Ambient Assisted Living Joint Programme
Call 2

D 1.1: Senior's Participation and Roles

Full title:
VIRTUAL NETWORK TO EMPOWER THE INTEGRATION OF SENIORS INTO AN ACTIVE COMMUNITY IN THE POST RETIREMENTYEARS

Acronym:

SENIORENGAGE

List of participants:

*Participant no.**	*Participant organisation name*	*Participant short name*	*Organisation Type*	*Country*
1 (Coordinator)	Centre de Recerca i Innovació de Catalunya, S.A.	CRIC	SME	ES
2	Feltalálói És Kutató Központ Szolgáltató KFT.	MFKK	SME	HU
3	Center for Usability Research and Engineering	CURE	R&D	AT
4	JAMK university of applied sciences	JAMK	University	FI
5	Microlink PC ltd	MICROLINK	SME	UK
6	Association of Care Giving Relatives of Jyväskylä Region	CAJYR	End-user Organisation	FI

Control Versions of D1.1:

Version	Date	Description	Description of Changes	Author
A	5.4.2011	Template for the deliveries WP1/Incomplete draft		CRIC JAMK
B	10.5.2011	Incomplete frame/draft for comments		JAMK
C	12.5.2011	Input from CURE		CURE
D	27.5.2011	Corrections and results by JAMK		JAMK
E	13.6.2011	Corrections and proof reading		JAMK, CURE, CRIC, Microlink
F	30.6.2011	Final		JAMK

Table of contents

List of Figures

List of Tables

Acronyms and Abbreviations

Acronym, Abbreviation	Definition
ASEP	The Austrian Senior Expert Pool
Cajyr	The Association of Care Giving Relatives in the Jyväskylä Region
CRIC	Centre de Recerca i Innovació de Catalunya
CURE	Center for Usability Research and Engineering
ECTS	European Credit Transfer and Accumulation System
JAMK	Jyväskylä University of Applied Sciences
MFKK	Feltalálói és Kutató Központ Szolgáltató KFT.
Microlink	Microlink PC ltd
UML	Unified Modeling Language
VoIP	Voice over Internet Protocol

EXECUTIVE SUMMARY

The SENIORENGAGE project is funded under the AAL program. The current project addresses the need to help retired senior professionals retain their sense of self-worth and continue to participate in society in the post-retirement years by developing network of online knowledge sharing and community.

The partners in the project are Centre de Recerca i Innovació de Catalunya, S.A., Feltalálói És Kutató Központ Szolgáltató KFT, Center for Usability Research and Engineering, JAMK University of Applied Sciences, Microlink PC ltd and Association of Care Giving Relatives of Jyväskylä Region.

The main objective of SENIORENGAGE is to provide a tool by which seniors and new professionals may network with each other using the latest Web 2.0 and social networking tools in a single online destination. In this practical networking internet platform the senior citizens can continue to contribute to their professions and to different areas of society which could benefit from their knowledge and expertise. SENIORENGAGE will improve the quality of life of retired and semi-retired seniors by providing them with an outlet for sharing their professional knowledge and allowing them to continue to feel active and useful in their field.

The work plan of this project comprises nine work-packages of which the first work package deals with the topic Senior´s participation and roles. The duration of the first work package was from 1.12.2011-31.5.2011 and this report will concentrate on the work package one.

1. INTRODUCTION

The main objectives of this work package, Senior Participation and Roles, are to collect the user requirements and needs as well as to analyse the current business reality of this subject area. The data acquisition was carried out with four methods: market survey, enquiries/surveys, scenarios and focus groups discussions.

WP1 has executed a complete study of the social and business reality in which the SENIORENGAGE system will operate, so as to increase the knowledge of the consortium and obtain particular and updated data that will be used in the development of the SENIORENGAGE system.

This work package will provide:

-A determination of the real needs and expectations of retired and semi-retired senior professionals, as well as young professionals as relates to this new platform

-A description of the target group's possible technical and health limitations as well as extensive background information about their communication behaviour.

The activities in this work packages have been broken down in Table 1.

TABLE 1. Work-Package Activity Breakdown

Activity	Dates	Actors	Notes
-Initial planning of questionnaires -Pilot testing -Translations and back translations -Focus group discussions	Year 2010	JAMK, CAJYR	These actions prepared the ground for the of work package 1.
Technology watches	January 2011	Microlink, CRIC, CURE, JAMK, MFKK, CAJYR	Business reality
Case Scenarios	January	CRIC, CURE, JAMK, CAJYR, Microlink, MFKK	Expectations
Modeling of questionnaires	February- March	JAMK, CAJYR, CURE, CRIC	
Market research	March-April	Microlink	Business/Market reality
Translations of questionnaires, Corrections for published versions of questionnaires	March, April	JAMK, CURE, CRIC	Online and paper versions in Finnish, German and Spanish
Responses Preliminary data from survey	April-May	JAMK	In Finland and in Austria
Presentation of preliminary data from surveys	May 3rd London	JAMK	Caregivers data not included
Focus Group Interventions	May 9-20.5	CAJYR, CURE, JAMK	
Final report	May	All partners	

	23-30.6.2011		

2. METHODS

2.1 Market research and survey

In the task 1.1, the main objective was to research the state of market in this subject.
A search for existing research and statistical data relevant to SENIORENGAGE was executed by Microlink PC Ldt. The result of searches reviewed the attitudes and behaviour of those around the age of 60 and over regarding their use of ICT and Internet in general, social networking and Assistive Technology.

Current e-learning applications, e-learning specifications and professionals and social networks were gathered by each partner with technology watches and the existing knowledge was updated. A form for the technology watch was developed by Microlink for gathering the data. The content of the form was: Name, target market, price, site, list of features, comments (Appendix 1).

2.2 Study about professional and IT needs

In the task 1.2 the main objective was to ascertain the needs of senior and young professionals and prospects about the SENIORENGAGE platform by surveys. The results of the survey form the underlying basis for developing the SENIORENGAGE project equipped with all the tools to facilitate and enhance the professional knowledge interchange in the elder years and promote intergenerational learning and collaboration.

The study was carried out with surveys, scenario building and focus group discussions.

2.2.1 Questionnaires in survey

The survey provided in paper format and online structured questionnaires was conducted in Finland and in Austria. The questionnaires were focused on the two target groups: retired and nearly retired senior and young professionals who answered the questions anonymously. The questionnaires were offered to the partners in English, who translated the questionnaires to their national languages.

Senior professionals' questionnaires (Appendix 2) consisted of the current use of computer and Internet. Learning skills and expectations and wishes from such a social network, as well as a likelihood and willingness to use the platform were also asked. By questions of health and functioning and social participation and communication with other people we wanted to collect data about possible technical and health limitations for the development of content and user-friendly solutions in SENIORENGAGE platform.

In the questionnaires of young professionals (Appendix 3) were asked their attitudes towards senior or retired professionals as well as expectations and wishes from such a social network, and also a probability to use the SENIORENGAGE platform. They were also asked about use of ICT technology.

At the end of both questionnaires the participants were asked if they would like to support the development of the platform by taking part in focus groups, usability tests, field trials or other tasks. If the participants agreed they provided their contact details so that they can be invited for later actions.

The data from the questionnaires was analysed using descriptive statistics; per cents and frequencies. Results are illustrated with tables and figures.

2.2.2 Samples of the target group

The target group of this project was clarified and specified in the KO meeting and the initial description of the target groups are:

Senior Professionals (and retired professionals): These individuals are senior citizens nearing retirement or currently in retirement. They will use the platform to continue feeling engaged in a professional community, reducing the risk of depression caused by detachment from one's profession in the post-retirement years. Instead of feeling as if they have been stripped of their identity upon retirement, seniors will continue to feel engaged and above all, useful, as they will benefit emotionally from the help and guidance they are providing as a mentor to younger professionals. They will also be able to continue to be in contact with their profession by interacting with other seniors from their field.

Young Professionals (college students nearing completion of their degrees or young professionals in their first job experiences): They will be able to find a professional retired mentor in the system to help guide them through the challenges of their career. Young professionals ("mentees") and SMEs will enjoy advice in their professional field as provided by a seasoned expert with years of knowledge.

As there are various cultural, infrastructural and societal differences within Europe we strived for young and senior professional end-users from Finland, Austria and Spain in order to gain more general results out of a broader European society. Unfortunately, Spain was not able to execute the surveys due to strict time limits.

Senior professionals

Senior professionals in Finland consisted of 159 persons (over 55 years) at JAMK. They were teachers from different degree programs and other staff members. In addition a postal survey was conducted on caregivers (n=60) in the Jyväskylä region. These caregivers are retired persons who are taking care of their relative with poor health conditions. Caregivers are usually family members, often one’s spouse, who give informal 24-hour assistance for persons with dementia or for the frail elderly. Family caregivers provide the major percentage of informal, in –home caregiving. Their challenge is the ability to retain employment if

the care needs of their care recipient become too great. Caregiving limits their participation in the social network. Caregivers who live with their care recipient around the clock may be at risk for social isolation and depression.

This study was approved by JAMK University of Applied Sciences and Association of Care Giving Relatives. The caregivers also gave their written consent.

In Austria the senior professionals were recruited on the one hand by spreading the questionnaire to appropriate persons in the test person database of CURE. On the other hand CURE contacted the Austrians Seniors Expert Pool[1] (ASEP) to ask them to spread the questionnaire along their members. Due to their profile ASEP corresponds to our target group. ASEP is an association of Austrian retired professionals who provide their knowledge and their experience to younger professionals. They are in a way doing what SENIORENGAGE intends to achieve with its platform online; that is, to reach retired professionals who are suffering from social exclusion all over Europe.

Young professionals

The group of young professionals in Finland was students (n=296) having already achieved more than 180 ECTS credits and nearing their degree from different degree programmes at Jyväskylä University of Applied Sciences. The students had given the permission to use their data for research purposes. In Austria the younger target group was represented by young professionals and students nearly graduated between 21 and 30 years old. They had been contacted via E-Mail out of CURE`s test persons database and via Xing and Facebook statements of the younger personnel.

2.3 Scenarios

A set of use cases in the form of scenarios, have been developed by all partners. The members of the consortium collected first ideas for the creation of the functional environment as well as the assumed wishes of the target groups. As every partner provided a scenario, the consortium was able to collect a broad range of ideas and imaginations about the platform and therefore provided a baseline to further discuss these ideas. The scenarios were written from two different perspectives: on the one hand, with the view of a retired professional and on the other hand with the view of a young professional to the SENIORENGAGE platform. To verify these scenarios, they were presented to and discussed with participants of two focus groups (see 2.4). They evaluated the scenarios in terms of how realistic they are and how well they can identify themselves with roles of the senior and young professionals. To refine the scenarios they will be further iterated with end users.

2.4 Focus groups

[1] The Austrian Senior Experts Pool (ASEP) is an association of retired experts of different professional domains e.g. economy, administration or trading. According to their own statement they want to share their knowledge with the younger professionals in a practice-oriented, responsible, altruistic and voluntary way.

The aim of the focus groups was to develop ideas of how the platform should be structured and which features the participants would deem useful. Usually, in a focus group six to ten persons are invited to discuss their experiences or opinions around topics introduced by a moderator. The main benefit of this method is that due to group dynamics unexpected aspects around the topic of interest are brought up. Moreover, the group discussion can stimulate new ideas or encourage participants to talk about things they would not have thought about if they were interviewed alone.

The total duration of each SENIORENGAGE focus group discussion was three hours and it was recorded on video. At first the participants were introduced to each other and carefully informed about the sequence of actions and SENIORENGAGE project. The written consents for recording and use of data in research purposes were signed by participants. The focus groups were structured into four parts. After giving a detailed overview about what is the aim of SENIORENGAGE, we discussed the communication behaviour of the participants with focus on profession-related and internet-based communication. Subsequently, the participants brainstormed on functional and content features of the platform to be developed. After the presentation of three usage scenarios elaborated by the consortium more potential features were discussed. Afterwards every participant marked the five most desirable features and indicated the most useless feature in order to prioritise the features collected before. At the end the application potential of the platform was discussed. The procedure of the focus groups was exactly the same for young and retired professionals. The only difference was that the scenarios were presented with the view of young people to the young professionals and with the view of seniors to the retired professionals.

Participants:

The participants of the focus groups were recruited out of the pool of people, who had answered the correspondent questionnaire and agreed to be contacted. Two focus groups were conducted with young professionals and two focus groups with retired professionals in Austria. In Finland a focus group of senior professionals (n=5) was executed. The participants in Finland were two teachers over 55 years old from JAMK and three retired caregivers. The participants were selected randomly and invited by a phone call or by email.

The data analysis method for focus group discussions was thematic analysis. The themes were: communication, pros and cons of communication over the Internet, importance of knowledge transfer and features and functionalities for SENIORENGAGE platform. The features and functionalities were also prioritized by the participants. The discussion was written down by one researcher and observations were defined with video.

3. RESULTS

3.1 Market research and survey

A search of research and statistical data yielded the report "Attitudes and Behaviour of the Senior Population: Exploring the digital views of aging population. " (Appendix 4)

The key points from this research are:

- **Statistics pertaining to seniors in an online environment**: Digital Inclusion
  - Around 37% of those aged between 55 -74 years used the Internet on average at least once a week
  - The older a person is the less they tend to use the Internet
  - Internet usage amongst the older age groups has almost doubled over the last five years
  - Figures vary between the different surveys.

- **Information regarding senior use of social networks**
  - Around 80% of 55-74 year olds send/receive emails, but only 20% use the Internet for VOIP (Voice over Internet Protocol*)* and around 18% post messages to chat sites, blogs and social networking sites.
  - In the USA almost a quarter of those surveyed using Facebook were over 50 years old.
  - But older users are underrepresented in comparison to the general population on social networking sites.

- **Information on the most popular senior websites. What do they have in common?**
  - Top reasons for using the computer and going on websites were for email, searching for goods and services, travel, news and health.
  - Google, YouTube, Yahoo and Ebay equivalents
  - Common theme - Search, information, buying and selling
  - Very few are social networking sites came up; only LinkedIn

- **Barriers hindering seniors' usage of online resources**
  - Too expensive and see no need – fear of the unknown
  - Have poor technological skills, too complex, inaccessible
  - Deteriorating cognitive, physical and sensory capabilities
  - Information overload, spam, viruses etc.

- **Relevant data as it relates to digital inclusion and self-worth in the aging population. Possible health benefits.**
  - Cognitive performance improvements
  - Benefits to feelings of well-being
  - Less depressed and lonely
  - Build friendships and learn new skills

- **Assistive Technology most commonly used by seniors to access computers**
    - There does not appear to be any data to show which Assistive Technologies are used by the elderly for social networking purposes.
    - Adapting operating systems built in accessibility options appears to be mentioned more than specialist applications
    - There are many AT applications that would help the elderly and these are known to the experts and companies in the field, but not necessarily their potential users.
    - More research in this area is required.

- **Case studies**
    - Elderly users of social networks are buoyant about the impact it has on their lives.
    - Communication with friends and family is often mentioned
    - Some countries have set up specific social networks for the 55+ market.
    - Many networks exist for specific purposes such as hobbies

In addition, several technology watches were collected from partners to update the existing knowledge and analyse the current situation in markets. According to the results there existed no suitable or comparative actions in the market. There is no real EUROPEAN social network for seniors to compete with. Competing services are either localized to one country or centred on the U.S. market. Our closest competitor in terms of features – covering most of the features we propose – is Eons, which is a U.S.-focussed service.

3.2 Study about professional and IT needs

3.2.1 Results of the survey

In total there were 153 replies to the online questionnaire from senior professionals and 47 from caregivers. The total number of responders among young professionals was 82 (see table 2).

TABLE 2. Responders for questionnaires per country

Country	Senior professionals	Young professionals
Finland	Staff of JAMK total (N=159) n=90 Caregivers total (N= 60) n=47	Students of JAMK total (N=296) n=41
Austria	Senior experts n=63	Students n=41

In Finland the response rate was 57% among seniors and 78% among caregivers. There were total blank forms (n=13) in caregivers and the reasons for not responding were: the care recipient had died or the care recipient had moved to a hospital or other institution.

3.2.1.1 Results of senior professionals

Mean age of the seniors in Finland was 59 years, in Austria 67 years and caregivers 68 years. Most of the seniors in Finland were female (68-77 %) and the Austrian responders were mainly male (76%). Almost all were married (73-79%). (Table 3.)

