collaboration projects).

The Handbook aims to become the key instrument of an international Community of Practice in the field of online communities for older adults and help to improve the interactive online collaboration and social interaction of older adults in such communities. Therefore its contents try to cover all relevant topics and a broad array of potential questions and problems connected with online communities for older adults, including e.g. volunteer management, technical usability or business models. The structure of the Handbook is easy to understand, all the contents are presented in sections, which are made up of modules with introductory texts and resources. Starting with a general introduction on how to use and contribute to the Handbook to sections on TAO activities, methods and instruments, technical and pedagogic tools, background information (e.g. on older adults' and volunteers' needs) etc. Also the experience and comments made by external community members or other research projects are incorporated in the contents. A completed list of the Handbook contents can be found in Annex I.

Addressing an international Community of Practice the main language of the handbook is English. Although parts of the Handbook are also available in German, most of the Handbook will be left in English, as the translation and/or creation of contents in other languages is desirable for sure, but, given the limited staff resources, not a priority.

5.2 Workshops

5.2.1 Maastricht

On 22 May 2013, UNU-MERIT offered an open workshop for different European organisations involved with IT learning and senior online communities. The overall aim of the workshop was to identify common problems within the field of online senior communities in order to develop new branding and market strategies for senior citizens. Furthermore, strategies of volunteer management within communities and learning centers for senior citizens have been addressed from a European context. The various European organizations, ranging from Norway, Belgium, Netherlands, Belgium and Switzerland, participated in group discussions on the topics of senior online communities, volunteer management and proactively exchanged experiences and practices.

5.2.1.1 Program

Since the main focus of this workshop was based on interactive group discussions, there were only two short introductory presentations. The workshop has been divided into two parts:

The first moderated session addressed 'community' and functioned as a small introductory round from each organization and the second round focused on 'financing and branding'. Then, both groups would join the plenary session where the outcomes of both discussion rounds were summarized. The second part of the workshop focused on the volunteer management and recruitment of members and exit strategies.

Introductory presentations:

Rüdiger Glott (MERIT, Maastricht University) 'The potential of the silver market'

Stijn Bannier (MERIT, Maastricht University) 'Involving senior volunteers'

5.2.1.2 Moderated session 1: Branding and marketing

Round 1: 'Community'

The participants have been randomly divided into two groups in order to discuss the topics related to 'community' and the problems each organization faces. After a short introduction round, participants asked questions to their neighbor and presented the organizations' goals to the other group members in form of a short summary. At the end of each discussion round, participants exchanged experiences on drivers and barriers that they faced with attracting and retaining community members.

Finally, participants mentioned that there is the danger of rude online behavior that might offend other users and lack of respect/tolerance. This behavior might intimidate those users who are insecure about their knowledge or the quality of contribution as they fear humiliation and therefore diminish their participation. Another problem is the miscommunication due to cultural differences and different generations. Furthermore, it became clear that there is a lack of dedicated and experienced trainers/volunteers online. Participants suggested that more visual communication is needed for lazy literate users.

Round 2: 'Re-financing'

The second session of the day addressed the issue related of financing, promoting and branding. Participants discussed the role of third parties and different strategies to promote the organization. One central concern was the long term planning and learning and better marketing strategies, as well as solutions for paid subscriptions that might hinder some members of joining.

5.2.1.3 Moderated Session 2: Volunteer management

During the final session of the workshop, the central aspect was volunteer management. Both groups had three different questions that addressed different aspects of volunteer management, namely: recruitment, exit strategies, involvement, keeping and coaching, rewarding and accessing volunteers. The final outcome of each question has been summarized in important successful and unsuccessful aspects, called 'Do's and Don'ts'.

In the first group, one central aspect of the discussion was on the fact that volunteers want to be asked and feel important and appreciate positive comments and criticism. Participants agreed that there is a danger in giving volunteers too much responsibility and autonomy without correction or a rather negative approach where they might feel de-motivated.

In terms of exit strategy and decision making, participants experienced that the situation is mostly self-evolving and that honest talks with the volunteers is widely appreciated and looking for alternative tasks and collaboration for those who did not succeed with the old tasks. Another important aspect that has been mentioned is the need for more didactic skills in order to improve the coaching of volunteers. Furthermore, participants agreed that co-creation is possible, however, volunteers should not be part of the strategy and policy making.

The second group identified a number of issues during the discussion of volunteer management. One barrier is the lack of transparency in finance if the foundation has to report to volunteers how money is used and what strategy is followed. Another challenge that has been mentioned is to find the right balance between commercial content and non-commercial community activities and beliefs / content. Reaching and maintaining credibility is the most important issue. Additionally, communication skills are essential between volunteers and the organization especially if third parties are involved from unauthorized access and if the responsibility and tasks are not clear cut.

As a solution, to these issues, the participants suggested that volunteers should be more included in the decision-making if it affects their activities and the distribution of their resources (money). Additionally, participants agreed on the fact that volunteers should be encouraged to ask for help in order to avoid miscommunication. Volunteers should receive recognition, be involved in some decision making and therefore the organization should inform volunteers in a transparent way and give them responsibilities and a voice.

5.2.2 Ulm

On May 15th, 2013, volunteers from organizations representing older adults met with administrators of online communities and seniors for an open TAO workshop in Ulm which was organized by the Centre for General Scientific Continuing Education (ZAWiW) of the University of Ulm. The Berner Fachhochschule (BFH) acted as a cooperating partner in the organization, with Thomas Gehrig, TAO Project Manager, chairing the event. The central question of the workshop was: How can we help older adults to use the Internet as a personal gain for their everyday life? In the morning presentations provided insights into successful communities' strategies to integrate and engage the "50+" age group. In the afternoon, discussion groups provided an opportunity for participants to talk about these strategies, develop new ideas, and expand their professional network.

5.2.2.1 Presentations

Different online communities presented their strategies for encouraging members aged 50+ to take an active, long-term role in their offerings. Their practical knowledge was complemented with findings from project TAO.

Markus Marquard (ZAWiW, University of Ulm): "How ageing can be enriched by online communities" The third age is heterogeneous. Therefore, online communities should not develop their strategies based on age, but based on needs, motives and skills of members. Action Research with partners

SeniorWeb.NL, SeniorWeb.CH and Wikimedia Germany lead to the development of a typology of users and strategies on how to address them.

Verena Simon & Frieder Leipold (seniorbook.de): “A network between shrill and beige”. The service was founded in 2011 and offers features similar to competitors like Facebook, with differences geared towards the needs of members aged 45 and above. These differences include an emphasis on privacy and encouraging offline activities of the users.

Alexander Wild (Feierabend.de): “15 years of Feierabend.de – Web 3.0 as a win-win strategy between volunteering and advertisement” With more than 170.000 members, Feierabend.de is Germany’s most successful senior online community. Founded in 1998, the business model originally revolved solely around targeted advertisement. It has since been expanded to online shopping, product recommendations from the community, and crowdsourced product development.

Dr. Elvira Schmidt (Wikimedia Germany): “Silver Knowledge – Sharing knowledge in Wikipedia” Wikimedia Germany is a non-profit association fostering free knowledge since 2004. Traditionally, the Wikimedia communities (Wikipedia, Wikiversity etc.) are dominated by young users. The project Silver Knowledge developed strategies to include more people from the age group 50+ as well.

Elisabeth Weinberger (Seniorweb.nl): “SeniorWeb.NL – Volunteers as an essential success factor for a community”. SeniorWeb.NL is a non-profit organization from the Netherlands operating a very popular web portal for older adults with 140.000 users. Over the course of the last 13 years, its strategies to attract, motivate and retain members have been constantly refined. Currently, SeniorWeb.NL is focusing on keeping up with technological innovations and adapting to demographic changes.

Rüdiger Glott (MERIT, University of Maastricht): “Third Age Online – field-tested results and recommendations for action” The presentation connected data on demographic changes with untapped business models for online communities geared towards older adults. In the majority of cases, online communities are still limited to one or two revenue streams like paid advertisements and online shopping. In the future, the contributions of their members will become valuable services for companies and social institutions.

5.2.2.2 Discussion groups

During registration, participants of the workshop had the option to mark topics they were particularly interested in. Based on their statements, the organizers prepared discussion groups with four different topics which were held in the afternoon.

DG 1: Public relations and engaging new members: There was wide agreement within the group that clarity on the target audience’s needs and wants is the most important prerequisite to consider. Online communities need a clear vision on how to address these needs and wants in public relations, in platform development and in user support. The participants exchanged knowledge on needs and wants of the age group 50+.

DG 2: Retaining members and volunteers: One of the most difficult processes in the management of online communities is getting members to contribute on a regular basis. The discussion group exchanged ideas on which incentives work best for which community. Another topic was the support and management of offline activities of volunteers.

DG 3: Funding and business models: The group discussed practical applications of newer business models, including co-creation, open innovation and living labs. If community administrators want to adopt more revenue streams, they have to make sure their members are accepting of the changes. Communities might have reservations about the harnessing of their user generated content for commercial gains. The distinction between leisure activities and work becomes blurred and we are only beginning to make sense of the cultural change.

DG 4: Usability: The participants appraised tablet computers as the most important trend in the industry. Due to their ease of use, these devices seem suitable for just about everyone. However, they share some of the same problems as desktop devices when they are in the hands of persons with less computer literacy: confusing user interfaces, bewildering amounts of pre-installed services, foreign-language text or issues with data privacy. Interestingly, websites targeted to older adults often are marred by the same problems.

5.3 Co-creation in Silver Markets

Innovativeness and the adaptation to or creation of new markets is a permanent challenge for enterprises/organisations. With the fundamental demographic change of European and other industrial societies towards higher shares of elderly in the population, the so-called 'silver market' (Hedrick-Wong, 2006; Kohlbacher and Herstatt, 2008) emerges, providing new opportunities and challenges for enterprises in many economic sectors (EC, 2010b).