TABLE 3. Background information of Senior Professionals

	Senior professionals Finland n=90		**Senior professionals Austria n=63**		**Senior professionals Caregivers n=47**	
	n	(%)	n	(%)	n	(%)
Male	29	(32.2)	48	(76.2)	11	(23.4)
Female	61	(67.8)	15	(23.8)	36	(76.6)
Marital status						
Unmarried	5	(5.6)	4	(6.5)	3	(6.7)
Married	70	(78.7)	46	(74.2)	33	(73.3)
Divorced	11	(12.4)	10	(16.1)	1	(2.2)
Widowed	3	(3.4)	2	(3.2)	8	(17.8)
Formal education						
None or elementary school	1	(1.1)	0	(0)	12	(27.3)
Secondary school	1	(1.1)	10	(15.9)	8	(18.2)
Upper secondary school	17	(18.9)	19	(30.2)	13	(29.5)
University level	63	(70.0)	30	(47.6)	6	(13.6)
Other	8	(8.9)	4	(6.4)	5	(11.4)
	0	(0.0)	0	(0.0)	0	(0.0)
Employment						
Full-time worker	69	(77.5)	2	(3.2)	2	(4.4)
Part-time worker	10	(11.2)	2	(3.2)	4	(8.9)
Retired	0	(0.0)	54	(87.1)	33	(73.3)
Part-time retired	10	(11.2)	2	(3.2)	2	(4.4)
Other	0	(0.0)	2	(3.2)	4	(8.9)

The senior professionals experienced themselves very healthy and functioning (Figures 1-2). On the other hand, the Austrian senior professionals expressed themselves less tired or exhausted than senior professionals in Finland. 24% of Finnish seniors felt themselves never or seldom tired or exhausted, but in Austria the corresponding percentage was 71.4%.

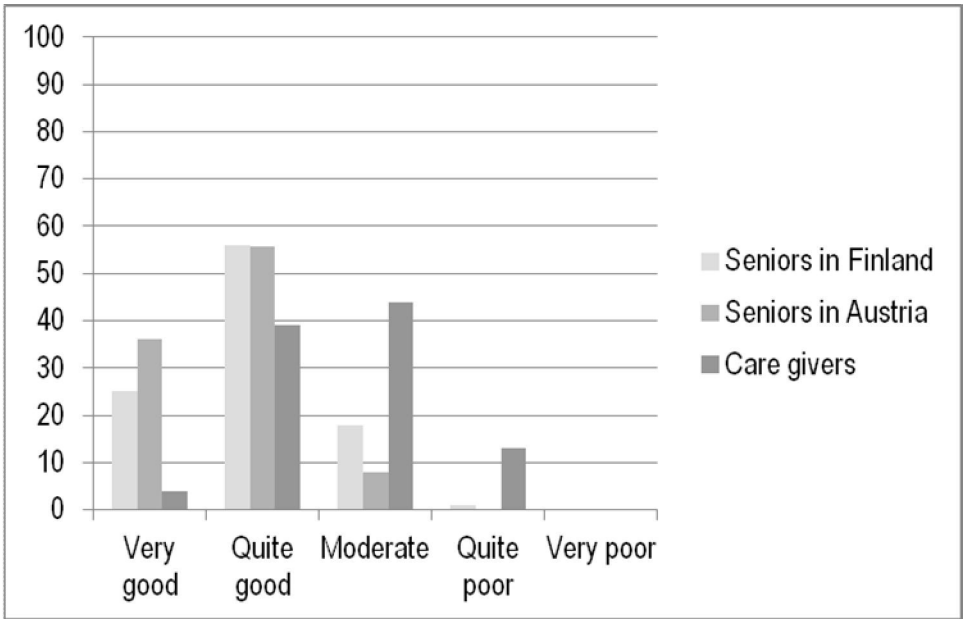


FIGURE 1. Health status of senior professionals (%).

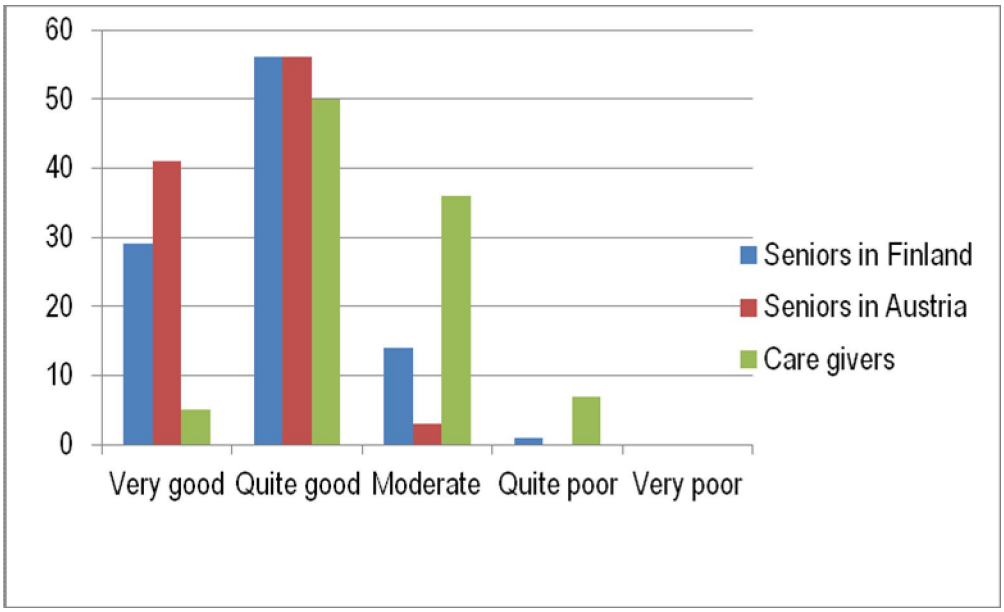


FIGURE 2. Functioning of senior professionals (%).

Social activity and participation

In their leisure time, the senior professionals mainly (>90%) used computer or the Internet, they read books and newspapers or did household activities. They were not so actively working in associations or in voluntary work. (Table 4).

TABLE 4. Leisure time activities and participation of senior professionals (%)

Leisure time activities / Group	Yes			Not interested			Would like to, but unable to due to time con-straints			Would like to, but unable to due to physical constraints		
	1 %	2 %	3 %	1 %	2 %	3 %	1 %	2 %	3 %	1 %	2 %	3 %
Read books, newspapers	97	97	93	1	0	2	2	3	5	0	0	0
Visit theatres, cinemas, cultural events	72	85	51	8	3	22	18	7	13	2	5	14
Sports	78	75	73	7	12	5	8	2	11	7	12	11
Housework and gardening, fishing, etc.	93	53	75	0	31	5	5	5	2	2	11	18
Work for organizations, associations, in politics	33	77	33	40	16	47	23	5	12	4	2	8
Watch TV, listen to music	90	97	89	3	2	2	7	2	7	0	0	2
Study, take part in seminars, courses	70	60	36	9	15	40	20	19	12	1	6	12
Travel	84	85	47	7	5	7	8	2	16	1	8	30
Meet friends	92	97	84	2	2	2	6	2	7	0	0	7
Handicrafts, arts	53	18	50	23	73	26	20	6	10	3	4	14
Voluntary work	16	68	25	27	18	42	52	8	19	6	5	14
Visit restaurants, dancing	25	65	9	55	20	79	19	4	2	1	12	10
Outdoor activities, nature observation etc.	89	73	82	3	16	2	6	7	7	2	4	9
Use the computer and Internet	98	100	78	1	0	9	1	0	4	0	0	9
Other, please specify	67	93	6	33	0	2	0	0	0	0	7	0

1= Senior professionals in Finland, **2=** Senior professionals in Austria, **3=** Caregivers

The senior participants' social participation was investigated also by asking which channels and how often they used them to communicate with their relatives and friends. Figures 3 and 4 show the senior participants' percentages of frequencies of communication channels usages.

For purposes of analyses the response categories in the questionnaires "At least once a day" and "Several times a week" were combined into "Daily", and the categories "Once a week" and "Several times a month" were combined into "Several times a month".

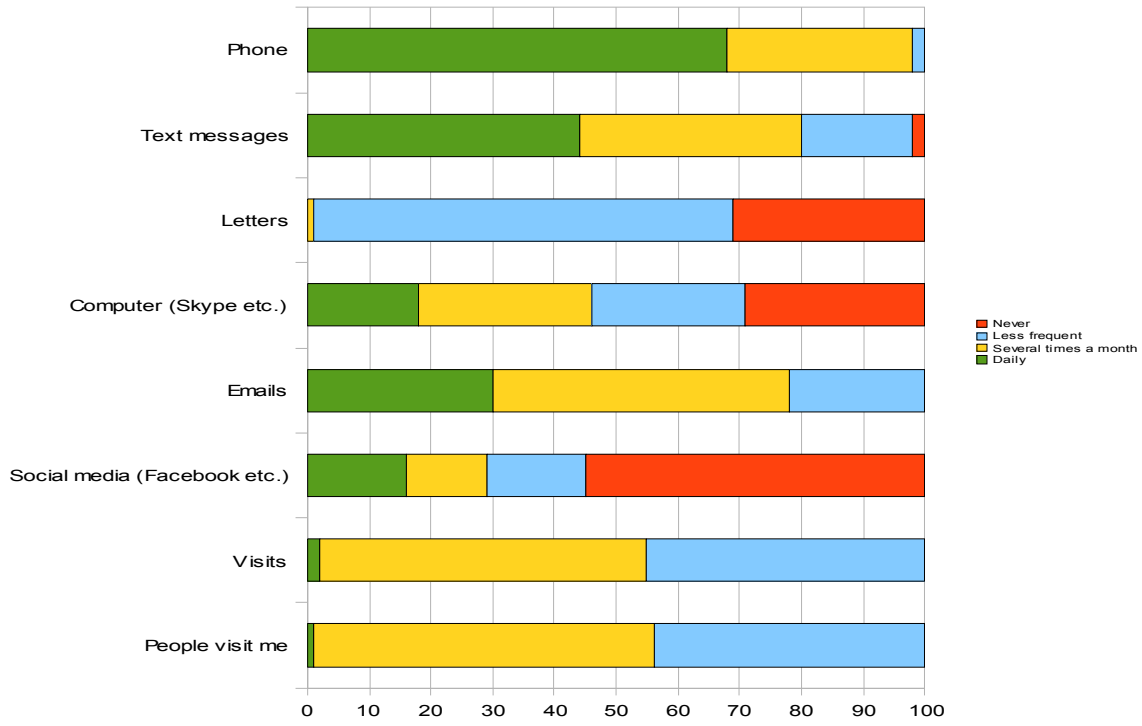


FIGURE 3. Finnish seniors' communication channels with friends or relatives (%).

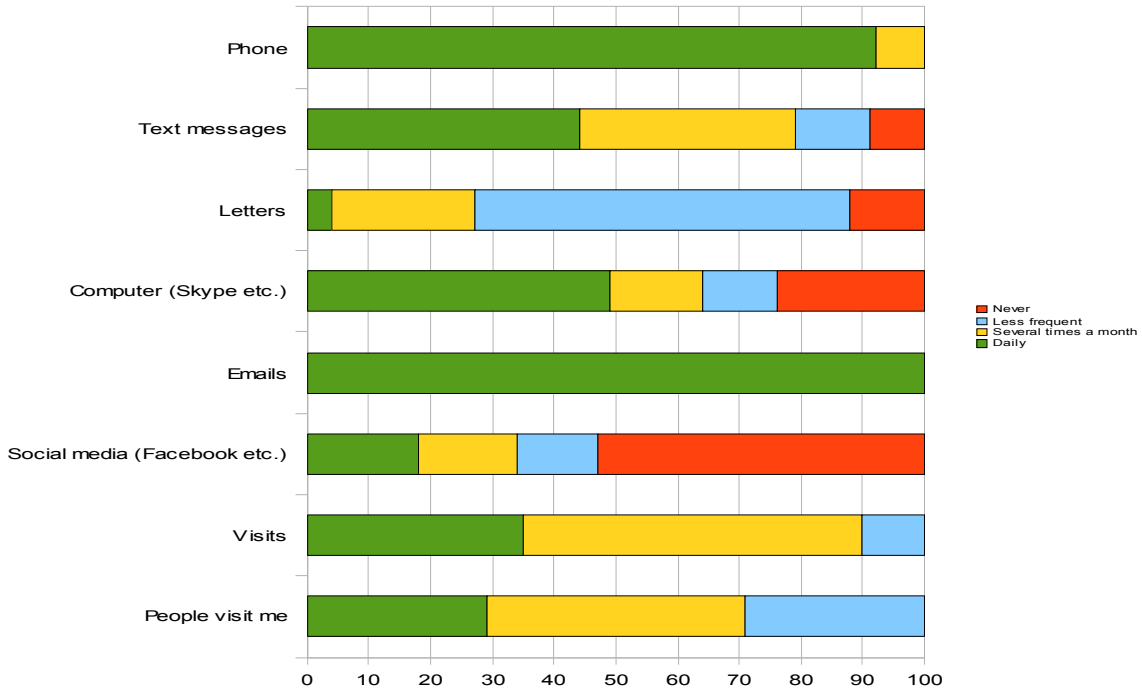


FIGURE 4. Austrian seniors' communication channels with friends or relatives (%).

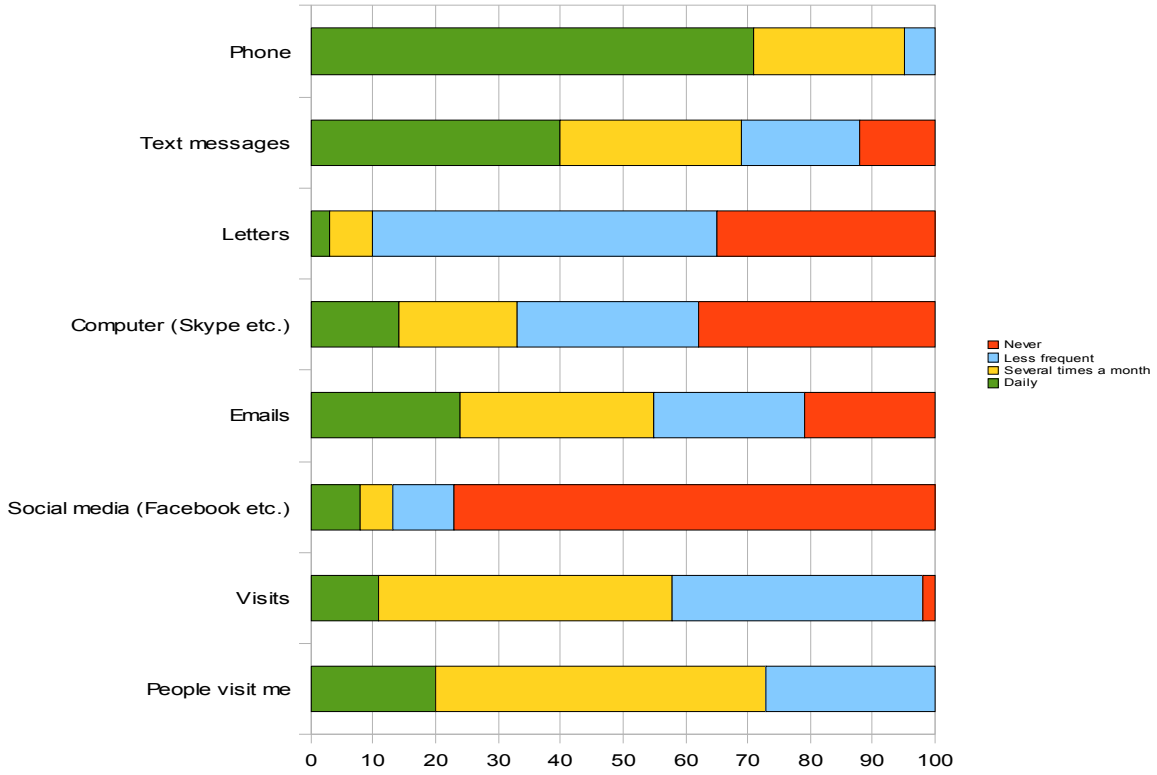


FIGURE 5. Caregivers' communication channels with friends or relatives (%).

The most common communication channel with friends and relatives was a phone with text messages among Finnish participants (Fig. 3, 5), whereas Austrian (Fig.4) seniors used daily emails. Utilization of social media like Facebook was most infrequent among all seniors' groups.

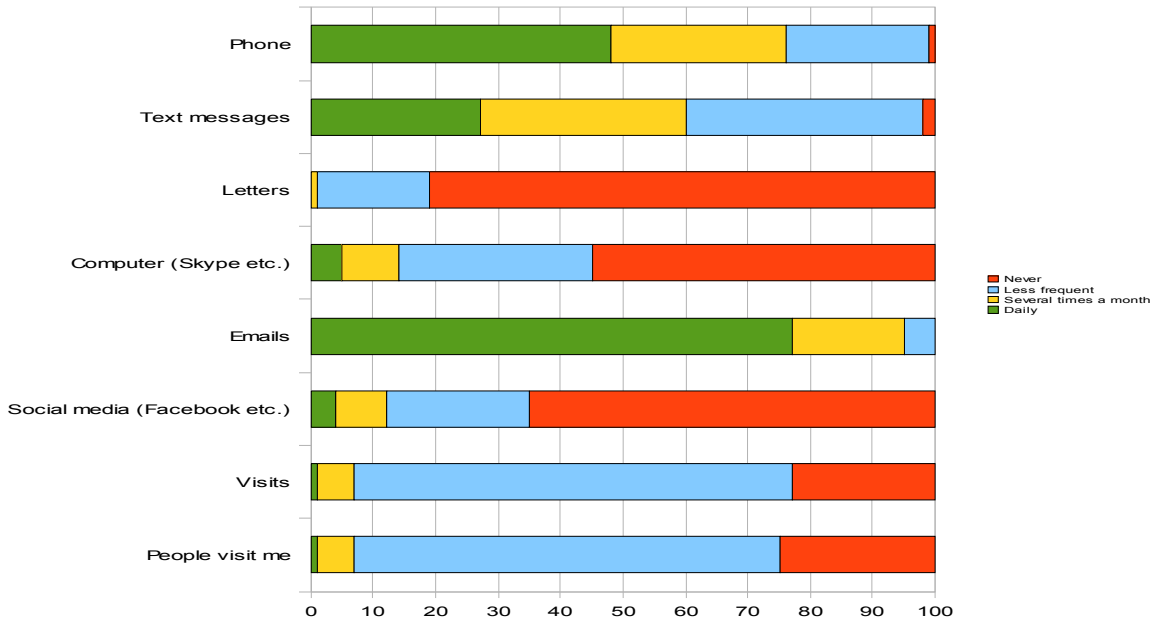


FIGURE 6. Finnish seniors' communication channels with colleagues (%).

The participants were asked also an exploitation of those abovementioned channels for communicating with their colleagues (Fig.6-8).

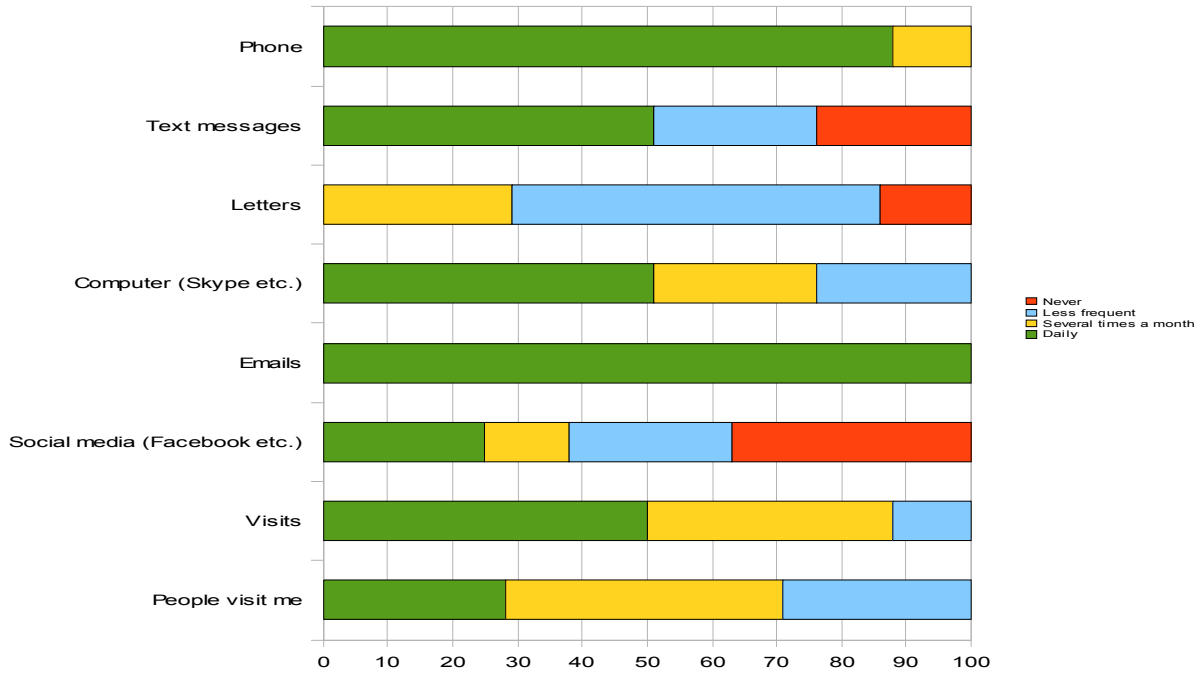


FIGURE 7. Austrian seniors' communication channels with colleagues (%).

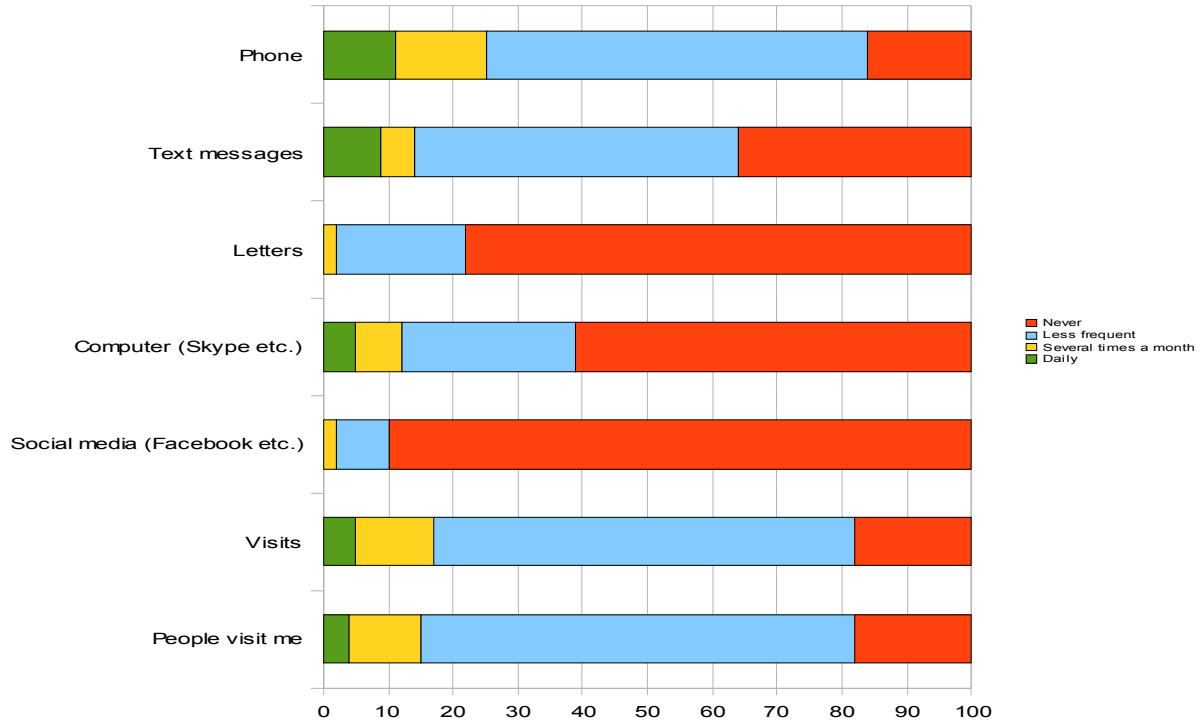


FIGURE 8. Caregivers' communication channels with colleagues (%).

Finnish (Fig.6) and Austrian (Fig.7) seniors communicated most frequently with colleagues by using emails and phone. Social media as a communication channel was more common among Austrian (25%) than among Finnish seniors (4%) and caregivers did not use social media at all. Overall caregivers' communication with colleagues was infrequent (Fig. 8).

Use of computer and the Internet

All senior professionals had a computer at home and only one responder from Austria and 10 caregivers from Finland did not have Internet connections. The computers were well-equipped for example with webcams, microphones and headsets. Almost all responders (95%) used computer and Internet daily.

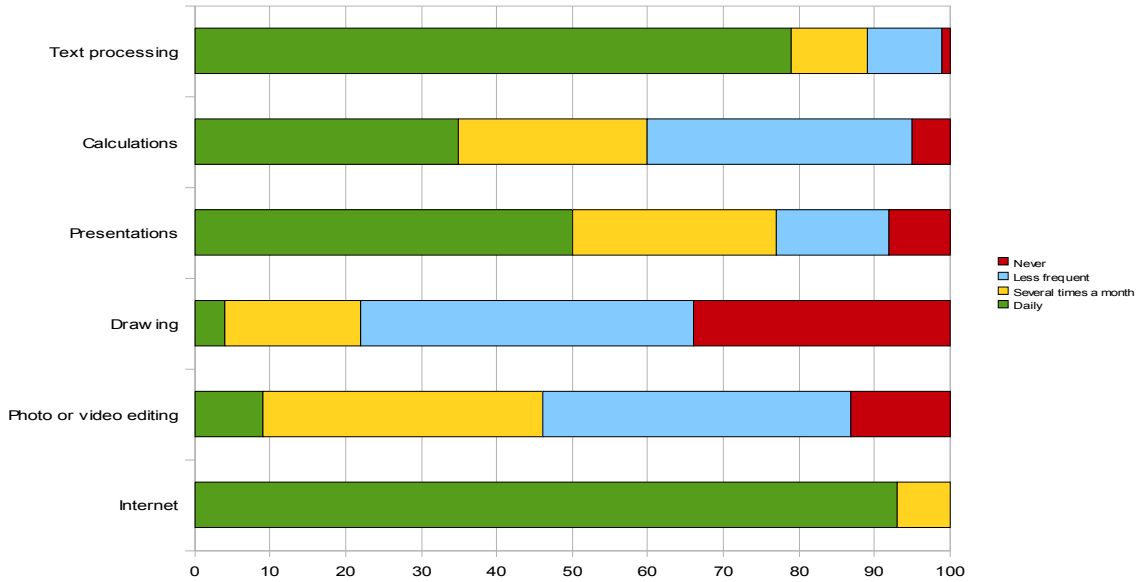


FIGURE 9. Finnish seniors' reasons for computer use (%).

Finnish (Fig.9) and Austrian (Fig. 10) seniors were asked, what purposes they use or like to use the computer. The most common purposes of computer use were the Internet and text processing. Using a computer for drawing was most frequent. Finnish seniors used a computer for making presentations more often than Austrian seniors given their employment status. 50% of Finnish seniors, who were mainly teachers used PowerPoint or equivalent at least once a day or several times a week. The percentage of Austrian seniors was 12.

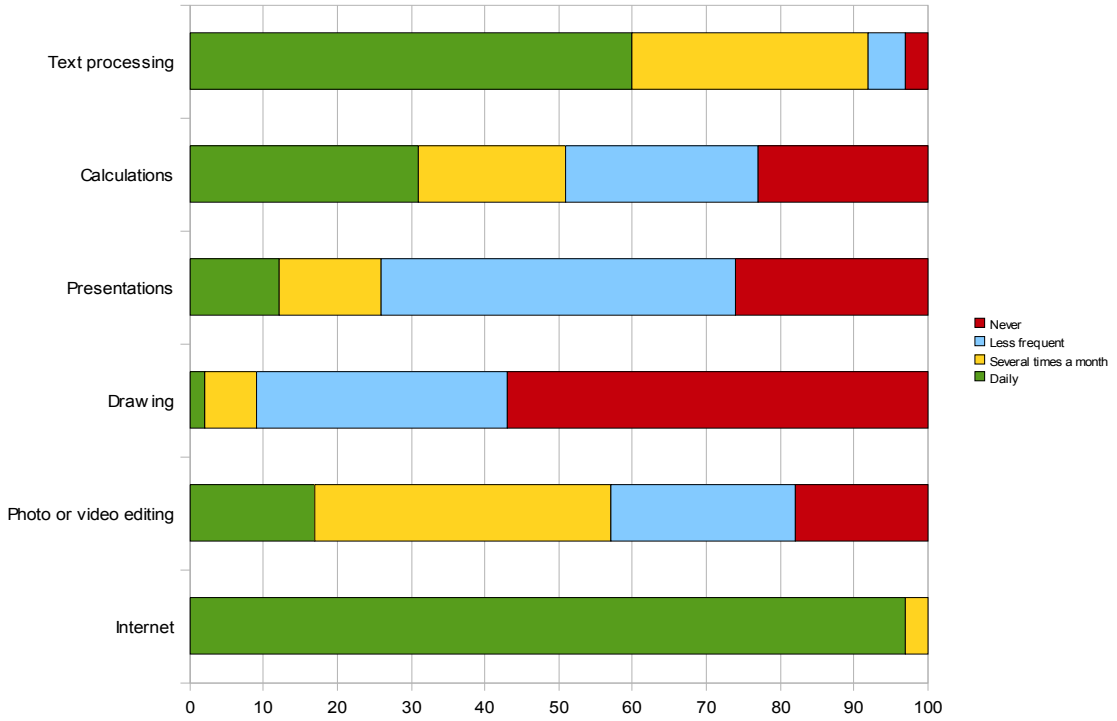


FIGURE 10. Austrian seniors' reasons for computer use (%).

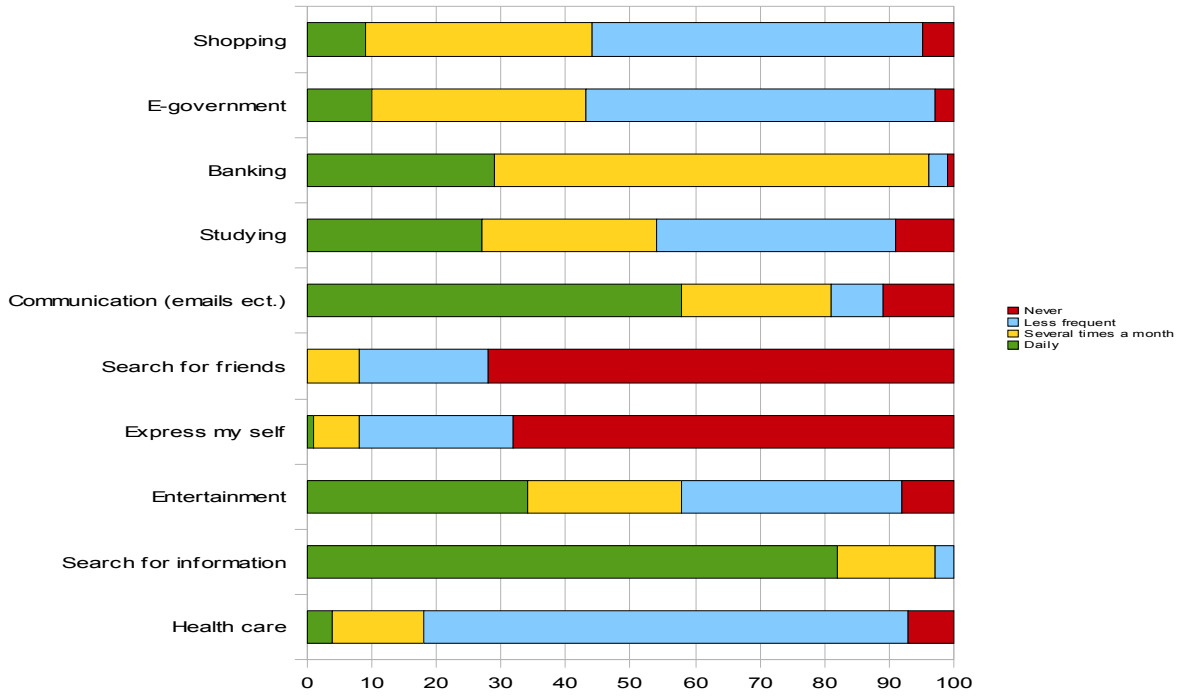


FIGURE 11. Finnish seniors' reasons for Internet use (%).

In Figures 11 and 12 the purposes the participants use or would like to use the Internet are shown. The most frequent reasons for using the Internet was searching for information, communication and entertainment, respectively, among both senior groups. The groups differed in using the Internet for health care purposes. Only 2 percent of Finnish seniors never used the Internet for that, whereas Austrian seniors' percentage was 57. Both groups

used the Internet most infrequently for expressing themselves like writing blogs and searching for new friends or partners.

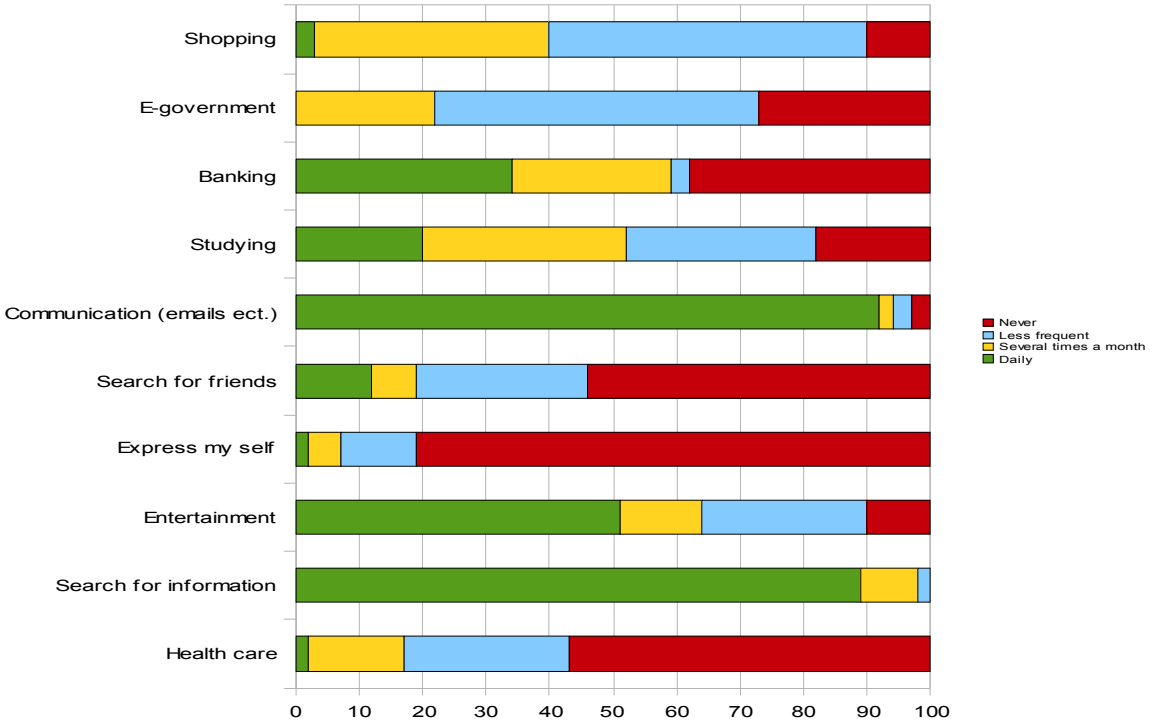


FIGURE 12. Austrian seniors' reasons for Internet use (%).