The key of innovations for the silver market is to develop services and products that support "Active Ageing", which implies better job opportunities and working conditions for the growing number of older people and allows elderly to keep an active role in society. Elderly are increasingly demanded to participate in the digital information society and social innovation ecosystems, organisations like care institutions have to adapt their hospitality towards the emerging "silver markets".

In this short-term research project, the Collaborative Creativity Group (CCG) of UNU-MERIT, the Hotel Management School Maastricht (HMSM) and Proteion Thuis, combined their knowledge on open innovation, digital media access and use by elderly people, and innovative approaches towards hospitality by care institutions, which implies to provide learning and development opportunities to the institutions and their staff.

This project is a TAO spin-off where Dutch partners want to make use of the knowledge that was generated by UNU-MERIT during the TAO project. Since most of the business partners in TAO are non-profit organisations, some intriguing research questions could not be studied and answered within the TAO project. This project is scientifically innovative since it created an open innovation ecosystem of real-life settings in which user-driven innovation is fully integrated in the co-creative process of the new services, products and societal infrastructures of hospitality for the elderly care and silver markets.

5.3.1 Open innovation, hospitality and elderly care

In our research we looked into the acceptance of co-creation and other participatory open and social innovation methods among senior citizens in the field of elderly care and how this influenced hospitality towards the care provider.

The concept of hospitality is often associated with tourism and 'horeca' (Lashley, 2007). However, care providers are more and more striving to create a positive experience of hospitality towards their clients (or patients) too (King, 1995; Severt et al., 2008). Bolier (1996) designed a hospitality model that elaborates the connection between hospitality, innovation and health care (as cited in Hokkeling & de la Mar, 2012). This model (see Figure 5) describes the service provider, entailing the product, behavior and the environment (PBE, see Figure 5), who creates an experience for the receiver. This receiver of the service (the guest or the client) has certain needs and goals (NG, see Figure 5), that create a certain expectation. If the service provider wants to meet the needs and goals of the service receiver, he needs to innovate on a regular base. When a service provider wants to apply technology in health care, the provider needs to meet the expectations of the service receiver. Since hospitality is defined as an interaction or exchange between host (provider) and guest (receiver) to create an experience (Bolier, 1996) a link to co-creation is easily made, where developers and researchers are interacting with their end-users to create a new product or service. Within this interaction or relationship the host understands how to satisfy the guest and make the guest satisfied, which will enhance the guest's comfort and wellbeing and improve hospitality (King, 1995).

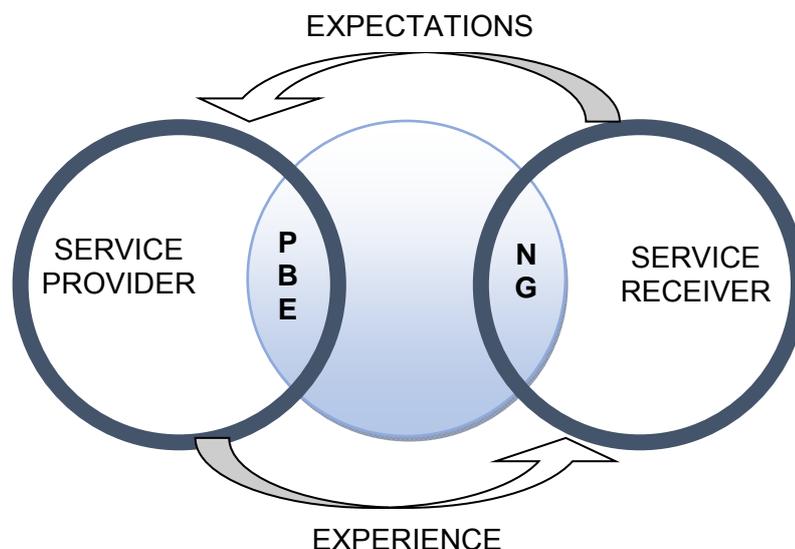


Figure 5: Hospitality model (Hokkeling & de la Mar, 2012)

We studied how Proteion Home as a care provider integrates co-creation in their products and services to improve hospitality. For this holistic, in-depth investigation a case study was chosen as the methodology (Feagin, Orum, & Sjoberg, 1991). Within this case study, several participatory methods were applied, namely in-depth interviews and focus group conversations. Proteion Home is a personal service provider in the field of housing, welfare and care in the province of Limburg, the Netherlands. Proteion Home includes care centres, group homes and serviced apartments, a treatment centre, a centre of expertise for chronic organ failure (CIRO), Proteion Homecare, Proteion Clean and Proteion Welfare. As a care provider Proteion Home aims to provide personal attention to clients, residents, volunteers and staff and embraces its customer intimacy concept, which implies the relationship with the clients to learn about their needs and to fulfil them.

Several focus groups were organized to discuss the willingness of accepting and using e-health and other IT solutions – the products and services from the gerontechnological domain – when being provided by a care provider. Focus groups are a very suitable participatory research method to gain insight into attitudes, opinions and experiences through discussions on specific topics, led by a moderator. Furthermore, focus groups can lead to the generation of new creative ideas through the exchange of experiences between participants. In the context of user-driven innovation and development of new services, focus groups are in particular suitable to learn about specific needs and concerns. Focus groups have been introduced by Merton et al. in the 1950s (1956). They study people in an atmosphere more natural and relaxed than a one-to-one interview and this setting creates the possibility to explore unanticipated issues as they arise in the discussion (Marshall and Rossman, 1999). Focus groups are useful for introducing and discussing new technologies, since the group interaction is used to “produce data and insights that would be less accessible without the interaction found in a group” (Morgan, 1998).

Three target groups were selected and the conversations took place between senior citizens as end-users (14 participants, average age 70 years old, 3 male, 11 female), volunteering and informal carers (7 participants, average age 65 years old, 3 male, 4 female), and professional staff from care providers (7 participants, average age 48 years old, 1 male, 6 female). During the focus group conversations their relationship with care providers was discussed, as well as several gerontechnological developments, such as home monitoring, an telecare platform and care robots. It was interesting to see that both the informal and professional care givers were very willing of integrating both IT in general and the proposed products and services in particular.

On the other hand, some volunteers and most of the care clients were more reluctant towards these e-developments. Where the carers talked about the added value of integrating IT in their care practices, the care clients mostly were frightened by the possible lack of privacy, using unknown devices, having not enough technical competences and not being ensured of personal contact while being cared for. The clients indicated that technology “[...] creates a false sense of security” and “[...] is too complicated.” Moreover, one of the participants explained that “People want to be treated as humans, not as machines.”

Most of the informal care givers and volunteers however did see the added value of technology in health care:

“The application of new technology is something nobody is going to stop. It’s going to be an addition to the professional healthcare”.

“Technology can offer a feeling of safety. When you do not have the time to be around with your client, you still have a feeling of control as a result of technological monitoring.”

During in-depth interviews with Proteion’s telecare services project managers and program leaders, it became clear that their vision is to involve clients and end-users as much as possible. While setting up new digital services, such as the ‘virtual care home’ or the ‘care platform’ and other telecare devices, they always start with a research to both their clients’ and staff’s needs. When developing the services pilot tests are run in smaller communities such as a small village. Here, it is easier to understand the impact of a new technology in the care sector and all stakeholders, such as test users, informal carers, volunteers, general practitioners, care personnel, care institutions and the local community, can be monitored and observed more easily. The project managers and program leaders explained that this co-creative pilot test as part of the implementation of new technologies is an important step to create awareness among senior citizens who might want or have to use the products and services. The regular human impact assessment of new technologies may stimulate their adoption by senior clients. As one of the care professionals indicated:

“Technology is great, as long as everything works. Technology should support care professionals. It should have a supporting role and the technology should not increase problems or burdens. It is an aid and when it doesn’t work, it isn’t helping anymore.”

Both the care professionals as the informal carers and volunteers saw the possible problems of the implementation of health care technologies:

(Care professional) “It will take time before senior citizens get used to technology.”

(Informal care giver) “These technical solutions are new for senior citizens. They have to get used to it. But when these people finally are used to it, they will embrace the solutions technology has to offer.”

During our research, Proteion made use of two different kinds of telecare devices that offer communication technologies, such as webcam and IT devices that connect senior citizens living at home with the care provider. One of the devices is a monitoring system called ‘Quiet Care’ that has been installed in homes for elderly patients suffering from dementia in the early stages. Family members and care givers are able to follow the lifestyle and movement of the elderly person with a software program. The device allows fast action if there has been any irregularity in movement or behavior. This prevention makes end users, such as family members feel at ease and peaceful at a distance. Although one could assume that privacy would be an issue, the opposite was the case. Research results have shown that the greatest value is the peaceful mind and knowing that the parent in care is safe in their homes because of the transparency of the monitoring system (Krischer, 2013).

The other telecare device offered by Proteion Home is a telecare software system called ‘Care TV’. It offers senior citizens the possibility to live longer and independent in their own home while being in contact via webcam and television with a healthcare professional from Proteion Home at all times in addition to seniors’ usual fall detecting alarm. Proteion Home used the co-creation in the way that

they adjusted features to users' needs, for example offering users the possibility to call a care giver with 'Care TV' and connect with other users in their city in order to socialize and see each other via webcam. Research has indicated that users feel comfortable using the technology shortly after the implementation and had no concerns about privacy (Krischer, 2013). The overall aim of these two specific telecare systems used by Proteion Home, aims at supporting independent living in a homecare setting and preventing declining health with the monitoring technology.