The participants were asked, how they usually search for information related their work or hobbies. The most common way of information retrieval was search engines for example Google in both Finnish (Fig.13) and Austrian (Fig.14) seniors' groups. 89% of Austrian and 97% of Finnish seniors used search engines often. Differences between the groups existed down to participants' employment status at the moment. 72% of Finnish seniors searched often for information by using internal knowledge of their company. 57% of them asked often information their current colleagues. One third of Finnish seniors (30%) never used previous colleagues as sources of information. Respectively, the percentages of Austrian seniors were 12% and 22%.

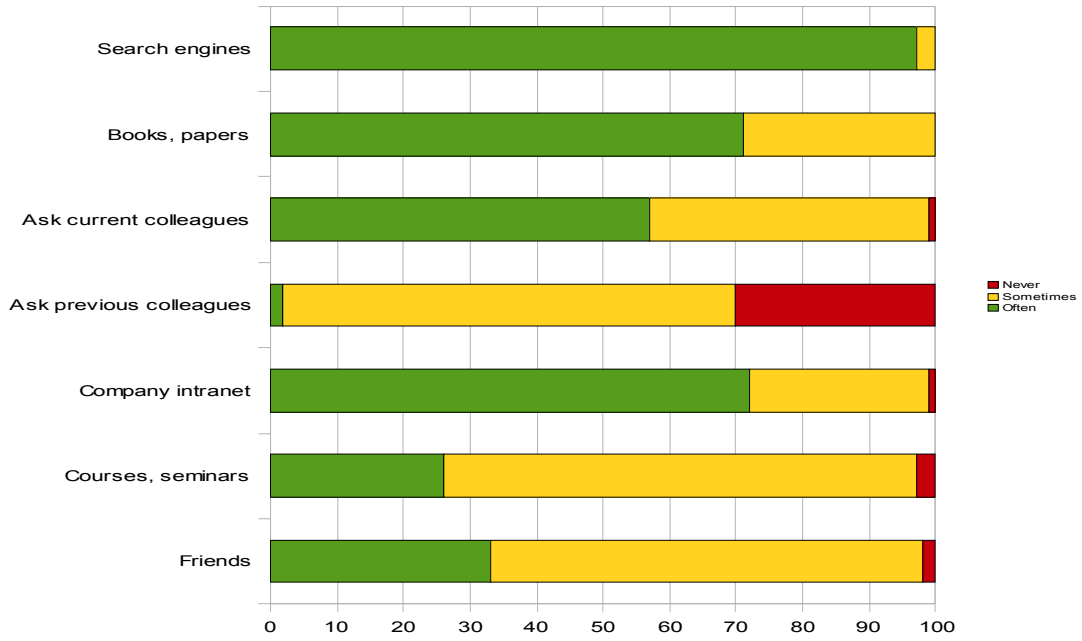


FIGURE 13. The ways of information retrieval used by Finnish seniors (%).

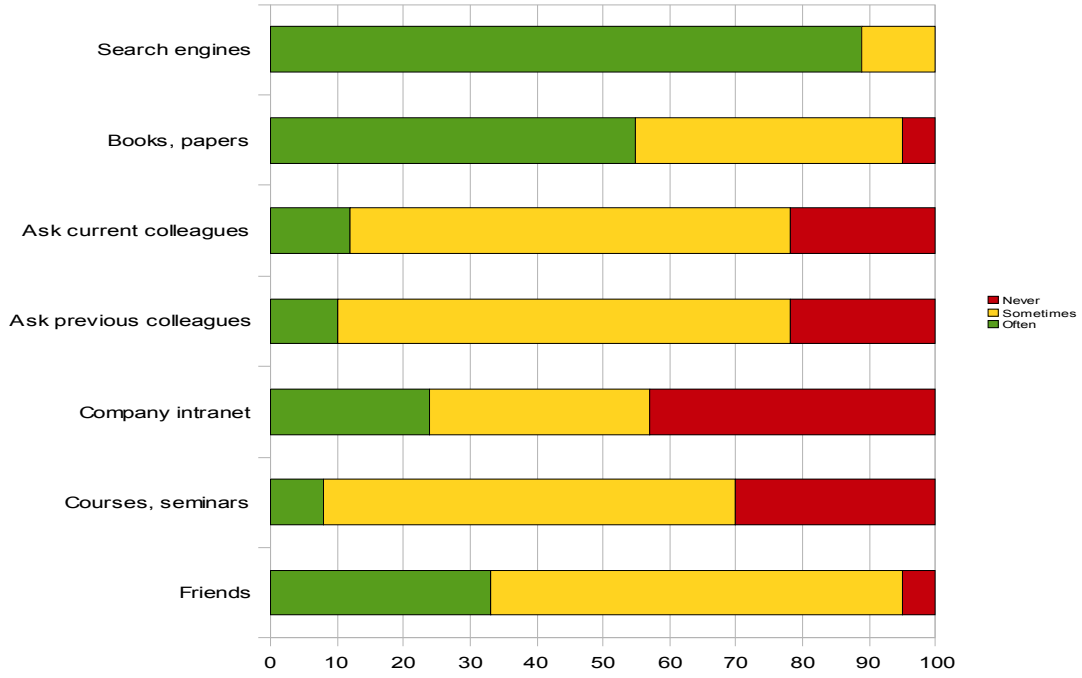


FIGURE 14. The ways of information retrieval used by Austrian seniors (%).

Learning skills

Senior professionals in Finland and Austria felt themselves to be average or expert users of computer and the Internet. 40% of caregivers expressed themselves to be average users and 23% were beginners. Learning skills of all senior professionals were quite good (Fig. 15).

They had learned to use computer in courses, but caregivers sought information also from manuals. The Internet was mostly learned independently.

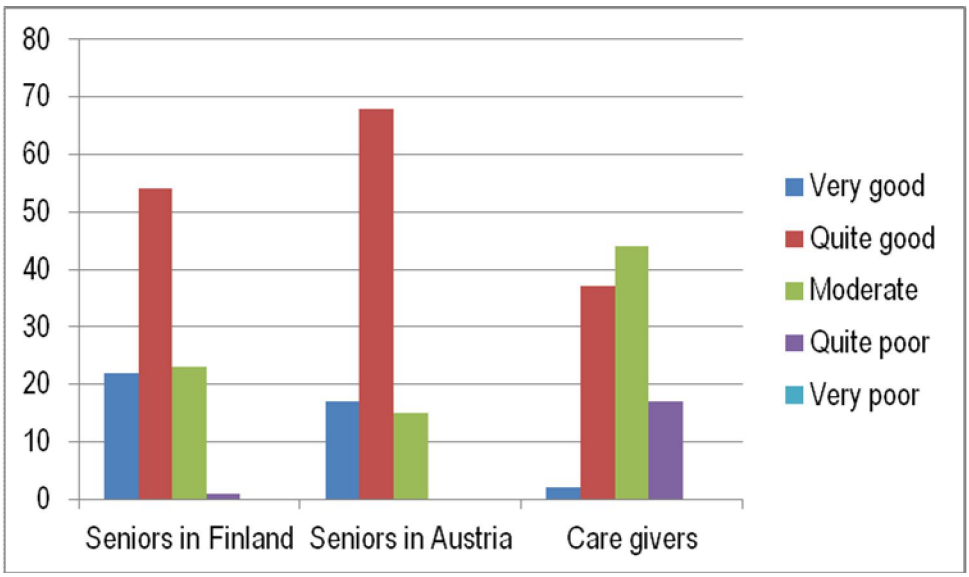


FIGURE 15. Learning skills of senior professionals (%).

The Finnish senior professionals needed computer and Internet at their work (92%) and half of them were also so interested in its possibilities. Austrian seniors and caregivers expressed their interest as the main reason for learning the use of computer and Internet. Over two third of responders wanted to learn more about computer and Internet use.

The Austrian seniors concerned themselves technical aspects (47%), loading programs (40%) and one third also wanted to learn more about Skype and discussion forums.

The Finnish seniors were not so interested in technical aspects (13%), but they wished to acquire skills of social media. There were a few comments in open questions concerning possibilities to learn new applications for interactive pedagogies and content provision, as well as picture/photo editing.

70% of Austrian senior professionals and almost all caregivers have not participated in e-learning courses. However, several of the Finnish seniors at JAMK have been as teachers or students in e-learning courses.

Following the professional field after retirement seemed to be very important or quite important (77%) among senior professionals. At any rate, over half of the caregivers were not able to answer or expressed “not important”.

The seniors were also asked about the likeliness to communicate with previous colleagues after retirement. In Austria 81% would very or quite likely communicate with their previous colleagues and in Finland 60% (Fig. 16).

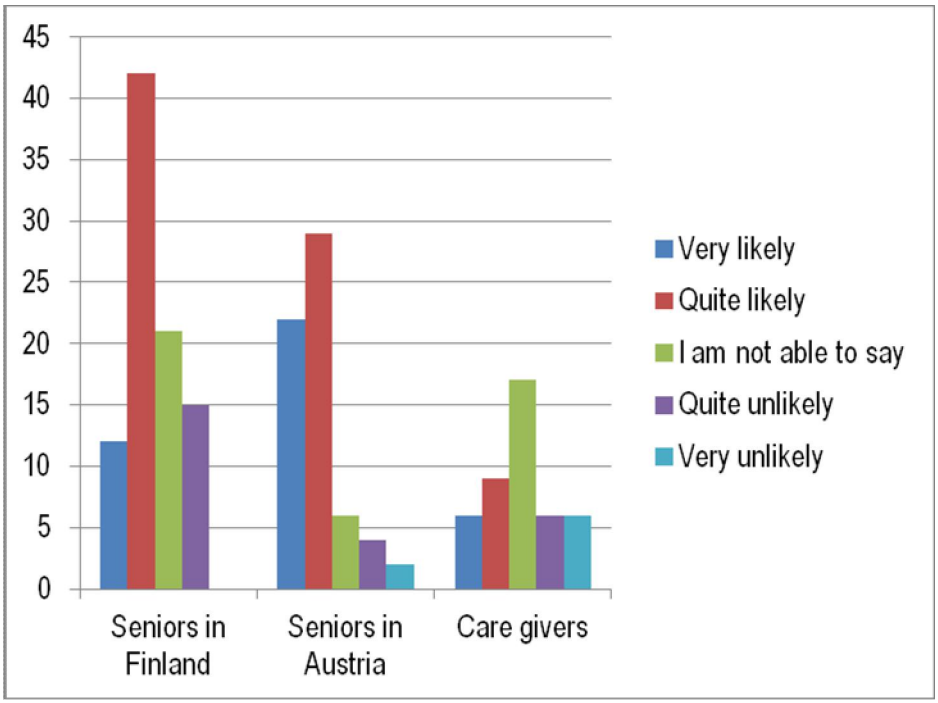


FIGURE 16. Likeliness to communicate with previous colleagues (%).

The senior participants were asked how often and what channels they would use to communicate with their previous colleagues when they are retired (Fig 17-18). They stated that they will communicate with emails and the Austrian seniors to some extent also with Skype and social media.

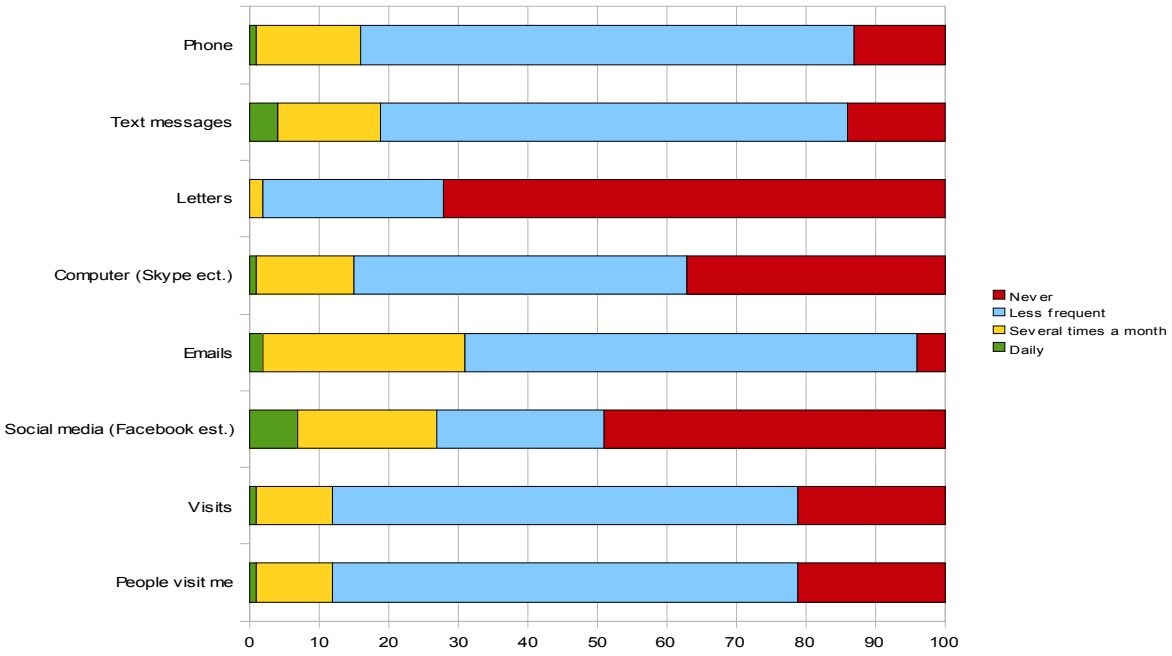


FIGURE 17. Finnish seniors' communication channels with previous colleagues (%).

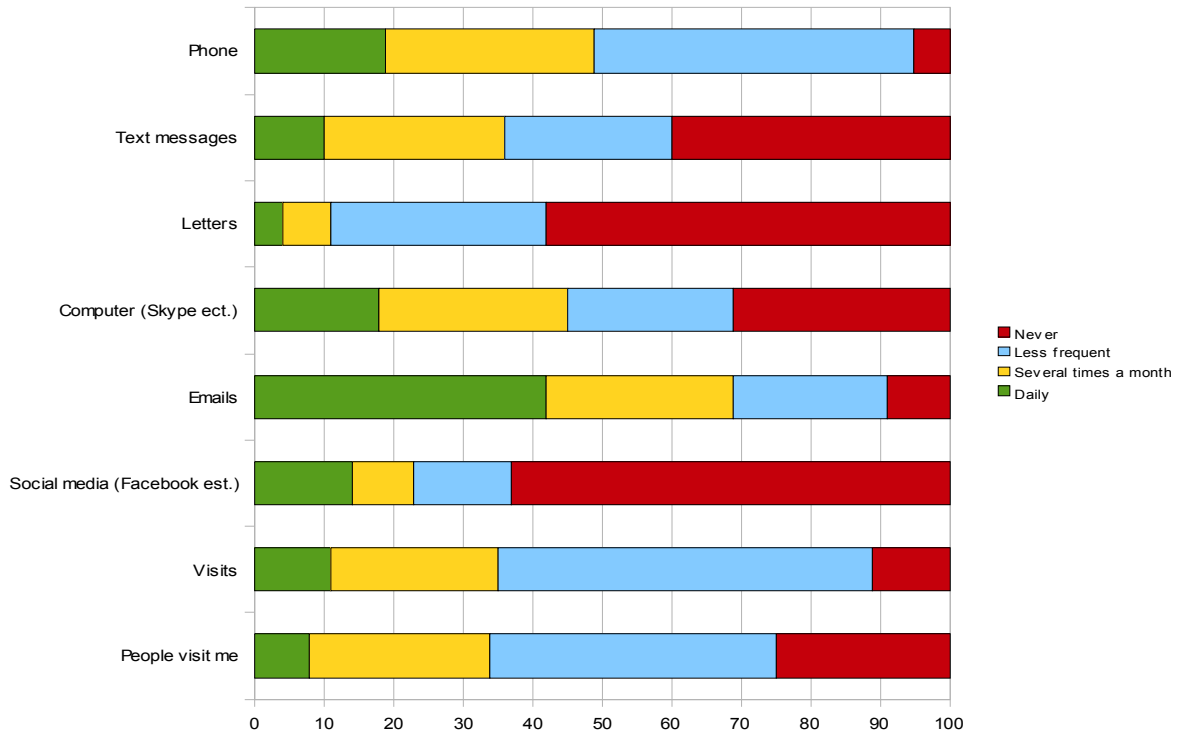


FIGURE 18. Austrian seniors' communication channels with previous colleagues (%).