For Proteion Home the introduction of ICT in care offers them the same five solutions as the five roles Kaakinen and Törmä (1999) described to gerontechnology. The introduction of ICT and other e-health care products and services are namely:

- Preventive: gerontechnology solutions aim at preventing weakening of health;
 - Supporting strengths: gerontechnology develops methods and devices that help in reaching a wider benefit from ageing people's strengths at work, in leisure time, in learning and social interaction;
 - Compensating for weakening abilities: gerontechnology produces methods, devices and products that compensate for weakening senses or ability to move;
 - Supporting care work: gerontechnology provides technology for care workers to support their work;
 - Furthering research: gerontechnology helps ageing people indirectly by supporting scientific and clinical research, but also gives Proteion Home more insights in their clients' needs and experiences.
- (paraphrased, as cited and translated by Melkas, 2008)

Concluding, Proteion Home's two specific telecare technologies contribute to all of these solutions. Furthermore, gerontechnology and the open and social innovation approach offers Proteion Home the possibility to interact and engage with clients and staff and set up a participatory method to create new care experiences, as is in line with their hospitality policy.

5.3.2 Discussion

Evidently, the far-reaching consequences regarding ageing population cannot go unnoticed. Active ageing policies continually present demographic challenges as one of the prominent issues our society is currently facing. They claim that older persons should increasingly engage in online activities. Moreover social innovation and co-creation are promoted by several policies. Since the ageing population is a different demographic target group, social and open innovation is recommended for developing new products and services. Gerontechnology already proved to be a perfect interdisciplinary domain for incorporating co-creation within its design and development processes.

Hence, co-creation in gerontechnology, will achieve more sustainability in health care. Hospitality experts in care will namely be able to profit thanks to more insights into the changing silver markets. Care institutions will have the necessary know-how to adapt their hospitality towards the silver market clients by involving elderly in their innovation processes. Elderly will profit from an enriched selection of well-tailored services, from facilitated access to digital media, and from enhanced social integration and participation in the information society.

More research is needed on gerontechnological business models and value chains that systematically and sustainably maintain, advance and tap hospitality, health care and the rich knowledge and experience base of the senior citizens. A more systematic approach in this field requires a sophisticated technological and organizational approach towards managing heterogeneous groups within the care community. This approach not only defines values for economy and society that can be produced and delivered to companies, the public sector, and social and cultural institutions by the community, it also opens up new revenue streams for care institutions to refinance their infrastructure,

human resources, and services. Such approaches of hospitality are particularly suitable for products and services for senior citizens and the design and testing of gerontechnological solutions.

5.4 Wikimedia Netherlands

The Survey among New Wikipedia Users was set up as part of TAO to measure the impact of methods for “mobilization” and “inclusion & motivation”, introduced on the German language version. Furthermore this study was used to analyze the effects of online measures implemented in order to facilitate the access of elderly people to Wikimedia projects, taking into account both the target group itself and younger age groups

The Survey among New Wikipedia Users included 656 participants that mostly live in the Netherlands and Germany (respectively 332 and 281). The average respondent to this survey was male, 55 years old and highly educated.

Most of the participants (n=599) are only readers of Wikipedia articles, i.e. they have never written/edited any content and only few contribute content to Wikipedia (i.e. author/editor, n=34) or have done so in the past (n=23).

The target group of the survey, namely New Wikipedia Users, turned out to be a very small subset of the complete dataset. Only 44 respondents indicated that they had been using Wikipedia for less than two years. Half of the respondents have been reading Wikipedia articles for more than five years. The subsets of the contributors and ex-contributors turned out to be too small to draw any conclusions concerning differences between new and older users.

With this survey we studied reasons for reading and contributing to Wikipedia. Out of this analysis we can come to several guidelines and recommendations for Wikimedia Chapters to activate and mobilize their senior readers and turn them into contributors.

The readers would be much likelier to contribute if

- they knew that there were specific topic areas that needed their help;
- it was made clear to them that other people would benefit from their efforts.

It is thus important to create awareness among the readers about the status of the provided knowledge and how the Wikipedia content is consumed and distributed.

The new users (having used Wikipedia for less than two years) currently do not know how to contribute and Wikimedia should create a better environment for the new users to overcome their hesitation to collaborate on the Internet. If those new users had someone to show them how to contribute to Wikipedia, they would be much likelier to start contributing. This is in line with the ex-contributors, who indicated that they would be much likelier to start contributing again, if the technology was easier to use.

6 Exploitation

6.1 Background – Lessons Learned in the TAO Project

In this chapter we lay out how the experiences made during the project and the outcomes of it are deployed in order to realize a new business. Cornerstones of this business idea are the key challenges, best practice examples and needs of online communities of older adults that we have identified during the project period and of course the solutions we have developed to master the challenges.

The challenges of online communities of older adults can roughly be summarized as

1. Attract and retain older adults
2. Activate older adults to contribute content
3. Managing the online community
4. Developing an efficient business strategy
5. Developing sustainable business models

These challenges appear in different ways and with different impact for different types of communities.

Regarding the first two challenges, a distinction must be made between organizations that do not specifically target certain groups (e.g. by targeting the “Internet community” as a whole), such as Wikimedia, and those that target specifically older adults. For instance, while Wikimedia has been very successful in building up a huge and vivid community and is used by all types of Internet users, they have problems to attract older adults as authors and editors of the content, e.g. of the Wikipedia. Besides a certain lack of familiarity with IT, the Internet and, in particular, Web 2.0, another reason for this seems to be that the values, beliefs, communication styles and practices that have emerged within the community in the past are not always appropriate for older adults. Within the course of the TAO project, the organization has put a lot of effort in developing offerings that are tailored to the specific needs of older adults. In contrast, organizations that specifically address older adults, such as Seniorweb.nl and Seniorweb.ch, often face the problem that there are a lot of activities taking place within the community but that a common understanding of the members as “part of a community” is hard to generate. While Seniorweb.nl had mastered this problem already before the TAO project has started, Seniorweb.ch had to develop new strategies and offerings in order to respond to this problem. Within the TAO project it turned out that personal assistance, as provided by the “ambassadors” of Seniorweb.nl, and on-site service provision at the homes of the community members or at events and places where community members can meet are key factors to master this challenge. The exchange of knowledge between the community partners and the organizational learning process that was induced by this in the context of the TAO project has yielded already positive results.

Regarding the third challenge, to manage the community, online communities of older adults (just as all kinds of online communities) can be distinguished between self-managed communities, such as the Wikipedia communities, and centrally steered communities, such as the Seniorweb communities. Self-managed communities rely on voluntary communication, coordination and agreements of the community members with regards to content, directions of the overall development of the community, and demarcation from other communities. These processes are usually performed by using Web 2.0 technologies, which to some degree creates an entry or retention barrier for older adults. In addition, values, beliefs and communication styles of communities with predominantly younger members can also create such barriers for older adults. Centrally steered communities are not confronted with this problem but with the challenge to understand the community as a whole. We found a tendency of steering bodies to equalize “community” with “number of members” or “number of users”. However, an online community, if not very small and/or centered around one single topic, is a multifaceted entity and for the management and coordination of this community it is essential for the steering body to get

an awareness of different interests, capacities, skills and activity levels of different groups within the community. Moreover, online communities are dynamic, as members leave, new members join, and interests and capacities of group members change over time, due to changing conditions of life or growing age. These dynamics have also to be taken into account when an online community is managed. Within TAO, the co-creation activities and the differentiation of services offered to community members have turned out to provide efficient responses to these challenges.

A key problem for many online communities, and specifically for online communities of older adults, is to develop a clear and efficient business strategy and sustainable business models (the fourth and fifth key challenge in our list). What we found in many online communities of older adults is a dominant “non-profit” orientation that often limited the awareness of business economic necessities that have to be mastered in order to allow the survival of the online community. Especially the workshops and the context analysis have provided proof of this problem. In some cases the term “business model” was obviously refused and emphasis was laid on statements like “we are an organization for older people and not a business”. This observation suggests that the fact that a number of the online communities we have met during the course of the project have evolved out of social or altruistic motivations and as not-for-profit organizations often leads to an attitude that tends to emphasize the social purpose of the community and to downplay or even ignore the economic challenges. Even though the overwhelming part of the communities we met reported that “creating sustainable revenue streams” and “securing the financial survival” are considered to be key problems we often found no activities to tackle these challenges in a systematic way. In other words, many online communities of older adults show a high degree of professionalization and an immense willingness to provide services and time voluntarily with regard to the social objectives of the community but a lack of professionalization with regard to the economic prerequisites to run and maintain the community.

This is illustrated by the fact that many communities rely on public funding that is often provided only for a limited period of time and/or do not succeed to create other revenue streams that suffice to redeem the costs aligned with running the community. Although there is potentially a multitude of revenue streams, most communities we have found rely only on one or two revenue streams, predominantly membership fees and public funding, to some degree also donations and advertising. We often found no or very low awareness of alternative revenue streams and no or very little activities to search for such alternatives. A reason that may underlie these observations could be that many communities do not consider what value is created in or by their community that could be used in order to generate revenues and to cover costs. Given this lack of “value awareness”, only very few communities of older adults that we have met were able to build up a business ecosystem that allows for offering distinct value to different customers.

6.2 Strategic Focus

The TAO business model draws on these five key challenges of online communities of older adults. The key idea is to use the knowledge and experience that was generated in the project and by the consortium partners to form a network of loosely collaborating partners – the “TAO Network” - that is able to provide consultancy services and training to help online communities of older adults and platform providers for such communities to master each of these challenges. A particular focus is thereby set on the development of sustainable business strategies and business models, the generation of revenue streams and the establishment of a business ecosystem around online communities of older adults. Hence, the solution to the key challenges identified in the section above lies in the interplay between following activities, which will be carried out by the TAO Network:

- Bringing together online communities of older adults, platform providers, goods manufacturers and service providers for the silver market
- Usage of platform providers/community managers as brokers and gatekeepers
- Organization of co-creation groups of older adults
- Provision of academic and non-academic consultancy

The TAO Network consists of three layers. The core of the TAO Network is provided by the academic partners of the TAO project consortium, i.e. the Maastricht Economic and Social Research Institute on Innovation and Technology of the University of the United Nations and the University of Maastricht (UNU-MERIT, The Netherlands), the Bern University of Applied Sciences (BFH, Switzerland), and the Center for Academic Further Education of the University of Ulm (ZAWiW, Germany). The second layer is provided by the community partners of the TAO project consortium, i.e. Seniorweb.nl, Seniorweb.ch and Wikimedia Germany. This layer also includes the TAO collaboration partners Zeix and Terz Foundation. The third layer of the TAO Network is provided by organizations that can benefit from the services provided by the TAO Network as well as contribute to these services. Such organizations are online communities of older adults, platform providers for such online communities, service providers and manufacturers that target at the silver market (Figure 66).