Only a third of Finnish seniors wanted to be a mentor for younger colleagues, when the corresponding number in Austria was 77%. Also, the willingness to take part to the development process of SENIORENGAGE was lower among Finnish seniors (23%) compared to Austrian seniors (81%).

3.2.1.2 Results of young professionals

The gender distribution of young professionals at JAMK and in Cure´s database was quite similar. The young professionals represented several disciplines and fields of studies from their institutions. Some of the responders were full time workers, 28% at JAMK and 49% in CURE's database. Most popularly the young professionals mentioned different kind of sports activities as their hobbies. Only nine responders of young Austrians (n=36) listed the Internet and computer games as their hobbies and respectively one of JAMK students (n=29). The background information of young professionals is in table 5.

TABLE 5. Background information of young professionals.

	Young professionals Finland n=41		**Young professionals Austria n=41**	
	n	(%)	n	(%)
Male	24	(59)	21	(51)
Female	17	(41)	20	(49)
Formal education				
None or elementary school	0	(0.0)	0	(0.0)
Secondary school	1	(2.4)	2	(4.9)
Upper secondary school	28	(68.3)	18	(43.9)
University level	11	(26.8)	18	(43.9)
Other	1	(2.4)	3	(7.3)
Employment				
Full-time worker	11	(27.5)	20	(48.8)
Part-time worker	9	(22.5)	8	(19.5)
Not working	8	(20.0)	7	(17.1)
Other	20	(30.0)	3	(14.6)

The young professionals were asked which channels and how often they used them to communicate with their relatives and friends. In Figures 19 and 20 are shown the participants' percentages of frequencies of communication channels usages. Most frequently used communication channels among Finnish young were social media, phone and text messages. 67% of them used social media at least once a day or several times a week. The corresponding number in Austrian young was 39%. Austrian participants preferred a phone, visits, emails and text messages respectively. 88% of them visited at least once a day or several times a week their relatives or friends. The corresponding percentage among Finnish was 18%. Letters were the most infrequent communication channel among both groups.

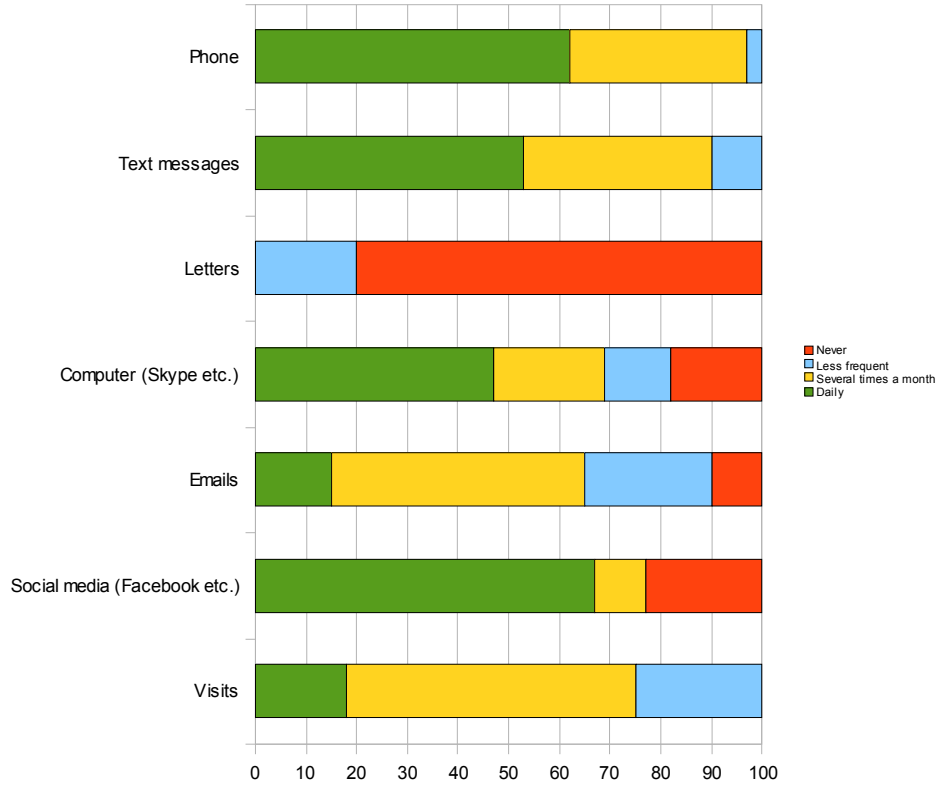


FIGURE 19. Finnish young professionals' communication channels with relatives and friends (%).

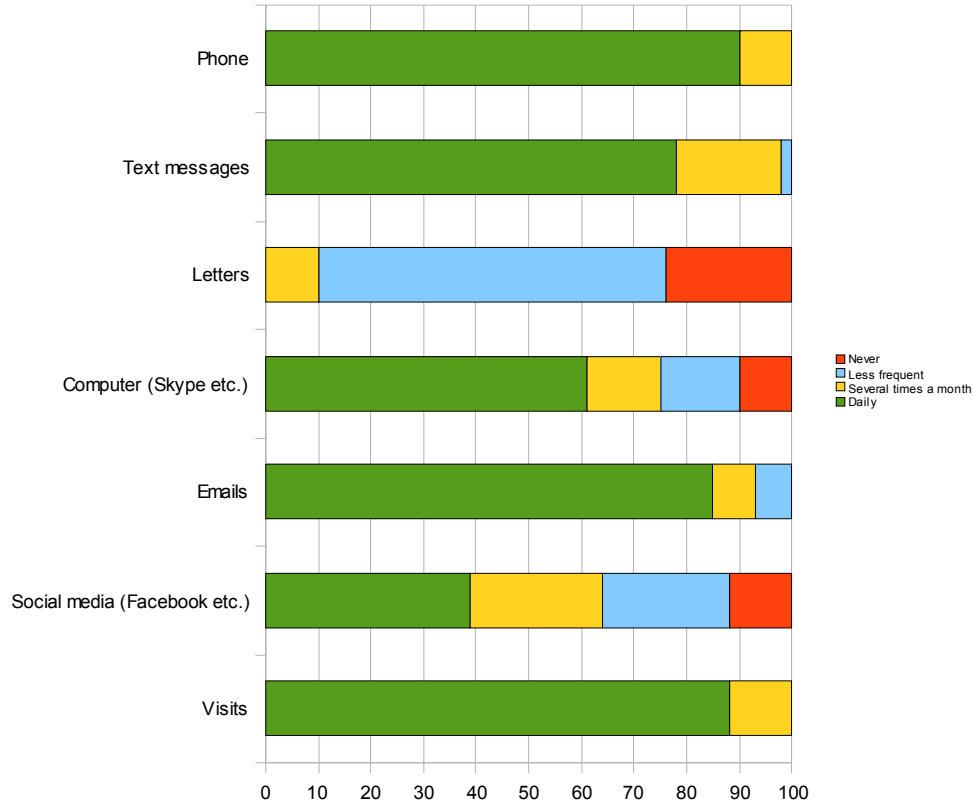


FIGURE 20. Austrian young professionals' communication channels with relatives and friends (%).

For to communicate with colleagues Finnish participants used most frequently a phone and emails, and Austrian participants used visits, a phone and emails. 29% of Finnish and 54% of Austrian young professionals never used social media, for example Facebook or VoIP to communicate with their colleagues.

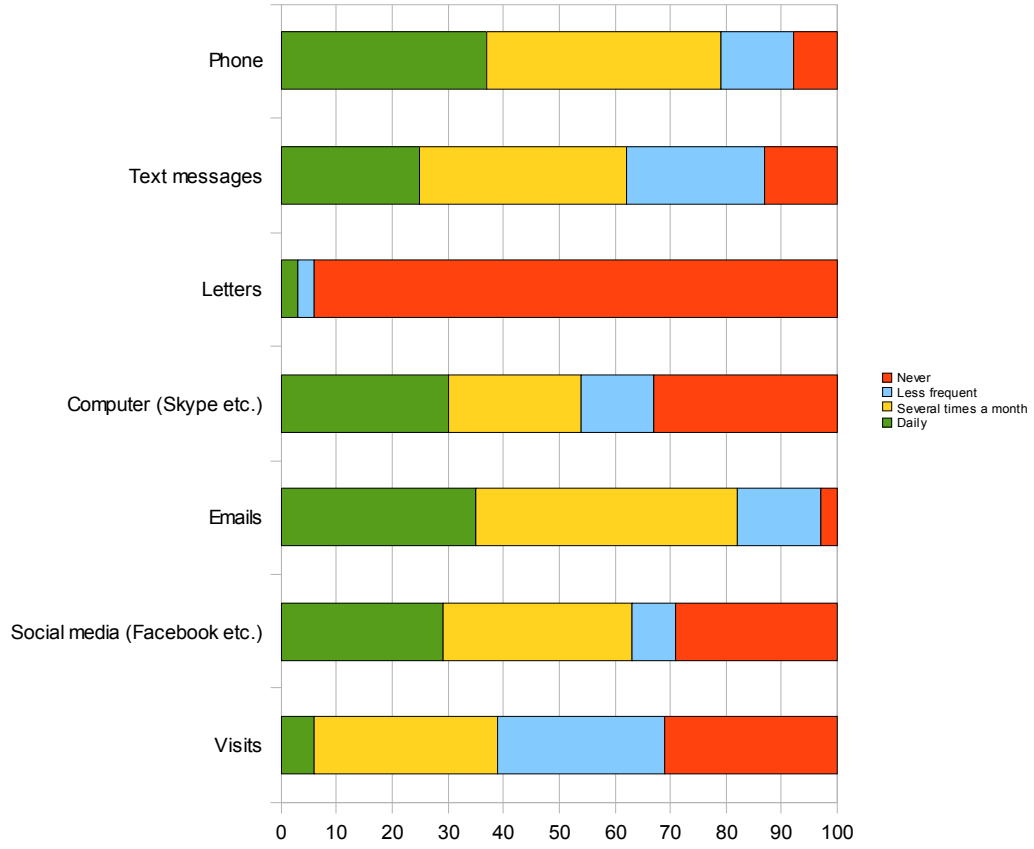


FIGURE 21. Finnish young professionals' communication channels with colleagues (%).

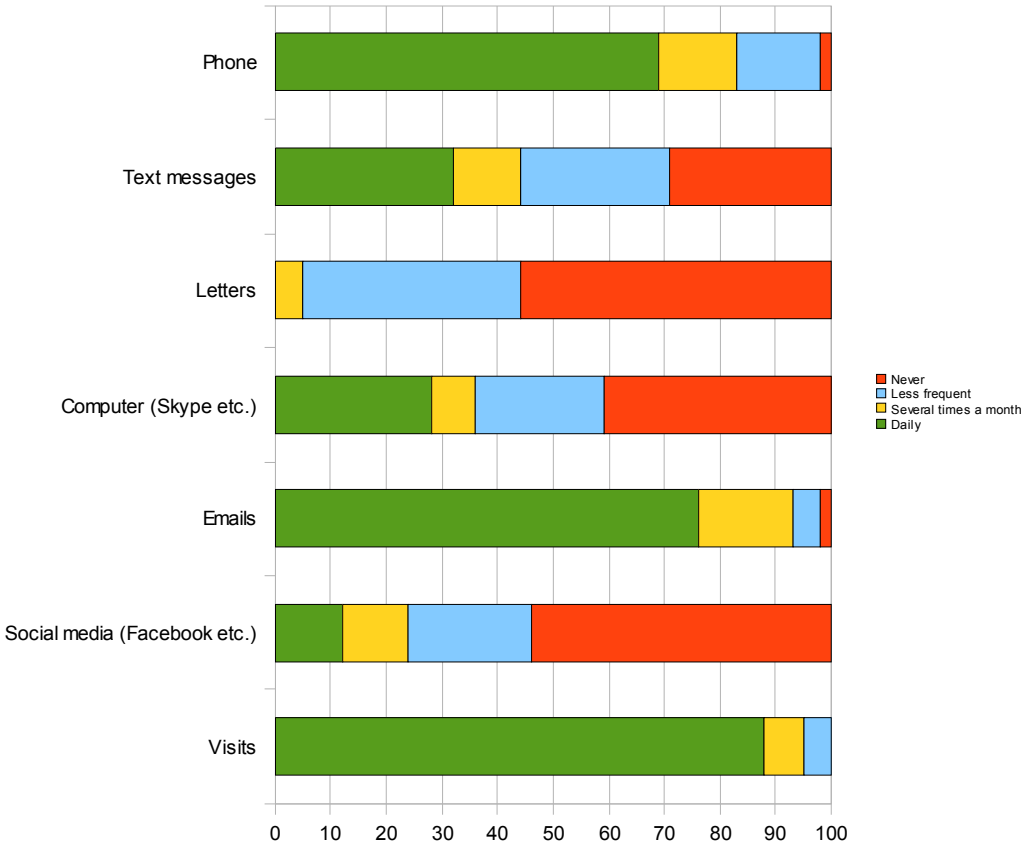


FIGURE 22. Austrian young professionals' communication channels with colleagues (%).

The overall attitudes towards elderly, retired professionals were positive among young professionals. The experience, knowledge and skills of senior retired professionals were still of high value (Fig.23)

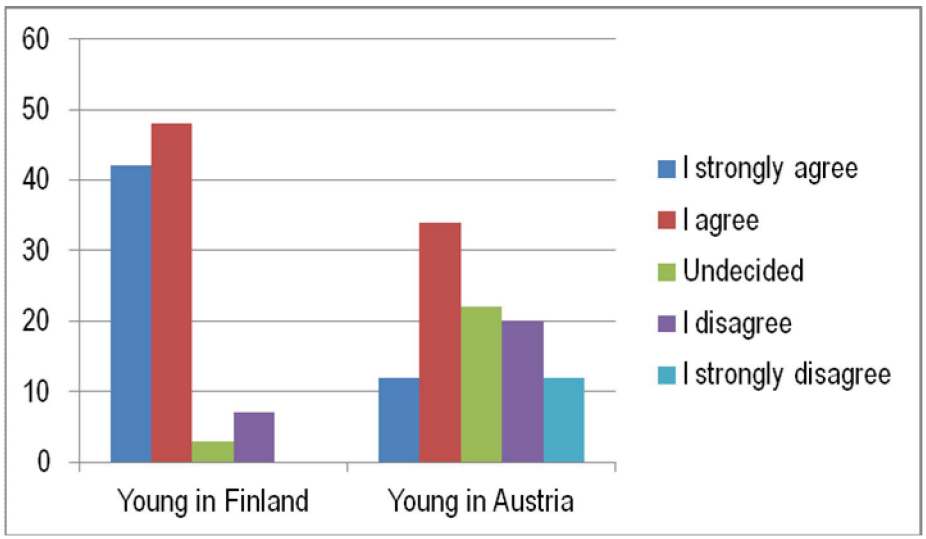


Fig.23. The knowledge and skills of retired professionals in my domain of work is still of high value. (%).

The knowledge and skills of retired professionals were seen valuable for example in planning, starting and executing new projects. In open questions concerning the importance of knowledge transfer, some responders told “Seniors´ work experience can be very helpful to put theory into action and the knowledge of senior professional should not be lost”

Most of the young professionals (>70%) were willing to ask help from retired professionals (Fig. 24.).

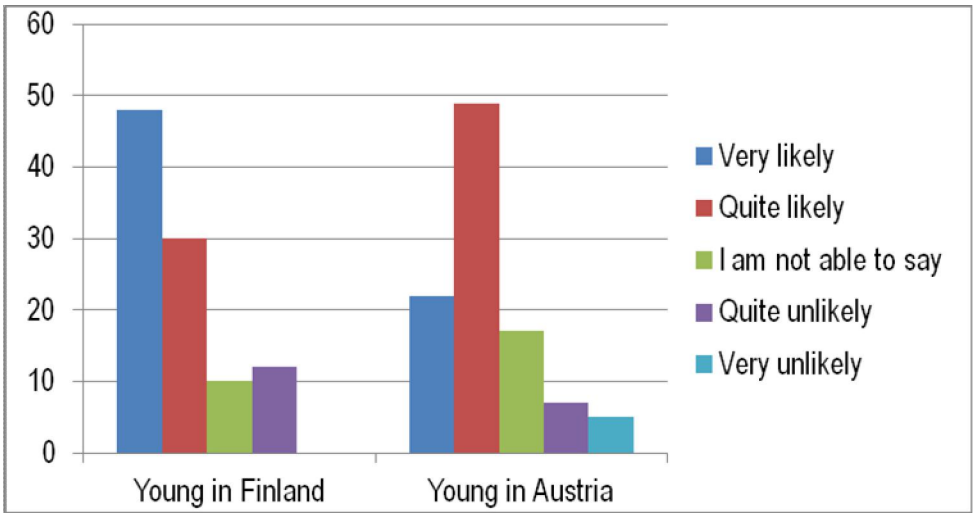


FIGURE 24. Likeliness to ask help from retired professionals (%).

Communication and technology use

Finnish (Fig.25) and Austrian (Fig.26) young professionals were asked how often they use a computer and which kind of applications they use. Both groups used a computer at least once a day or several times a week. They used all the applications which have been asked about at least now and then. The most frequently used application among Finnish and Austrian young professionals was text processing such as Microsoft Word or equivalent. 44% of Finnish and 32% of Austrian young professionals did not use ever programming for desktop, server, Web or mobile devices.

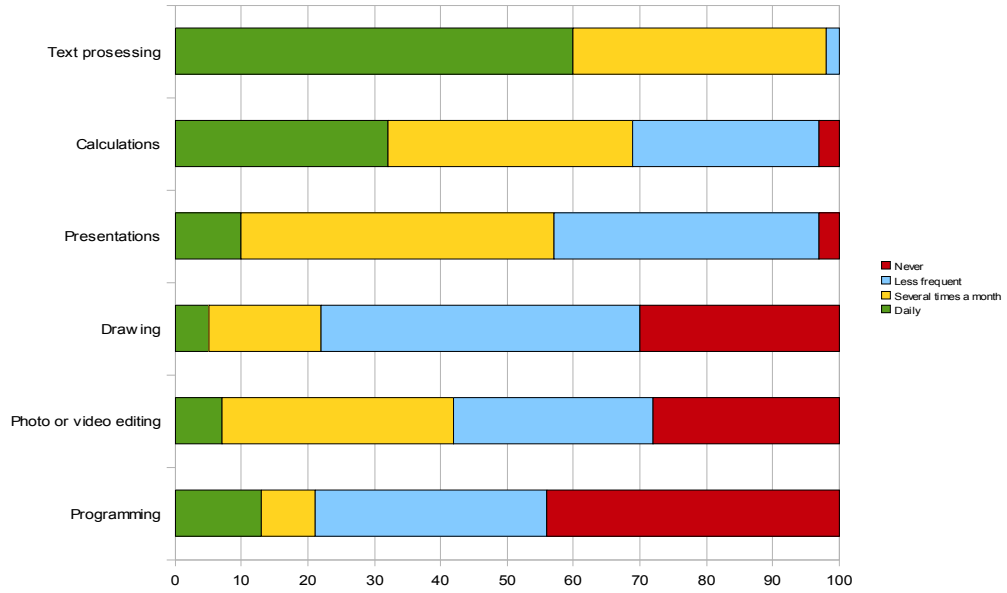


FIGURE 25. Finnish young professionals' reasons for computer use (%).

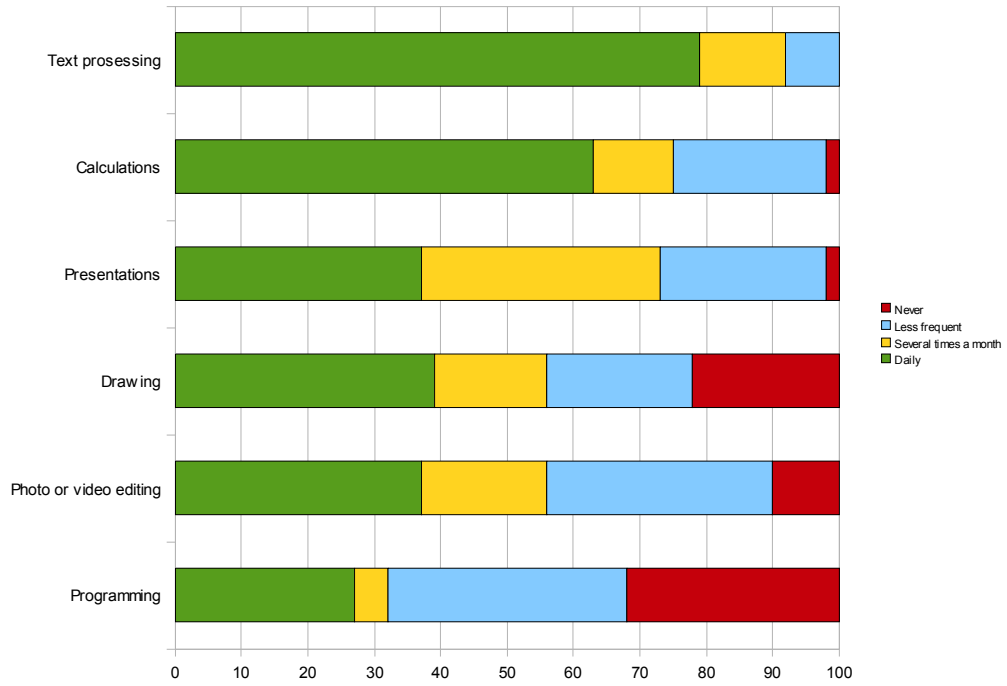


FIGURE 26. Austrian young professionals' reasons for computer use (%).

They also were asked use of the Internet. Almost all participants used the Internet at least once a day. All Austrian (Fig.28) and 88% of Finnish (Fig.27) participants used the Internet regularly for searching information. Over 90% of Finnish and 88% of Austrian young professionals used the Internet for communication at least once a day or several times a week. Using the Internet for entertainment was quite frequent as well. The percentages of daily use were 65% in Finnish and 81% in Austrian young.

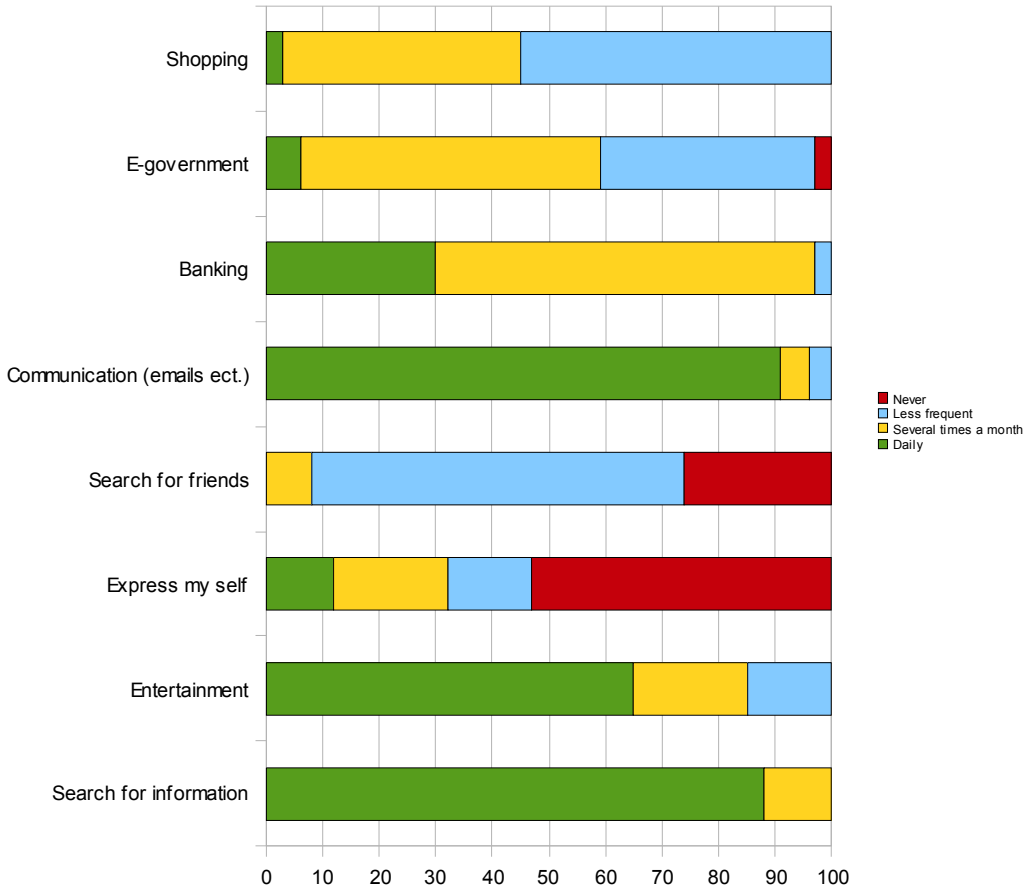


FIGURE 27. Finnish young professionals' Internet use (%).

The young professionals were asked how often they use different social networks in private and business contexts. The most popular social network service was Facebook. Over three-quarters of Austrian and 68% of Finnish participants used Facebook in a private context at least once a day or several times a week, but then 23% of Finnish and 12% of Austrian young did not use it at all. Only a few of Finnish participants used other social media, like Twitter, LinkedIn or Xing, whereas about 50% of Austrian young used both MeinVZ and Xing at least sometimes. The use of social media in business context was even less frequent than in private context.

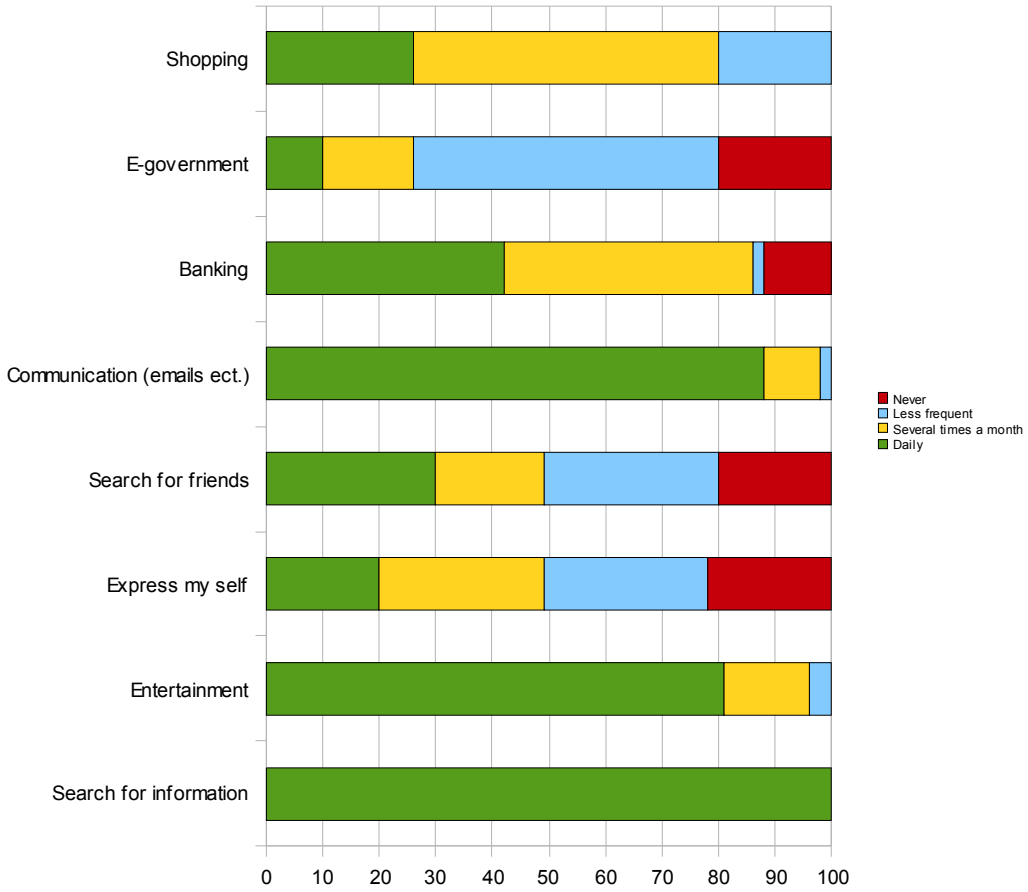


FIGURE 28. Austrian young professionals' Internet use (%).

The young professionals were asked how they usually search for vital needed information related to their work or profession. Both Finnish and Austrian groups used search engines, like Google, Bing, Yahoo or equivalent most frequently (Fig. 29-30). 64% of Finnish and 83% of Austrian often asked information from their current colleagues. The corresponding numbers for asking information from former colleagues were 18% in Finnish and 15% in Austrian young.

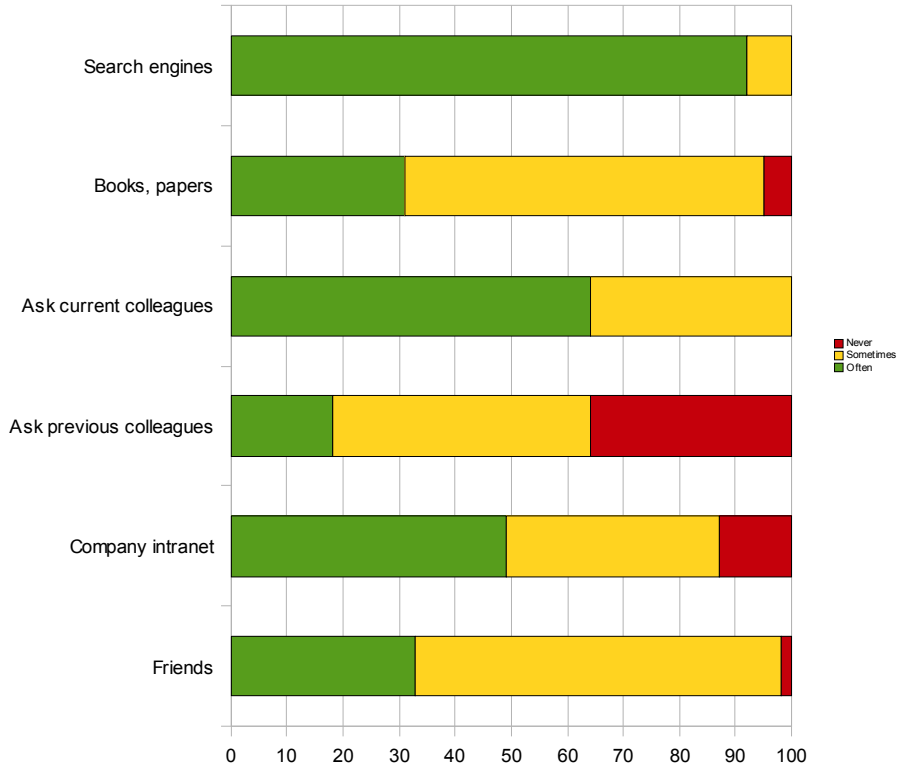


FIGURE 29. The sources of vital needed information retrieval used by Finnish young professionals (%).

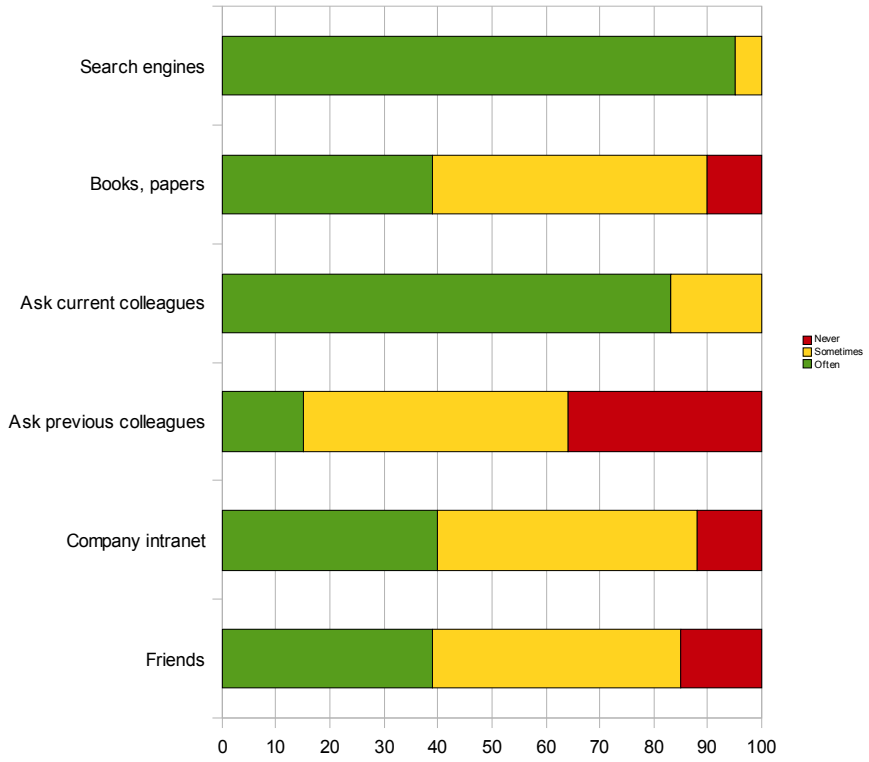


FIGURE 30. The sources of vital needed information retrieval used by Austrian young professionals (%).

The young professionals were also asked what the main sources providing the general information relevant for their work or profession were. Both Finnish and Austrian groups used again most often search engines (Fig 31-32). 50% of Finnish and 78% of Austrian asked information from their friends or colleagues.