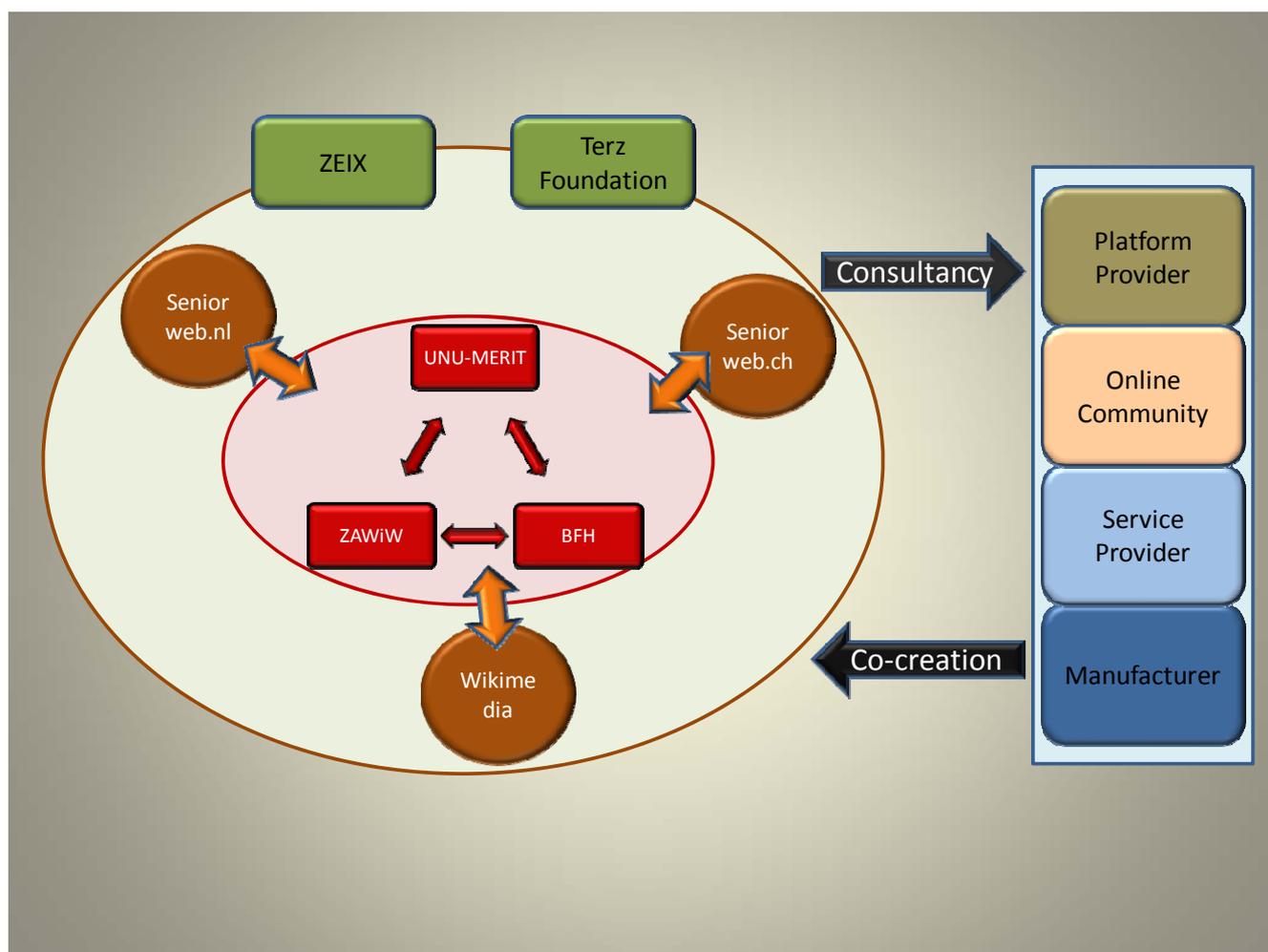


Figure 6: The TAO Network

The core layer provides the conceptual and administrative level of the TAO Network, where consultancy services are developed and marketing, acquisition and the financial administration are performed. The second layer provides practical expertise that feeds in the service products, and the third layer represents the target groups of the services provided by the core and second layer actors. However, since the TAO Network pursues a co-creative approach, the target groups can be captured as traditional customers only when consultancy services are delivered to these groups. In the case of co-creation projects, clients become to some degree co-producers of the services offered by TAO.

In addition, it must be noted that the TAO Network is designed as an open association. This implies that other organizations, such as consultancies or organizations that build the third layer of the

network are allowed to become part of the second or the core layer of the TAO Network. The only condition for this is that these organizations are willing to collaboratively share knowledge and expertise with the TAO Network partners, help developing or improving the network's service products and collaborate with the other network partners also in delivering services to customers. The idea is that sharing knowledge and expertise results in advantages for all collaborating partners and that through the growth of the TAO Network the scope of organizations, in particular online communities of older adults, can subsequently be significantly extended. This extension appears meaningful in particular with regard to countries that have not been represented in the TAO project consortium. Hence, the status of the TAO Network as illustrated in Figure 66 must be considered as an initial and provisional stage of the organization.

The strategy of the TAO Network aims at establishing itself as a key knowledge and expertise broker between platform providers for online communities of older adults, managers of such communities, the community members, and third parties for which online communities of older adults generate value that can be tapped in form of revenue streams. Such third parties are companies that produce goods or services for the silver market but face problems to design their offerings so that they meet the specific demand of older adults, given that the needs of this group have undergone a serious process of differentiation due to the generic trend towards individualization and dynamics aligned with passing through different life-stages within the third-age period. The goals of the business activities of the TAO Network corresponds to the strategic goals of the TAO project and, more importantly, to the strong social and altruistic motivations of online communities of older adults by aiming at the improvement of the quality of life and of the social and economic inclusion of older adults. Another important goal of the TAO Network is to help developing tailored goods and services for different groups of older adults in order to better satisfy the needs of this age group.

This is particularly reflected in the strong conviction of the TAO Network that older adults and their online communities have to benefit from all activities carried out by the TAO Network. To this end, online community managers, often located at the site of the platform providers for these communities, are allocated a key function in the business operations of the TAO Network – they are considered and have to serve as gatekeepers for all other parties that want to get access to online communities of older adults.

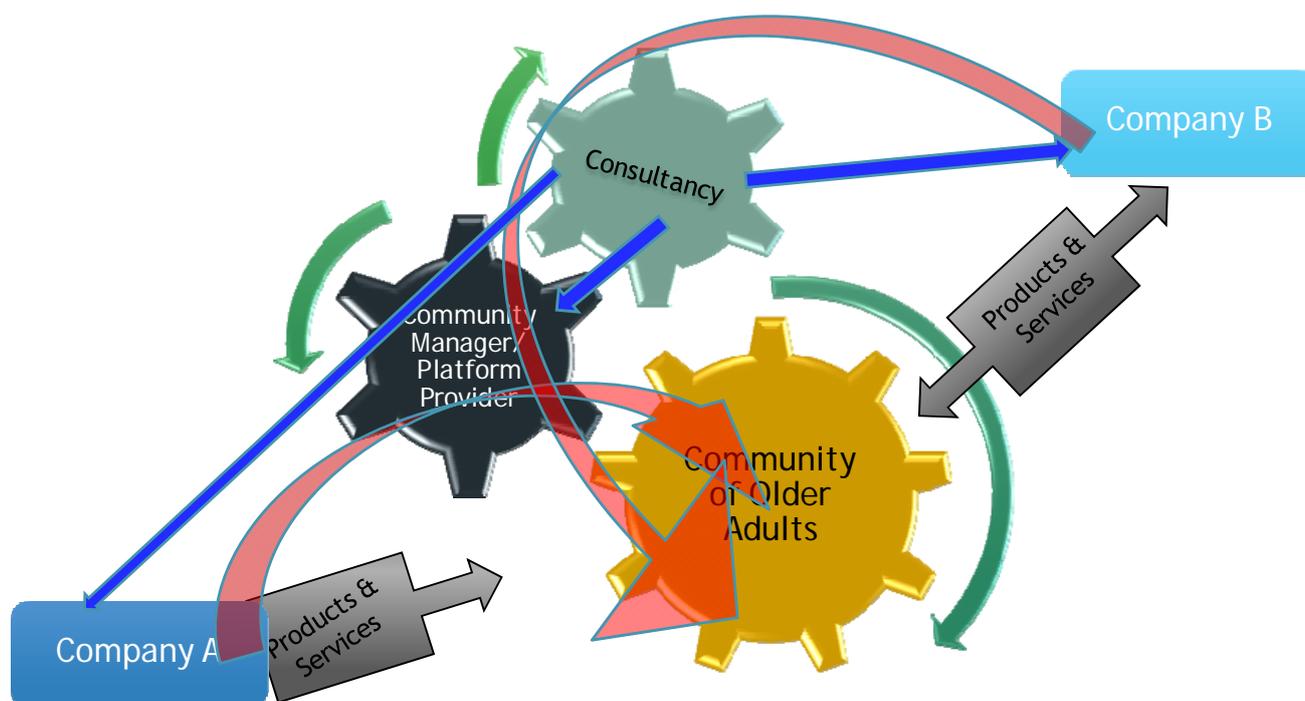


Figure 7: Online Communities of Older Adults at the Centre of the Business Activities

Figure 77 illustrates this principle by the example of two companies that both want to sell products or services to the silver market and to this end strive to access online communities of older adults. Company A is an enterprise that wants to get access to the community because they want to test if their new product is recognized by older adults and meets their demands. Company B develops a new product for older adults and wants to involve members of their target group in the development process. For an outsider of the community, which both companies are, it is very difficult to identify the most appropriate groups and persons within the community that help them to solve their problems. Moreover, if they would approach the community by posting their interest in forums or on mailing lists, the community might perceive these activities as spamming or other forms of violation of the informal code of conduct that is followed by the community members. In order to overcome these problems, the TAO Network provides consultancy services on how to access online communities of older adults in a respectful and collaborative way to company A and company B and consultancy services to online community managers and platform providers that help them to decide under which conditions and for what kind of third parties they would allow access to their community. It should also be noted that the TAO Network also keeps to this principle of accessing online communities of older adults only via a gatekeeper that secures and protects the interests and privacy of the community members.