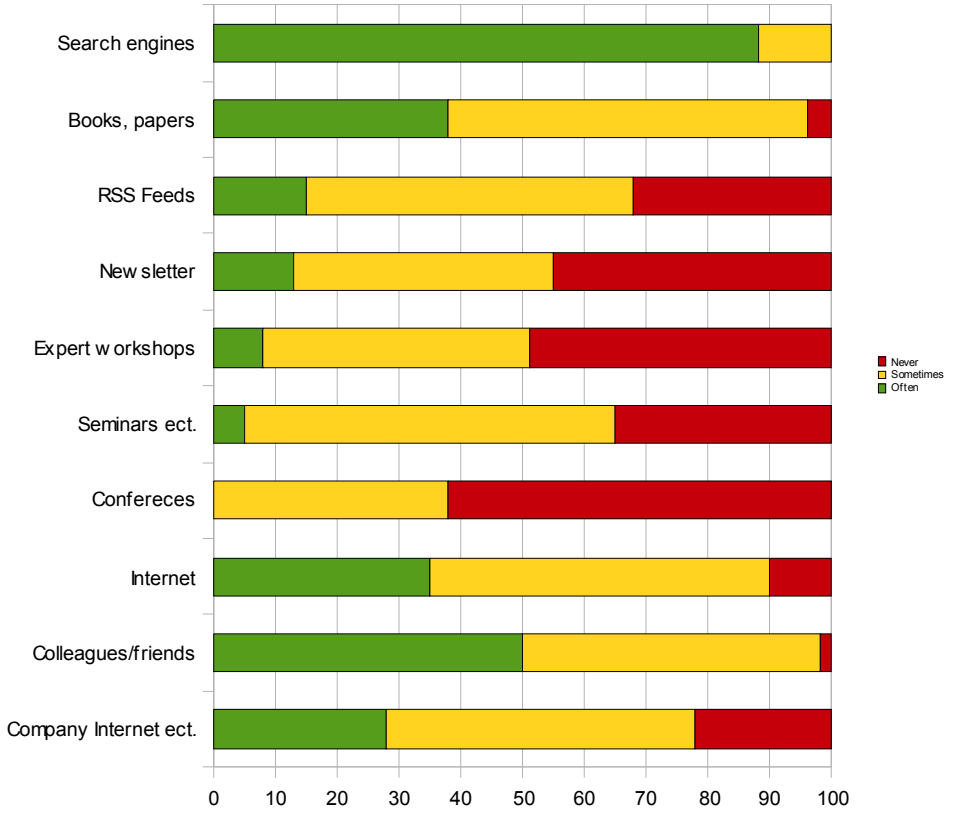


FIGURE 31. The main sources of information retrieval used by Finnish young professionals (%).

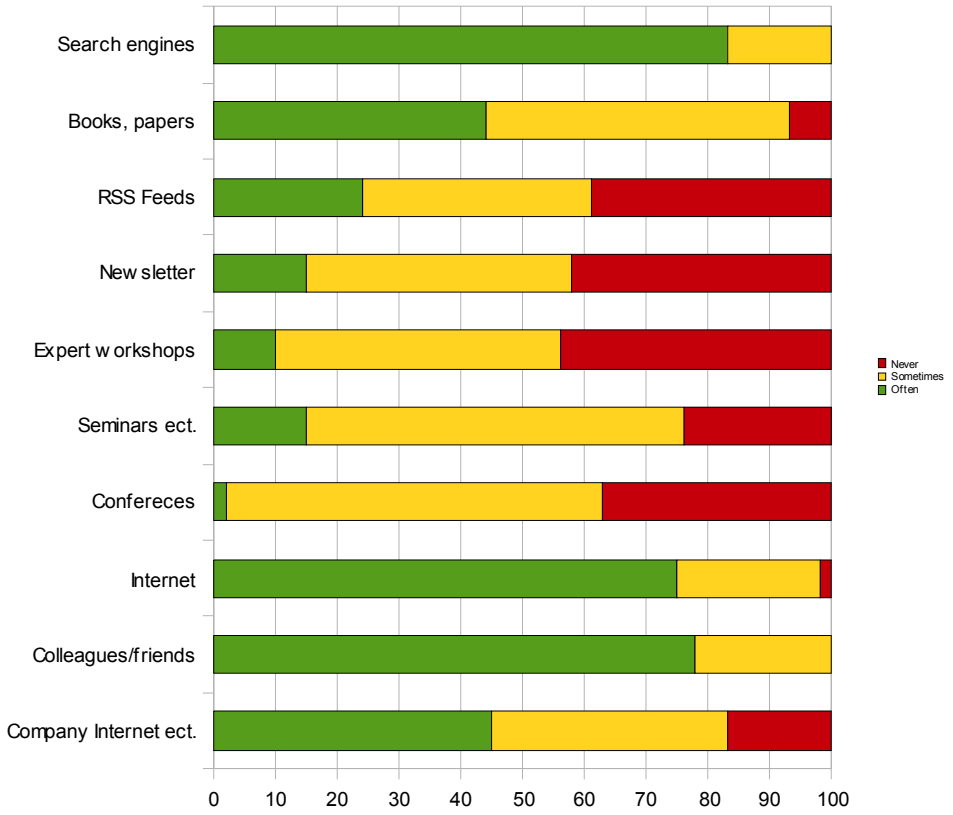


FIGURE 32. The main sources of information retrieval used by Austrian young professionals (%).

In open questions concerning information and problem solving the young participants firstly asked for help from colleagues in person and secondly they searched for advice on the Internet.

3.2.2 Results of the focus groups

The focus groups provided us with valuable insights concerning functionalities for and content structuring of the SENIORENGAGE platform. The topics of the thematic analysis of focus group discussions were:
-Communication
-Pros and cons of communication over the Internet
-Features and functionalities for the SENIORENGAGE platform

Executive Summary
Results of the focus groups differed widely between young and the retired professionals, however, mainly in the direction of thinking about the platform. While the young professionals reflected more on functional features the seniors came up with ideas for content structuring. Nevertheless, both target groups agreed on the basic features, but named additional features that are not mutually exclusive. Important features for SENIORENGAGE in-

clude: well-arranged structure, detailed tutorials, context-based help, establish a social network, integration in existing social network services (e.g. xing.com), informative profiles, advanced search various communication opportunities.

Detailed results of Finnish focus groups

The participants communicated mainly with relatives and friends and these communications covered mostly things of daily life. *"I talk in phone with my son, who is living in Helsinki"* The communication was executed mostly with phone or emails, but they also pointed out the importance of face to face contact.

Regarding the advantages and disadvantages of communication over the Internet, the participants thought that the Internet is quite flexible device for communications: *"There is no need to be present at the same time".* On the other hand, they expressed that this kind of communication device will suppose that you are always reachable. "*It may be stressful to be all the time in touch and approachable*".

The participants prioritized features and functionalities for SENIORENGAGE platform. The most popular features were different kinds of groups; for example, groups for hobbies or professions. They also wanted to have possibilities for official tasks like banking. They expressed wishes of searching for team of tutors, who will guide them e.g. when they have problems with their computers. Also a partner for discussions was suggested. This was seen as very important in preventing loneliness. Least of all the participants wished the possibility for watching news.

The connection has to be fast and it has to work properly. In addition it has to be free, user friendly and easy to use. Also after updating the platform's visual layout and all functions should be unchanged. The tutorials should be task specific*: "For example if I want to buy a ticket, the information about how to use a whole program is unnecessary"*. They thought that SENIORENGAGE would be a "place", where they are able to find all the information and activities at a glance. They also hoped that SENIORENGAGE would not become too big and it has to be personalized with profiles and open only for registered members. *"There has to be a good, strict moderator, who will delete all needless materials and irrelevant messages"*

They emphasized that SENIORENGAGE has to be directed only for senior citizens.
All the participants promised to use the platform and they would also recommend it to others.

Detailed results of Austrian focus groups

Communication Behaviour

Private communication (with family, friends, music and sports companions) outbalances the communication in business context for both target groups. The majority of the young professionals group have been students and they consider the communication with fellow students as private. The time of engagement in part time jobs and the accordant communication in business context does not compensate this amount of communication. Seven of eight participants of the seniors were retired and thus the amount of communication in business context reduced already drastically although the half of the participants has been engaged to ASEP and thus still communicates about business topics. As a side note it is to

say, that the other participants were very interested in ASEP and asked for information material. Obviously the idea of engaging after the retirement was appreciated by all senior participants, which indicates that there is potential for a platform like SENIORENGAGE. However, the retired professionals stated that work experience often is not regarded as an important value.

As expected the young professionals do all use the internet for communication, however the retired professionals emphasized the importance of using the Internet for communication as well:

"Those who do not communicate via the Internet at all, communicate just poorly."
"Today you must be able to use computers and the internet."

But apparently the highly educated participants of the senior focus group were very affine with respect to the Internet. Two of them considered themselves as missionaries for the Internet within their circle of friends. One participant said that with the help of the Internet the reconnection to former friends got a lot easier for him. However, another participant warned that through the usage of Internet some people might stay at home all the time and will sooner or later experience a lack of face-to-face contact to other people. A disadvantage of communication via the Internet all agreed on is the lack of mimics and gestures, which are very important for communication. This problem might be minimized by offering video chats.

Similar platforms
For the question on similar platforms of SENIORENGAGE the results differed widely between the two target groups. As can be seen in the following table (Tab. 6) the seniors concentrated more on themselves and leisure while the young professionals came up with business network services and alumni associations.

TABLE 6. Named platforms that are similar to the SENIORENGAGE platform elaborated in the Austrian focus groups

Retired Professionals	Young Professionals
www.senior.com	www.xing.com
www.50plus.at	alumni associations (mainly in the USA)
www.seniorhelp.at	www.linkedin.com
www.feierabend.de	

Prioritised features
Interestingly, the kind of features the participants of the two focus groups brainstormed for the SENIORENGAGE platform differed widely. While the young professionals concentrated on functional features mainly, the retired professionals rather had ideas for content structuring. In the following Table 7 we present the features and aspects for the SENIORENGAGE platform in descending order, as participants prioritised them.

TABLE 7. Prioritised feature-list, proposed of retired and young professionals, for the SENIORENGAGE platform

Retired Professionals	Young Professionals
Prioritised features	
The most important feature for the seniors was a special introduction to the platform. Video tutorials and personal courses were appreciated. This should go along with a context-based and situational-optimised help service. Telephone support should be included.	For the young professionals the aspect with highest priority was the opportunity to establish mentor-relationships to seniors and some kind of buddying.
Furthermore, seniors emphasized that they don't want to contact an anonymous person. They want to know with whom they communicate and therefore claim to have an informative profile protected by a safe password. However, access to a profile should just be provided to other members of the platform.	Very important for this group is the integration or the interplay with existing social network services respectively, but in the business sector mainly (e.g. xing.com). Some participants wished SENIORENGAGE to be an add-on service for established social network services. Besides they don't want to remember another login and password for a new service.
An advanced search function is very important for seniors to find the relevant information. Filter criteria might be: domain of work, level of knowledge, availability, and communication channels. The presentation of search results is very important, just a large list that needs to be scanned to find relevant results is likely to be refused.	Similar to the seniors, the young professionals need to have informative profiles in order to see what kind of knowledge and job-related background a person has. They liked the idea to watch the CV of other members. But this detailed information should be restricted to buddies and mentors. For the beginning some kind of a competence tag might be used. There was a clear rejection of anonymous contacts. However, it should be possible to use the platform as a guest. So direct communication should be forbidden but postings in general groups should be allowed.
A well-arranged and logical structure of the platform should be provided. The content organisation should be along domains of work but not too general. Hierarchical groups would be a good idea. For seniors it was also important not to concentrate on business contacts, only. There were various comments about the inclusion of leisure aspects e.g. collective hiking and sports, making or teaching music, attending cultural events and information about it, learning languages together with others.	A well-arranged and logical structure of the platform along domains of work is expected by young professionals, too. They consider some kind of forum for every group as basic communication functionality. It should be accessible to everyone before direct communication opportunities are needed to use. Furthermore, they liked the idea to offer a simple request-and-response section like vark.com.
Social aspects seem to be very important for seniors as well. There should be a possibility for the elderly to exchange about problems like loneliness, anxiety, sorrows as well as warnings about villains. Furthermore, some kind of neighbourly help would be appreciated e.g. "*I offer to walk your dog*." or "*I can go shopping for you."*	According to the young professionals the members of the platform should have some kind of a calendar where everyone can indicate time slots of his/her availability (e.g. consultation-hours).
There should be good communication opportunities e.g. video and text chats as well as private messages with support of conferencing.	Like the seniors the young professionals want to have various communication opportunities like chats and private messaging (incl. email notifications), as well.

For some seniors it is also important to share knowledge e.g. external links or information about special clubs or associations. The sharing of job experience reports could be helpful for the young professionals.	An advanced search function is very important for young professionals as well.
	Another idea the young professionals brought up was the usage of a special "friendly" point system where helpful answers and consultations will be rewarded (e.g. answers.com).
Other mentioned aspects	
Seniors appreciate to get more information on various topics e.g. a collected overview about clubs in a special area, advices on good books, traveller reports, cooking receipts, etc.	Young professionals appreciate to have a best practice database where everyone can publish solutions for a common problem.
One participant liked the idea of having a photo repository included.	Also mentioned was the introduction of a news area at the start page where everyone gets actual information about special areas of interests (typically the domain of work)
Another participant liked the idea to establish an online flea market at the platform.	A rating system of the members respectively their level of experience was discussed as well, but participants could not agree if the advantages (e.g. easier to estimate quality of feedback) or the disadvantages (e.g. scare users and misuse) prevail.

Furthermore the retired professionals outlined the importance of an easy-to-use user interface by naming describing attributes for the platform like simple, understandable, accessible, motivating and clear-arranged. Special attention should be paid to the design of the forums as one participant mentioned to have problems using forums and thus is scared of using them.

Potential Application

The retired professionals agreed on using the platform later on. But at the same time they were frightened of obtrusive advertisements and excessive demands for usage. As seniors are in general more skeptical towards new technologies it would be really good to present the platform at special senior events and fairs, to cooperate with senior associations and offer introduction courses. The challenge will be to convince the target group to give it a try but in general they like the idea and had a lot of good ideas.

For the young professionals the potential use of the platform clearly depends on the available features and the integration of the service. They mentioned concerns due to the need to register for another social network service and would probably not attend SENIORENGAGE with an active intention, but if they stumble upon it via another social network service or find a helpful search result linking to the platform they would get aware. Therefore, it will be important for the participation of young professionals to actually link the platform to other networks.

Depending on the domain of work and in terms of experience of life SENIORENGAGE was considered to be really helpful. Most of the young professionals stated that the contacts to the seniors are the most valuable aspect. By speaking for their parents and grandparents they were more optimistic that they would use the system. However, the seniors of tomor-

row differ from those of today in terms of technical experience. Therefore it is most likely, that the retired professionals of tomorrow would appreciate the use of a service like SENIOR ENGAGE.

An advantage could be that a lot of employees don't have the heart to complain about working conditions and problems because they are afraid of losing the job and after retirement they are probably more open and honest. The main disadvantage is that the majority of the features already exist at other platforms. Focusing on the exchange of experience seems to be the right direction.

3.2.3 Results of scenarios

In total 8 user scenarios (4 senior professionals, 4 young professionals) were collected from partners. These scenarios help us to identify the main platform features, due to in most of them some functionalities or requirements where describes: as the use of email and chat to contact each other. Two examples of scenarios are presented in appendix 5. These scenarios were also evaluated in focus groups and according to the participants they were truthful and comparable to real life situations. The main different initial features that have been described in the different scenarios were:

- **Creation of groups**: The system will facilitate the creation of groups of users with similar interests, working groups, research groups, etc. With these objectives the user could:
    - Subscribe to a group of interest
    - Create a new group: fill out a group description, keywords tag
    - Open a new forum inside a group
    - Create a new debate field inside a group forum
    - Comment a post.
- **Document and media repository:** The system will offer a document repository where all the file and digital information uploaded could be search. In this line the user could:
    - Search an specific document: search by words (keywords, thematic)
    - Upload new content: brief description, associated to an specific group, tagged it, keywords
    - Comment a document uploaded
- **Personal profile:** Each user platform will fill out a profile during the registration. It will contain all the user information that will be used in one way to match groups of interest (where the users could register themselves) or to match another user that could offer/require some information. In this profile the user will specify his/her :
    - Personal information: name, age (senior or young professional), email…etc
    - Studies
    - Professional Background
    - Select the areas of Interest, list box selection
    - What he/she could offer: description, keywords & tags, list box selection
    - What is he/she looking for? Keywords or tags, list box selection
- **Metatags & keywords:** In order to offer a searchable content and a profile matching, metatags and keywords are required. These information will be included in the doc-

ument repository (plain text, media content), in the user profile, and in the groups description

- **Platform communication:** This is another functionality of the platform. The users could contact with other users via: Chat, email, conference call, Dashboard and forums. In this way, they could:
    - Start a chat conversation
    - Start a conference call
    - Send/reply an e-mail
    - Post or reply a dash board message
    - Post or reply a forum message.