The consultancy services provided by the TAO Network target following subjects:

- Community building and management
- Volunteer recruiting and management
- Organization of training for older adults in online communities
- Gatekeeping
- Business model creation
- Business strategy generation
- Business ecosystem building and collaboration with external partners
- Co-creation

These services will be offered in two ways, in form of seminars, conferences and workshops and in form of on-site consultancy at the clients' premises.

The mission statement of the TAO Network highlights the points laid out above:

“The TAO Network considers the rich experience and knowledge base of older adults as a key value for society that should not remain untapped. Our mission is to deploy this potential in order to improve the quality of life of older adults and to highlight the social and economic value of their knowledge. We carry out this mission in two ways: We empower online communities of older adults to help establishing the interests and capacities of their members to actively design the things they want for their life. We open opportunities for manufacturers and service providers to develop products and services that are tailored to the needs of older adults.”

The organizational core competencies of the partners in the TAO Network provide a perfect mix of skills and expertise to provide high quality service to the target groups. Within the core layer of the network, the academic partners provide competencies in business modeling and business strategy building, business ecosystem creation, community building and community management, organizational learning, training for older adults, volunteer recruiting and volunteer management, co-creation, e-inclusion and health aspects from a multi-disciplinary angle. The second layer of the TAO Network adds practical expertise in community building and management, volunteer recruiting and management, ICT training for older adults, and co-creation. The opportunity to include third parties as co-producers of services and solutions enables the TAO Network to flexibly adapt and respond to specific requirements that may call for expertise in fields that are not or not sufficiently represented in the TAO Network, e.g. when a co-creation project has to be organized and the client needs very specific professional expertise in the field of his industry.

The organizational values of the TAO Network are openness, teamwork capacity, knowledge sharing, and strong respect for the expertise, knowledge and needs of older adults.

6.3 The Business

In this section we describe the business model of the TAO Network, the organization and management, main activities, key features of the business and strengths and weaknesses of the TAO Network.

Regarding the business model of the TAO Network we refer to the business model canvas developed by Osterwalder and Pigneur (2010). This business model canvas consists of nine building blocks (Figure 88) that can be allocated to four key areas necessary to build and characterize any business model:

- The value proposition, which is the value for customers inherent to the product or service that is sold to them in order to receive revenues and make profit.
- The value proposition production area includes all factors that are needed in order to produce the value proposition, which are the key partners that are necessary to create the value proposition, the key resources needed and used by these partners, and the key activities that must be performed by the company and its partners in order to produce the value proposition.
- The distribution area contains the customer segments (or target groups), the customer relationships, and the communication, distribution and sales channels used to promote and sell products and services and to organize delivery and payments.
- The financial area, which consists of the various costs aligned with the creation and distribution of the products and services and the revenues gained from selling it to the customers.

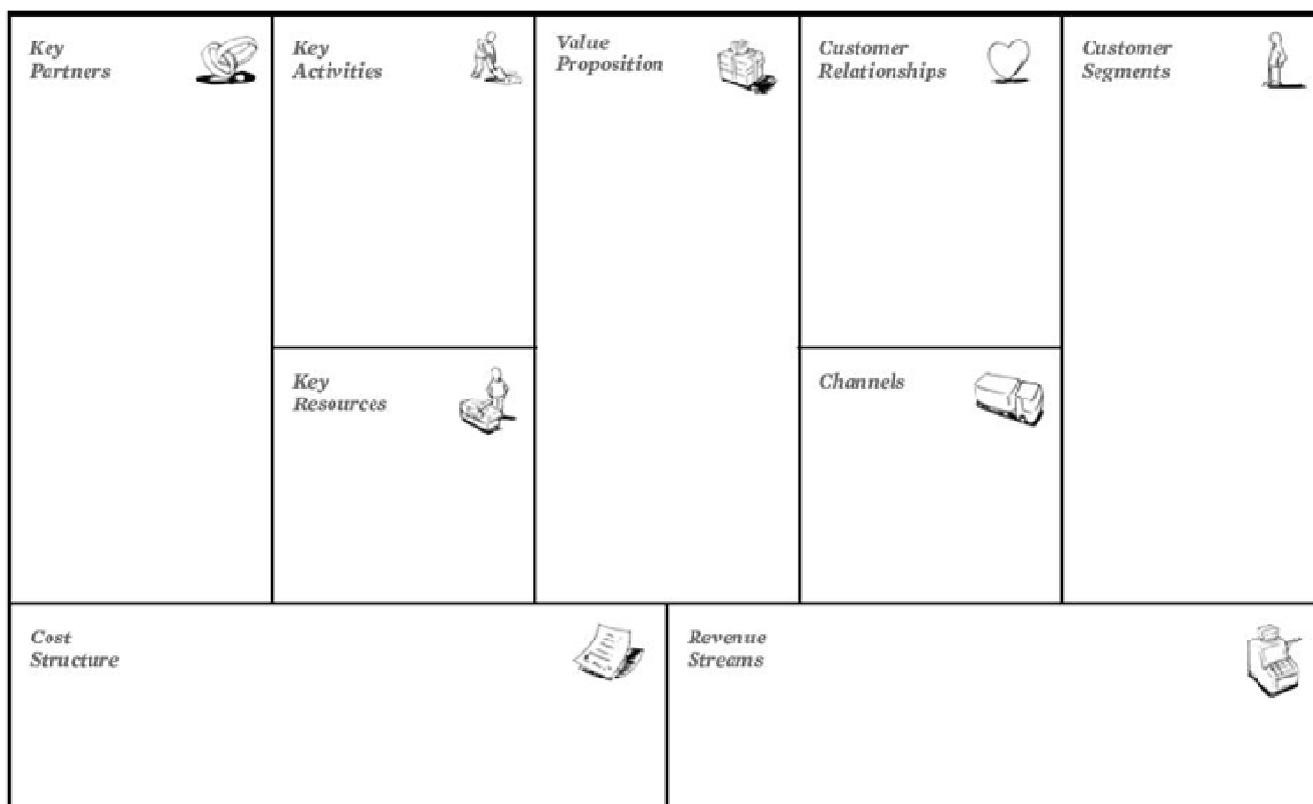


Figure 8: Business Model Canvas of Osterwalder & Pigneur (2010)

6.3.1 Value Proposition

The value proposition of the TAO Network is its combined expertise in the specifics and problems of online communities of older adults and co-creation, which allows the organization to position itself as a hinge between these communities and their managers and providers on the one hand and manufacturers and service providers that target the silver market on the other hand. The TAO Network will serve as a consultancy for these organizations and as a broker between these parties.

Referring to the value categories of Osterwalder and Pigneur (2010), our value propositions offered to the different groups of customers are

- Newness, as there is only scarce systematic knowledge about online communities of older adults and co-creation
- Performance, as the services to professionalize online community managers and platform providers with regard to business strategies and business models will have a strong impact on the sustainability and the revenues of these organizations
- Customization, as we will provide tailored consultancy services to each single client
- Cost reduction, as we will help manufacturers and service providers to become more successfully in developing tailored goods and services for the silver market, which will significantly decrease the scale of failed R&D projects and probably also contribute to reducing the development time of new goods and services as well as the time-to-market
- Risk reduction, as online community managers and platform providers will decrease the risk to fail because of insufficient revenue streams and goods and service providers will experience a risk reduction of R&D projects aiming at new offerings for the silver market

6.3.2 Value Proposition Production

As laid out above, the value proposition will mainly be produced collaboratively by the partners of the core layer of the TAO Network. Whenever necessary and feasible, the second layer partners will be involved, however only for participation as speakers or tutors in workshops, seminars and conferences. On-site consultancy and co-creation projects will be carried out exclusively by the core partners. This division of work and responsibilities accommodates the fact that the second layer partners run their own communities as core business and do not have the capacities to engage in consultancy services for third parties. Overall, tasks and responsibilities – thus, the key activities - are distributed as follows:

- Core partners
 - Conceptual work
 - Strategy generation
 - Acquisition
 - Marketing
 - Organization and execution of workshops, seminars and conferences
 - Provision of consultancy services
 - Billing and accounting
 - Managing the TAO Network
 - Hosting and maintaining Website
- Second layer partners
 - Assistance in workshops, seminars and conferences as tutor or speaker
 - Multiplication and dissemination (as part of marketing)
- Third layer partners
 - Assistance in selected workshops, seminars and conferences as tutor or speaker (voluntary)
 - Testimonial of successful projects of the TAO Network (voluntary)

The key resources of the partners are the TAO Network website (which may evolve from the website of the TAO project) and the premises the partners have available for conferences, workshops and seminars. The man-power needed is depending on the scale of activities. The TAO Network is created to evolve gradually from the TAO project. For 2014, the three core partners plan a maximum of four workshops or three workshops and one conference, depending on the response of the target groups. In addition, for the first year we do not plan for more than one consultancy project. The effort of the TAO Network has to be kept to an extent that can be handled by the partners, which all are mainly employed by universities and have to perform other tasks outside the TAO Network. Therefore, we assume that all activities allocated to the core partners in the first year will not exceed a total of 7 man-months, spread across all core partners.

6.3.3 Distribution

The customer segments of the TAO Network have been laid out above: Community managers, community platform providers, manufacturers of goods and service providers for the silver market.

Overall, we consider the market for the services provided by the TAO Network as a niche market, as we operate at the cutting point of manufacturers and service providers on the one hand and online communities of older adults on the other hand. Since the number of such communities is limited (though growing and expected to grow in future), this factor limits the market size. The market of the TAO Network is also segmented, as we provide different services to different groups of customers. Online communities of older adults and platform providers are offered consultancy services for the professionalization regarding business strategies and business models and collaboration with third parties, manufacturers and service providers are offered co-creation services. The latter has to be produced, of course, in collaboration with online communities of older adults, too.

The channels we use for awareness raising are basically the workshops and conferences we plan for 2014, personal contacts to communities of older adults that we have established during the TAO project and direct marketing through phone calls, emails and brochures to goods manufacturers and service providers in the silver market. The website will also play a role as a distribution and communication channel. Moreover, the second layer partners may also use their own channels to promote the TAO Network.

The customers will be able to evaluate our value proposition by practical experience and direct feedback to the TAO Network team. The delivery of our value propositions happens directly at workshops, conferences and seminars and, in consultancy and co-creation projects, at the site of the client. Purchasing will be done the traditional way, i.e. with invoices and money transfer from bank to bank. Payments will be due only after (a part of) the services have been delivered. Post-purchase customer support will be delivered through continuous contact to clients and participants in workshops, seminars and conferences in order to monitor whether the solutions we have developed worked out or if new challenges have evolved.

The latter relates to customer relationship, which will be based on surveying online communities of older adults and goods and service providers in the silver market in order to place our offers and to provide post-purchase support through monitoring developments within the clients' organizations.

6.3.4 Costs and Revenues

Since the TAO Network is a not-for-profit organization the partners do not have to pursue a strategy to maximize profits. The aim of TAO is to cover its costs. Costs incur to the TAO Network mainly from the man-power needed to prepare the contents and methodologies of workshops, seminars and conferences, the organization, execution and documentation of these events, the preparation of marketing materials (whitepapers, brochures, content for the website), the surveying of potential clients and the post-purchase monitoring of actual clients, and acquisition activities. In order to minimize costs, the TAO Network will organize a maximum of four events in 2014. Each of these events will only be realized if the number of committed registrations is sufficiently high in order to

cover our costs. Consultancy projects will cause labor costs (for research, analysis and problem solving) and travels of TAO Network members to the clients' sites.

The TAO Network will definitely perform the four planned events, which will be associated with estimated total costs of 10,000.00 EUR. Whether or not the envisaged consultancy project can be realized depends on the success of our acquisition strategies. We plan to ask not-for-profit organizations slightly lower prices for our services than commercial for-profit organizations. If a consultancy project for a not-for-profit organization can be realized we will ask prices that correspond to a maximum amount of 8-12 man-days at prices that are customary in the market, even though the actual work effort may exceed this level to some degree. If a consultancy project for a commercial player will be realized we will account for each man-day that has actually been worked. The rationale behind these diverse pricing policies is that the TAO Network recognizes the situation in which many of the not-for-profit organizations behind online communities of older adults are and wants to support them with regard to their social purposes by voluntary work. In addition, comparably low prices provide a meaningful strategy for a start-up to overcome market entry barriers.

Revenues will be received from subscription fees of participants in the workshops, seminars and conferences and in form of service fees from consultancy projects. We plan to demand 250-350 EUR for participation in one of our events, which should suffice to pay for the costs aligned with preparing, executing and documenting the event. For consultancy services we will ask market-based daily rates that will allow covering the costs for labor, travel, and accommodation associated with the consultancy project.

6.3.5 Strengths and Weaknesses

The TAO Network has its strengths in particular with regard to the partners' specific knowledge about online communities of older adults, which has been gained from the deep and broad insights in such communities during the TAO project. In particular, the combination of this knowledge with expertise in co-creation projects is a feature that we consider unique in the market.

Another strength of the TAO Network lies in its multi-disciplinary partners, which allows to tackle problems and to develop solutions from different professional viewpoints. Our experience in the TAO project has proven that the partners can collaborate very efficiently and are able to integrate the results gained in different sub-projects and with different methods and approaches in a meaningful way.

We also consider it a strength that all partners of the TAO Network set a strong focus on needs and capacities of older adults and do not have to commercial interests in maximizing profits. This attitude puts us in a perfect situation to be recognized by online communities of older adults and by manufacturers and service providers for the silver market and allows us to assume an in-between position between communities, platform providers, and third parties.

Finally, a key strength of the TAO Network and its business strategy and business model is that it provides benefits for all parties involved.

Advantages for older adults (community) are

- Activation of professional and informal experience
- Familiarity with new technologies
- Collaboration experience (social inclusion)
- Contribution to development of new goods and services (economic activity)
- Getting what they want (improving quality of life through tailored products and services)

Advantages for platform providers/community managers are

- Creating new contents, tasks and cohesion within community
- Tapping new and sustainable revenue streams
- Establishing stable business ecosystem

- Availability of tailored consultancy services

Advantages for service providers and manufacturers targeting the silver market are

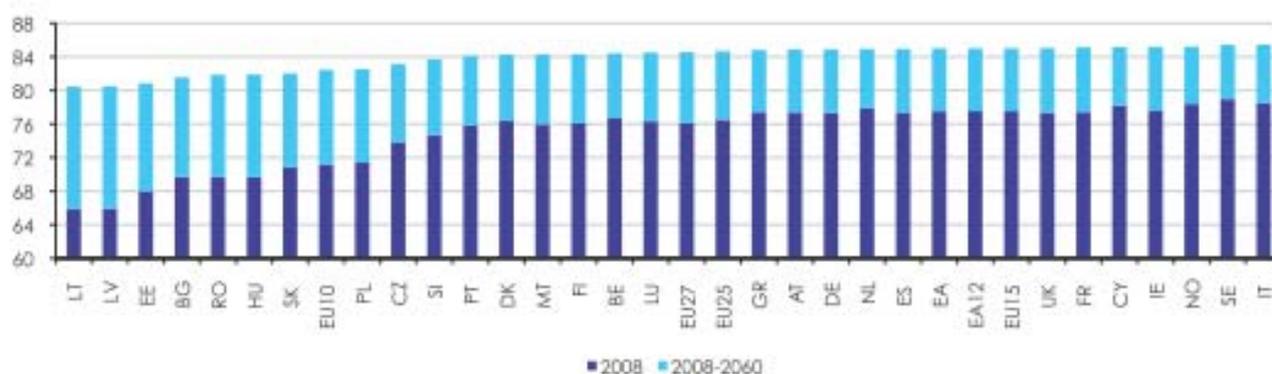
- Access to experienced older adults
- Improved innovation capacities
- Ease of tailoring goods and services to silver market
- New market opportunities
- Availability of tailored consultancy services
- Realization of co-creative design opportunities

The weaknesses of the TAO Network result mainly from the fact that activities of the involved persons work mainly for the universities where they are employed. This circumstance definitely reduces the available time for activities in the TAO Network. In addition, being associated with universities may cause some doubts regarding the quality and usability of our services for commercial organizations. Finally, as we have learned from the TAO project, many online communities of older adults are unable to pay market-based prices for events and consultancy services. This point has been addressed by us through a diversified pricing strategy for non-for-profit and for-profit organizations.

6.4 Market Analysis

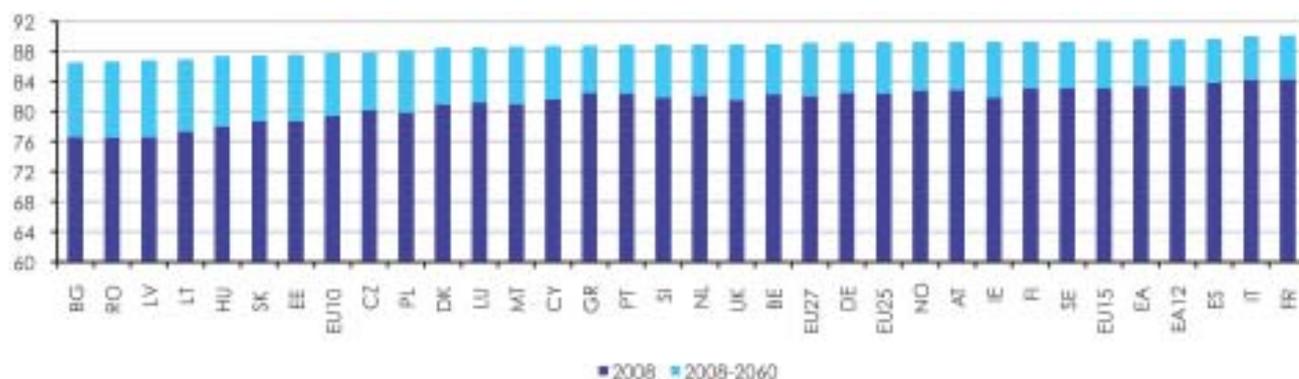
There are two factors the market analysis for the services offered by the TAO Network has to take into account. On the one hand, the steady growth of the share of older adults in the European population and on the other hand the difficulties companies in various industrial sectors encounter when they try to tailor goods and services for the silver market.

Together with the growing diffusion of Internet technologies within the older age groups, the ageing of the populations of the EU Member States is the key driving force for older adults to organize in online communities. As demographic projections (European Commission 2009a, 2009b) indicate, the life expectancy of both women and men within the EU-27 states will grow considerably over the coming five decades (Figure 99 and Figure 1010). For EU-27 and the period between 2008 and 2060, the European Commission expects life expectancy at birth for men to increase from 76 years to 84.5 years and for women from 82 years to 89 years (European Commission 2009a).



Source: European Commission 2009a: 37

Figure 9: Projection of Life Expectancy (in Years) at Birth, Men



Source: European Commission 2009a: 37

Figure 10: Projection of Life Expectancy (in Years) at Birth, Women

As laid out in section 5.3., the emergence and growing importance of the silver market indicates that older adults provide a huge potential for new products and services and are becoming an important target group for market research and marketing campaigns. If estimates are correct, Europeans ageing 65 years or more possess wealth and revenues of over 3,000 billion EUR and the market for smart home applications alone will triple from 13 million people in 2005 to 37 million people in 2020 (European Commission 2010). Given these demographic, economic and technological trends it is obvious that in future the Internet and online communities will play an increasingly important role for older adults.

The problem is however that many enterprises are not familiar with the specific needs of older adults and the dynamics of these needs. As our hospitality project reveals, this applies to some degree even to industries that offer services to older adults for decades. As Arnold and Krancioch (2008) show, the preferences of older consumers for certain types of businesses are very distinct from the average, especially when the use of the Internet is considered. Moreover, the consumer behavior of older adults, which in the past has often been considered by vendors as static and homogeneous, has become more and more dynamic. According to Murata (2008), the consumer behavior of the generation aged 50+ is influenced by a number of factors, such as physical changes due to aging, changes in each individual's life stage, changes in the family situation, changes in tastes, and changes in time or fashion. The influence of these factors makes it increasingly difficult for enterprises to predict what features products and services must have in order to comply with their demands. Services and products for the silver market have to be tailored to older adults by adapting them to the diversified consumer behaviors, diversified ways of consuming time and diversified ways of living that meanwhile characterizes this generation (Murata 2008).

The TAO Network responds to these trends by developing sustainable business strategies and business models for online communities of older adults and by using such communities as a means for older adults to help enterprises producing goods and services that meet their demands. The response of the survey on older adults at the AAL Forum 2012 in Eindhoven indicates that older adults consider approaches that use the Internet in such a way are highly recognized by this age group. 81% of the participants of the survey answered "yes, absolutely" to the question if it is "... an advantage if companies use the Internet technology to engage older adults in the development/design of new products and services for elderly citizens".

We conclude from the observations laid out above that the business approach of the TAO Network is a perfect response to the quantitative and qualitative factors and trends that determine the consumer behavior, technology usage, needs and capacities of older adults and to the challenges enterprises encounter when producing goods and services for the silver market. Therefore we are convinced that the market opportunities for the TAO Network are very positive.

6.5 Management

Since the TAO Network will start only after the official end of the TAO project, there is no formal agreement about how the TAO Network will be operated and managed. In fact, since the TAO Network is designed as a network of independent and loosely collaborating partners, we assume that a Memorandum of Understanding will suffice to govern the TAO Network efficiently. As in all such networks, each partner has the right and is encouraged to acquire contracts on his own and to perform them independently of the other partners on own account. However, we assume that a large majority of contracts and events require the collaboration between all three core partners. Moreover, since our expertise profile provides us the key competitive edge over other consultancies in the field we have to take any opportunity to demonstrate this unique expertise.

For the coordination and decision-making between partners each core partner will assign one person to represent it in the coordination team. The team will meet in person at least twice a year and keep in touch through regular telephone conferences. In times of project execution or when events have to be prepared these phone conferences will take place biweekly.

All partners are paid from a contract according to the amount of work that they have to perform in order to accomplish the tasks assigned to them. The distribution of work and budget across all partners will be agreed upon before a project or the preparation of an event starts.

The coordination team is also responsible for keeping contact to second layer partners.

Each partner is free to collaborate with third parties but it should be clear that the TAO Network members are preferred partners when collaboration is needed and the skills profile of the partners meet the requirements of the contract.

Finally, the coordination team has to monitor how the economic situation of the TAO Network evolves and develop alternative strategies if there are not enough registrations for workshops, seminars and events or when no consultancy or co-creation projects could be acquired. To this end, the coordination team will meet every six months.

6.6 Quality Management

Quality management aims at monitoring whether and to what degree our services meet the demands of our customers. We will carry out this task in various ways. Regarding events, participants will be asked to fill in a form by which they can provide feedback about how satisfied they are with the topics, the speakers, the methodology, and the outcomes. The form will also offer an opportunity to propose improvements.

Regarding consultancy and co-creation services we will receive feedback about the quality of our services mainly from monitoring the short-term, mid-term and long-term success of the solutions we have developed for our clients. An indication of the quality of our consultancy and co-creation services will be the willingness of our clients to provide a testimonial on our website.

6.7 Risk Management

For risk management the TAO Network refers to a classification introduced by Shah and Sykes (2012: 35), which differentiates between strategic risks, operational risks, financial risks and hazard risks. In the following we consider these categories and identify concrete risks in each of these areas and appropriate risk mitigation strategies.

With regard to strategic risks, the TAO Network may be affected by demand shortfall, as many online communities of older adults may not be able to purchase our services. As already explained, we try to

counter this risk by a flexible and diversified pricing strategy that allows not-for-profit organizations to pay less than market-based prices. We do not assess this risk as very probable because of the positive market opportunities for the offerings of the TAO Network.

Another possible strategic risk lies in partner issues. Given that the competency profile of the TAO Network is strongly characterized by the collaboration of partners with different disciplinary expertise, which all are bound to employments at universities, the likelihood of this risk to realize is relatively high. Since each partner has more person than one in the TAO Network, there is some opportunity to redistribute tasks internally. An alternative risk mitigation strategy is to try rescheduling the order of tasks in the project, if the client and the nature of the project allow for that.

Regarding operational risks, the TAO Network may be affected by poor operating controls, which may impede a project or contract. The likelihood of this risk is relatively high in networks of loosely collaborating partners. However, the weekly telephone conferences between representatives of the three core partners during a project should ensure that operations in such a critical phase are kept under control.

Poor capacity management is another risk that may occur in the TAO Network, though rather in less plannable consultancy projects that in context with events. However, since all core partners are aware of the constraints of the Network the workload is kept to a feasible minimum from the outset of the TAO Network.

Regarding financial risks the TAO Network is not at risk because money for events and travels and the like will only be spent after a sufficiently high number of persons have registered for an event and transferred the money. Since accounting is left to the respective university administration behind the core partners of the TAO Network there is no specific risk regarding billing and accounting problems.

Hazard risks include risks that are hard to predict and, for a start-up, impossible to counter through mitigation strategies that are affordable.

6.8 Performance Measures and Targets

The most important hurdle for a start-up is to gain customers that pay for its services. The TAO Network will generate revenues from workshops, seminars and events. The purpose of these events is to become known and visible in the market and to acquire contracts for consultancy and co-creation projects. Therefore, during the first year of the TAO Network, the status of work regarding organizing and executing these events is of utmost importance. Furthermore, the feedback from the participants in these events will provide hints whether the topics of these workshops are appropriate to generate demand for our consultancy and co-creation services.

7 Conclusion

The TAO project has found that online communities of older adults are confronted with specific problems affecting the development of such communities. Key challenges in this regard are the lower degree of knowledge of and familiarity with Internet technologies in the generation 50+ as compared to online communities that are composed of younger members. Therefore, online communities of older adults have to develop strategies that are tailored to the needs of older adults. A key element of these strategies is a relatively high degree of direct (face-to-face) service provision and communication, which is rather untypical for online communities with younger members. Another challenge that particularly affects older adults – but should be addressed by online communities in general – are the technical requirements from websites to display contents to the users. TAO has developed approaches to evaluate and improve websites in this regard.

The analysis of the impact of online communities and Internet technologies on the social and mental well-being and the social inclusion of older adults has revealed that the Internet is apparently no means in order to improve these conditions of older adults but a very important means for older adults to keep their level of activity, social inclusion and well-being. Thus, online communities of older adults and Internet technologies provide important measures to avoid loss of social contacts, opportunities to participate in social, political and economic life, and to slow-down the decrease of well-being that is often associated with the process of aging.

A review of online communities in a range of European countries showed that these challenges and opportunities are not bound to country-specifics, even though the regulatory framework and the organizational context in which they involve and operate are different.

Finally, based on the factors the project has identified as key challenges of online communities of older adults the project consortium has developed a business strategy and business model that allows to overcome these challenges through new ways of collaboration between different actors, taking account of the specific needs and opportunities of the silver market.

Within subproject 2/3, the main focus was on improvement of the usability and accessibility of online community platforms. After having identified crucial usability requirements for the Drupal based seniorweb.ch platform, as well as accessibility issues of the German Wikipedia, our project partners focused on implementation of the requirements.

In the case of Wikipedia, a web site was published listing the accessibility issues and tracking its implementation status. The Mediawiki developer community is encouraged to participate in the improvement process, currently the German Wikimedia Chapter realizes some improvements.

In the case of Drupal, a translation management module has been designed and implemented. This helps to improve the usability of multi-lingual web sites which are based on the Drupal platform such as seniorweb.ch

The concluding findings of Subproject 4 are based on successful collaborative action research over the course of the project: the goals, activities and progress of the TAO community partners were concomitantly observed and supported by the research partners. Diverse face-to-face and online activities to activate, mobilize and integrate older adults were developed collaboratively, ranging from traditional advertising, to online-courses, e-learning and virtual learning groups. Successful outreach activities were dependent on organizational setup, strong partners and a good management of volunteers. To link the educational activities with acquiring and actually involving new members, a user-centered perspective, a combination of online and offline activities and personal user support proved to be crucial. The methodological background for a sustainable community is the participative

interaction of all actors involved, as for example in co-creation, involving professionals, volunteers and older adult customers. A certain level of professionalization turned out to be a pivotal factor for the success of an online community. As the value of online communities is largely created by voluntary contributors, their activities need to be integrated in an overall strategy as part of a business model. Recommendations on how to deal with the special needs of the diverse target group of older adults were developed based on concomitant research and published in an Online Handbook to support online communities wishing to involve older adults in their communities' activities. One of the main goals of this Handbook was to develop a successful and sustainable Community of Practice (CoP), with a broad array of stakeholders contributing to and using the Handbook. To establish the Handbook and CoP on a broad and international level and to achieve a maximum sustainability, it was disseminated within the national and international networks of the TAO consortium. To be able to keep the CoP alive and open the Handbook to a more vivid adaptation by external stakeholders, the TAO consortium concluded that a translation of the contents would be extremely helpful. The translation process will certainly not be implemented within the remainder of the TAO project but may serve as a link to future projects deriving from TAO.

The exploitation plan and business model developed out of the TAO project tackles the key challenges online communities of older adults are confronted with and offers all involved parties to tap benefits from interacting with older adults. The challenges of online communities of older adults can roughly be summarized as:

1. Attract and retain older adults
2. Activate older adults to contribute content
3. Managing the online community
4. Developing an efficient business strategy
5. Developing sustainable business models

The key idea of the business strategy is to establish a network of loosely collaborating partners that span from members of online communities of older adults as “designers of their life” to service providers and manufacturers targeting the silver market, with the community platform providers as a hinge between community members and such third parties. The consortium partners of the TAO project will provide consultancy services to community platform providers in order to help them developing sustainable business strategies and business models and to community platform providers and third parties in order to help them organizing the envisaged new forms of collaboration. The community platform providers are confronted with new tasks, in this regard, of which the most important one is to serve as a gatekeeper for their online community members.

8 Annex I: Contents of the TAO Handbook

Chapter/Title	Main Author(s)	Contains results from subproject...
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Introduction	Meike Westerhaus, Linda Grieser	N/A
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Definitions		
Target groups	Karen Torben-Nielsen	SP 4
Online communities	Jonathan Bennett	SP 4

Background information		
Fostering older adults' online participation	Jonathan Bennett	SP 4
Older Adults and Online Communities (Exploratory Study)	Jonathan Bennett	SP 4
Volunteer Management and Motivation	Karen Torben-Nielsen, Meike Westerhaus	SP 4
Mutual Benefits of Volunteer Work	Meike Westerhaus	SP 4
Usability	Jonathan Bennett	SP 2, SP 4
Accessibility	Linda Grieser	SP 2/3
TAO Survey Among Older Adults-Wave 1	Stijn Bannier	SP 5
TAO Survey Among Older Adults-Wave 2	Stijn Bannier	SP 5
Context Analysis	Stijn Bannier	SP 5

Activities		
<i>Notes on different types of activities:</i> Activities initiating older adults to meaningful use of the internet	Jonathan Bennett	SP4
Activities with volunteer instructors: practical experiences	Karen Torben-Nielsen	SP4
<i>Examples of activities:</i> Facebook Activities	Daniel Reich, Meike Westerhaus	SP4
Free Cruise on the Internet	Jonathan Bennett	SP1/ SP4
Online Learning Activities	Daniel Reich, Simon Lüke	SP 4
Open TAO Workshop	Jan-Mathis Schnurr, Linda Grieser	SP4
Silver Knowledge	Markus Marquard, Annette Kintzi, Elvira Schmidt, Meike Westerhaus, Ralph Schneider	SP1/ SP4
Wikimedia Seniors Outreach	Beat Estermann	SP1/SP4/SP8
Online Co-Creation	Stijn Bannier	SP1/ SP4
SeniorWeb NL's online contact services	Stijn Bannier	SP1/ SP4
Seniorweb CH	Benjamin Spycher	SP 1/SP 4

terzLivingLab	Benjamin Spycher	SP 1/SP 4
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Online Tools		
Online tools: general remarks, approach and requirements Collaboration: working together, online and in real-time Web conferencing: communicating over the web Virtual classrooms: remote teaching	Simon Lüke	N/A
Online Tools and people 50+	Linda Grieser	N/A

General Conditions		
Business Models	Martin Wyttenbach	SP 1/SP 4
Public Relations	Jonathan Bennett	SP 7
Sponsorship/Fundraising	Markus Marquard, Ralph Schneider, Rüdiger Glott	N/A
Communities of Practice	Meike Westerhaus	SP 4

Methods and Practical Tools		
Co-Creation with Older Persons	Stijn Bannier	N/A
Planning methods	Rüdiger Glott	N/A
Geragogical methods for cooperation and seminars	Ralph Schneider, Markus Marquard	SP 4
Accessibility Tool	Linda Grieser	SP 2/3

Problem-oriented access	Jonathan Bennett, Meike Westerhaus, Jan-Mathis Schnurr	N/A
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9 References

- Arnold, G. and Krancioch, S., 2008. Current Strategies in the Retail Industry for Best-Agers. In: Kohlbacher, F. & Herstatt, C. (Eds.), 2008. "The Silver Market Phenomenon: Business Opportunities in an Era of Demographic Change". Berlin: Springer-Verlag, pp. 173-183.
- Bolier, D. (1996). *Hotel Management*. Zoetermeer: SVH.
- Burgelman, J.C., 2001. How Social Dynamics Influence Information Society Technology. Lessons for innovation policy. In: OECD (Ed.). Social Sciences and Innovation. Workshop proceedings.
- Cammaerts, B., Burgelman, J.C. (Eds.), 2000. Beyond Competition: Broadening the Scope of Telecommunications Policy. Brussels: VUB University Press.
- European Commission, 2009a. 2009 Ageing Report. Economic and budgetary projections for the EU-27 Member States (2008-2060), European Economy 2/2009. Available online at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf.
- European Commission, 2009b. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Dealing with the impact of an ageing population in the EU (2009 Ageing Report). Brussels: European Commission. Available online at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0180:FIN:EN:HTML>
- European Commission, 2010a. e-Inclusion. Available online at: http://ec.europa.eu/information_society/activities/einclusion/index_en.htm
- European Commission, DG Information Society and Media, 2010b. Overview of the European Strategy in ICT for Ageing Well. Available online at: http://ec.europa.eu/information_society/activities/einclusion/docs/~ageing/overview.pdf. Accessed 31 May 2013.
- Feagin, J., Orum, A., & Sjoberg, G. (Eds.). (1991). *A case for case study*. Chapel Hill, NC: University of North Carolina Press.
- Golding, P., Murdock, G., 2001. Digital Divides: Communications policy and its contradictions. In: *New Economy*, Vol. 8, No. 2, 110-115.
- Hedrick-Wong, Y. (2006). *The Glittering Silver Market. The Rise of the Elderly Consumers in Asia*. New York: Wiley & Sons.
- Hokkeling, J., & de la Mar, L. (2012). *Mood maker*. Amsterdam: Uitgeverij Boom Nelissen.
- Ivan, I., 2009. Types of Welfare States in the European Union. Available online at <http://suite101.com/article/types-of-welfare-states-in-the-european-union-a112254>.
- Kaakinen, J. and Törmä, S. (1999). *A pilot study on gerontechnology: The ageing population and*
- King, C.A. (1995). What is hospitality? *International Journal of Hospitality Management*, 14(3/4), 219-234.
- Kohlbacher, F. and Herstatt, C. (Eds.) (2008). *The Silver Market Phenomenon: Business Opportunities in an Era of Demographic Change*. Berlin: Springer-Verlag.
- Krischer, J. (2013). *Ageing with telecare at home. Understanding what it means to grow old with innovative healthcare technologies in a home(care) setting*. (Master's thesis in progress). Maastricht University, Maastricht, The Netherlands.
- Lashley, C., 2007. Discovering hospitality: observations from recent research. *International Journal of Culture Tourism and Hospitality Research*, 1(3), 214-226.
- Light, J., 2001. Rethinking the Digital Divide. In: *Harvard Educational Review* 71/4 (Winter 2001), 710-734.
- Maier-Rabler, U., 2002. Cultural aspects and digital divide in Europe. *Medien Journal*, 3(2002), 14-32.
- Maier-Rabler, U., 2010. E-Policies and the Diversity of European Information Cultures, in: *INTL: Technological Issues* (Topic) 10/2010; 1-15.
- Marshall, C. and Rossman, G. B. (1999). *Designing qualitative research*. Thousand Oaks, CA: SAGE Publications.
- Merton, R. K., Fiske, M. and Kendall, P. (1956). *The Focused Interview: A Manual of Problems & Procedures*. Glencoe, Illinois: Free Press.
- Morgan, David L. (1998). *The focus group guidebook*. Thousand Oaks, CA: SAGE Publications. *opportunities related to technology* (in Finnish). Helsinki: Office of the Parliament.

- Murata, H., 2008. The Business of Aging: Ten Successful Strategies for a Diverse Market. In: Kohlbacher, F. & Herstatt, C. (Eds.), 2008. "The Silver Market Phenomenon: Business Opportunities in an Era of Demographic Change". Berlin: Springer-Verlag, pp. 309-324.
- Osterwalder, A. and Pigneur, Y. (2010). Business Model Generation. Hoboken, New Jersey: Wiley & Sons.
- Sapir, A., 2006. Globalization and the Reform of European Social Models. In: JCMS, Vol.c44, No. 2. pp. 369–390.
- Severt, D. Aiello, T., Elswick, S. & Cyr, C. (2008). Hospitality in hospitals? *International Journal of Contemporary Hospitality Management*, 20(6), 664-678.
- Stegeman, I., Otte-Trojel, T., Costongs, C., & Considine, J., 2012. Healthy and Active Ageing. Healthyageing.eu. Available online at <http://www.healthyageing.eu/sites/www.healthyageing.eu/files/resources/Healthy%20and%20Active%20Ageing.pdf>
- Warschauer, M., 2002. Reconceptualizing the Digital Divide. In: First Monday, vol.7, 2002.
- Wintjes, R., Nauwelaers, C. (Eds.), 2008. Innovation Policy in Europe: Measurement and Strategy. Cheltenham, UK: Edward Elgar Publishing.

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