By evaluating the scenarios during the focus groups we received feedback about how realistic they are for both, the retired and the young professionals. We decided to choose the three most promising scenarios for every target group with regard to the future setup of SENIORENGAGE for the evaluation. The first scenario was about a widowed librarian that could help a young professional in problems with humidity. In the second scenario a young veterinary surgeon had problems with an ill llama and got help by a retired llama specialist. In the third scenario a young and a retired lawyer debated about contract law.

The retired professionals liked the first two scenarios a lot; however, special questions about contract law could probably not be solved responsibly on a voluntary base. It has to be emphasized that this kind of consultancy is really without commitment.

The young professionals shared the concerns of the seniors about the lawyer scenario. In general they found it unrealistic that the associated young professionals use SENIORENGAGE for finding solutions for their problems. The participants outlined the importance of the find ability of SENIORENGAGE via search engines. Furthermore, they raised the question of the language problem. How should a retired Austrian librarian communicate with a young Italian one? Language barriers might appear and make communication impossible. Nevertheless, they really liked the idea of mentoring. According to the young professionals the veterinary surgeon scenario is the most realistic one as this one really depends on the experience of the retired professional and is therefore most appreciable.

Summarizing the difficulties of the proposed scenarios, there seem to be three main aspects that have to be considered by elaborating the model of the SENIORENGAGE platform:

1. The legal framework needs to be considered. It should be clear to all members of the platform that the help that is provided is more of a recommendation and non-binding.

2. Further it seems to be crucial to make the platform present and easy to find. SENIORENGAGE should be found easily by using common search engines or other networking services.

3. Language barriers might occur. Therefore, there is need for a discussion on how to solve this problem (e.g. establish language-related “rooms”).

Two examples of scenarios transferred with Unified Modeling Language (UML) are presented in appendix 6. In future much detailed explanation will be found on SENIORENGAGE project´s deliverable D3.1, to be created as a result of the work and tasks done in WP3. Where the input requirements and system specifications will be defined, compiling the results obtained in this deliverable (D1.1). An analysis of the existing technologies will take place, deciding which ones are the most appropriate to our project to obtain a solid product

4. SUMMARY OF RESULTS

Finnish senior professionals were mainly still full-time workers (78%) nearing their retirement age, whereas the Austrian seniors (87%) and caregivers (73%) were retired. The composition of young professionals (e.g. number of persons) in Finland and in Austria was alike.

The senior target groups did not have relevant technical or health limitations which would hinder their behaviour concerning SENIORENGAGE platform. They had good health status and functioning. The senior professionals were socially very active. Their most common activities at leisure time were using a computer and the Internet, reading books and newspapers, watching TV and listening to music and meeting friends.

All the target groups had well equipped computers and they used their computers and Internet almost daily. In addition, most of the senior participants expressed good learning skills and enthusiasm to learn more.

Computers were used mainly for the Internet and text processing and the Internet for searching information and communication. For information search both seniors and young professionals used search engines and asking current colleagues, the company Intranet among working population was also used.

With friends, relatives and colleagues the participants communicated with phones, emails and text messages. The students of JAMK took advantage of social media and Skype. The Austrian young professionals also visited their friends and colleagues. Use of social media was more common among young professionals compared to senior professionals and the Facebook was the most popular, especially in a private context.

The overall attitudes of young professionals towards retired professionals were positive and the young would likely ask help for their problems from senior professionals.

The young professionals emphasized the importance of transferring the tacit knowledge of seniors to new generation. These positive findings will assist in building up a productive ground for mentoring.

In tables 8 and 9 are shown seniors' and young professionals' wishes for features and functionalities for SENIORENGAGE platform. Senior and young professionals were asked about the desired features of SENIORENGAGE platform. First of all, usability, clearness and ease of use were emphasized. SENIORENGAGE platform has to be free of charge and fast. For the

main content they expressed wishes for information seeking, leisure time activities and professional aspects.

TABLE 8. Wishes for technical functions on SENIORENGAGE platform

	Seniors	Young
Technical functions		
Usability/easy to use	x	x
Clarity of portal, pages and construction	x	x
Accessibility	x	
Clear interface	x	
Easy login	x	
Visual design		x
Fast connections	x	x
Interactivity	x	
Audio counseling	x	
Self-counseling	x	
Online		x
Advanced search functions		x
Private messaging		x
Emails		x
Safety, high security standards	x	
Privacy	x	
Reliability	x	x
Strict moderator/spam control	x	x
Clear instructions	x	
Options of web browsers	x	
Language options		x
Instructions take into account user's level of skills	x	
Common Manageability Programming Interface		x
Mobile device support		x
Audiovisual		x
Speech to text	x	
Updates	x	
Free of charge, cheap	x	x

TABLE 9. Wishes for content on SENIORENGAGE platform

	Seniors	Young
Content		
Information searching	x	
RSS- services	x	

Database	x	
Study	x	
Hobbies and leisure time activities	x	
Travel, excursions, holiday offers	x	
Entertainment	x	
Music notation program	x	
Banking	x	
EGoverment	x	
Communication with friends	x	
Communication with colleagues	x	
Professional guilds		x
Exchange of knowledge	x	
Discussion groups	x	
Open discussion forum	x	x
Philosophical questions, broaden one´s mind	x	
Blogs		x
Chat, live-chat	x	x
Workshops		x
Support for daily activities	x	
Tips, advice, warnings, news	x	x
Best practices		x
Versatile content	x	
Interactive contents	x	
Translation tool	x	
Helpdesk		x
No advertisements		x
No needless information		x

According to the market research there seems to be a need for European social network, which will connect the interests of young and senior professionals. There will be also a lot of potential European users among the increasing elderly population.

5. IMPLICATIONS FOR THE SENIORENGAGE PLATFORM

The derived implications for the SENIORENGAGE platform are summarised in this section. Results of surveys from Finnish and Austrian senior and young professionals and the findings of market research as well as focus groups discussions and scenario evaluations confirmed each other.

SENIORENGAGE should:

- Take into account the usability in all technical solutions and in content design.

- It should be found easily by using common search engines or other networking services.
- It should be presented at special senior events and fairs, to cooperate with senior associations and offer introduction courses.
- It should be presented to nearly retired professionals for transferring the tacit knowledge and to increase the intergenerational communication and co-operation.
- To increase the participation of younger users, SENIORENGAGE should be linked to other networks.
- It should include versatile possibilities for communication (video and text chats, private messages) in professional issues and leisure time activities.
- It should have advanced search functions.
- It should have good introduction with video tutorials and personal courses.
- It should be for registered members only.

6. CONCLUSION

Work package 1 has conducted on in-depth investigation of the roles and requirements of users among senior and young professionals. A determination of the further actions in SENIORENGAGE's work packages will be made according to this extensive data. In future it is also important to increase the competitiveness of the product. Within this work package 1 most of the partners have taken an active role and part of execution.

APPENDIX 1 Technology watch form

Product Name:	Eons	Target Market:	U.S.-based Seniors
Product site:	http://eons.com		
Price:	Free	**Advertising Model**	X	**Subscription Model**	
List of Features			

- Hundreds of available groups (athletes, singles, cooking, etc.). Ability for the user to create new groups.
- Messaging (private and non-private)
- Photo and video sharing
- Blogging
- Trivia and other games
- Customizable interface ("skins")

Comments

Perhaps the most outstanding social networking solution for older adults, Eons.com offers a general social networking community where members from all walks of life can share hobbies and interests, join groups and interact with others. Since Eons is technically designed for baby boomers there are fewer 65+ members on the site. Eons is currently only available in English and as the company is based in the U.S., the site is very U.S.-centric, with few offerings for European users.

APPENDIX 2 Questionnaire of senior professionals

Seniorengage Senior Professional Questionnaire EN

The SENIORENGAGE is a project financed by European Commission, the main objective of which is to develop a community knowledge sharing network to empower seniors to continue to be active in the post-retirement years.

The target group of this survey is senior professionals over 55 years old. The purpose of this questionnaire is to explore the current use of computer and Internet, as well as to collect the needs and wishes for the future development of this social network.

BLOCK I: BACKGROUND INFORMATION

1. You are?
( ) Male
( ) Female

2. What is your marital status?
( ) Unmarried
( ) Married
( ) Divorced
( ) Widowed

3. How old are you? _____

4. What formal educational do you have?
( ) None or elementary school
( ) Secondary school
( ) Upper secondary school
( ) University level
( ) Other, please specify _____

5. What is your employment status at the moment?
( ) Full-time worker
( ) Part-time worker
( ) Retired
( ) Part-time retired
( ) Other, please specify _____

6. What is your work or occupation at the moment or what was it previously? _____

BLOCK II: HEALTH AND FUNCTIONING STATUS

7. How do you feel the state of your health to be at the moment?
( ) Very good
( ) Quite good
( ) Moderate

( ) Quite poor
( ) Very poor

8. Do you feel tired/exhausted?
( ) Never or seldom
( ) Sometimes
( ) Continuously or always

9. How do you feel your mood to be in general?
( ) Very good
( ) Quite good
( ) Moderate
( ) Quite poor
( ) Very poor

10. How do you feel the state of your functioning to be at the moment?
( ) Very good
( ) Quite good
( ) Moderate
( ) Quite poor
( ) Very poor

BLOCK III: SOCIAL PARTICIPATION AND COMMUNICATION WITH OTHER PEOPLE

11. What do you do in your leisure time?

	Yes	Not interested	Would like to, but unable to due to time constraints	Would like to, but unable to due to physical constraints	Would like to, but unable to due to other constraints
Read books, newspapers	( )	( )	( )	( )	( )
Visit theatres, cinemas, cultural events	( )	( )	( )	( )	( )
Sports	( )	( )	( )	( )	( )
Housework and gardening, fishing, etc.	( )	( )	( )	( )	( )
Work for organizations, associations, in politics	( )	( )	( )	( )	( )
Watch TV, listen to music	( )	( )	( )	( )	( )
Study, take	( )	( )	( )	( )	( )

part in seminars, courses					
Travel	( )	( )	( )	( )	( )
Meet friends	( )	( )	( )	( )	( )
Handicrafts, arts	( )	( )	( )	( )	( )
Voluntary work	( )	( )	( )	( )	( )
Visit restaurants, dancing	( )	( )	( )	( )	( )
Outdoor activities, nature observation etc.	( )	( )	( )	( )	( )
Use the computer and Internet	( )	( )	( )	( )	( )
Other, please specify	( )	( )	( )	( )	( )

12. How often do you use the following channels to communicate with your friends and relatives?

	At least once a day	Several times a week	Once a week	Several times a month	Less frequent	Never
By phone	( )	( )	( )	( )	( )	( )
By text messages	( )	( )	( )	( )	( )	( )
By letters	( )	( )	( )	( )	( )	( )
By computer (Skype tms.)	( )	( )	( )	( )	( )	( )
By emails	( )	( )	( )	( )	( )	( )
By social media (Facebook, Twitter, LinkedIn, MySpace)	( )	( )	( )	( )	( )	( )
By visits	( )	( )	( )	( )	( )	( )
People visit me	( )	( )	( )	( )	( )	( )
Other, please specify	( )	( )	( )	( )	( )	( )

13. How often do you use the following channels to communicate with your colleagues?

	At least once a day	Several times a week	Once a week	Several times a month	Less frequent	Never
By phone	( )	( )	( )	( )	( )	( )
By text messages	( )	( )	( )	( )	( )	( )
By letters	( )	( )	( )	( )	( )	( )
By computer (Skype tms.)	( )	( )	( )	( )	( )	( )
By emails	( )	( )	( )	( )	( )	( )
By social media (Facebook, Twitter, LinkedIn, My Space)	( )	( )	( )	( )	( )	( )
By visits	( )	( )	( )	( )	( )	( )
People visit me	( )	( )	( )	( )	( )	( )
Other, please specify	( )	( )	( )	( )	( )	( )

BLOCK IV: USE OF COMPUTER AND INTERNET

14. Do you use the computer and/or Internet?

	No, I do not	Daily	Several days a week	Once a week	1-3 times a month	Less than once a month
Computer	( )	( )	( )	( )	( )	( )
Internet	( )	( )	( )	( )	( )	( )

15. Do you have a computer at home?
( ) Yes
( ) No

16. Is your computer equipped with?
[ ] Headset
[ ] Microphone
[ ] Webcam
[ ] Skype
[ ] Drawing device
[ ] Other, please specify _____

17. Do you have an Internet connection at home?

( ) No
( ) Yes

18. For what purposes do you use or want to use the computer?

	At least once a day	Several times a week	Once a week	Several times a month	Less frequent	Never
Text processing (Microsoft Word or equivalent)	( )	( )	( )	( )	( )	( )
Calculations (Microsoft Excel or equivalent)	( )	( )	( )	( )	( )	( )
Presentations (Microsoft PowerPoint or equivalent)	( )	( )	( )	( )	( )	( )
Drawing (Microsoft Visio, Adobe Illustrator or equivalent)	( )	( )	( )	( )	( )	( )
Photo or video editing (Adobe Photoshop, premiere or equivalent)	( )	( )	( )	( )	( )	( )
Internet	( )	( )	( )	( )	( )	( )
Other, please specify	( )	( )	( )	( )	( )	( )

19. For what purposes do you use the Internet now or would you like to use?

	At least once a day	Several times a week	Once a week	Several times a month	Less frequent	Never
Shopping (travel tickets, clothes, or other shopping)	( )	( )	( )	( )	( )	( )
E-government (paying taxes, filling out forms, voting)	( )	( )	( )	( )	( )	( )
Banking	( )	( )	( )	( )	( )	( )
Studying	( )	( )	( )	( )	( )	( )

Health care (appointments, ordering medicine)	( )	( )	( )	( )	( )	( )
Communication (emails, Skype, Messenger, Facebook)	( )	( )	( )	( )	( )	( )
Search for new friends and partner	( )	( )	( )	( )	( )	( )
Expressing myself (e.g. writing a blog)	( )	( )	( )	( )	( )	( )
Entertainment (TV, radio, news, films, games)	( )	( )	( )	( )	( )	( )
Searching for information	( )	( )	( )	( )	( )	( )
Other, please specify	( )	( )	( )	( )	( )	( )

20. If you do not want to use the computer and/or Internet, why?

_____
_____
_____
_____

21. How do you usually search for information related to your work or profession or hobbies?

	Often	Sometimes	Never
Search Engines (Google, Bing, Yahoo tms.)	( )	( )	( )
Books, papers	( )	( )	( )
Ask current colleagues	( )	( )	( )
Ask previous colleagues	( )	( )	( )
Company internal knowledge (Intranet)	( )	( )	( )
Courses,	( )	( )	( )

seminars, congresses			
Friends	( )	( )	( )
Other, please specify	( )	( )	( )

BLOCK V: LEARNING SKILLS

22. How good are your learning skills as regards learning new things at the moment?
( ) Very good
( ) Quite good
( ) Moderate
( ) Quite poor
( ) Very poor

23. How do you feel about your skills as a computer and Internet user?

	Do not use	Beginner	Average user	Experienced user
Computer	( )	( )	( )	( )
Internet	( )	( )	( )	( )

24. How did you mainly learn to use the computer and Internet?

	I haven´t learned	Independently	Independently with manuals and programs	Friends/relatives showed me how to use it	By taking courses	My col-leagues showed me how to use it
Computer	( )	( )	( )	( )	( )	( )
Internet	( )	( )	( )	( )	( )	( )

25. Why did you learn to use the Internet?
[ ] I haven´t learned how
[ ] Friends use it and I noticed the possibilities
[ ] I was interested, because most information is nowadays on the Internet
[ ] I wanted to do a lot of things from home
[ ] I need/needed it in my work
[ ] Other, please specify _____

26. Would you like to learn more about the use of Internet?
( ) Yes
( ) No

27. What would you like to learn?
[ ] Getting online, technical aspects

( ) Surfing the web
( ) Social networking
[ ] Use of domains
[ ] Loading programs
[ ] Emailing with attachments
[ ] Chatting, use of Messenger
[ ] Participating in discussion forums
[ ] Use of Skype
[ ] Other, please specify _____

28. Have you participated in elearning courses as a teacher or student?
[ ] Yes, as a teacher
[ ] Yes, as a student
[ ] No

THE PURPOSE OF SENIORENGAGE PROJECT IS TO DEVELOP A SOCIAL NETWORK SERVICE FOR CONNECTING SEMI-RETIRED OR RETIRED PROFESSIONALS AND YOUNG PROFESSIONALS. THEREFORE WE WOULD LIKE TO KNOW:

29. What features would you expect from such a social network or platform? Please list the five most important for you.
_____
_____
_____
_____
_____

30. How important is it for you to follow up the development of your professional field after retirement?
( ) Very important
( ) Quite important
( ) Not important
( ) I am not able to say

31. How likely is it, that you will communicate with your previous colleagues or other professionals when you are retired?
( ) Very likely
( ) Quite likely
( ) I am not able to say
( ) Quite unlikely
( ) Very unlikely

32. How often would you use the following channels to communicate with your previous colleagues or other professionals when you are retired?

	At least once a day	Several times a week	Once a week	Several times a month	Several times a year	Never
By phone	( )	( )	( )	( )	( )	( )
By text messages	( )	( )	( )	( )	( )	( )
By letters	( )	( )	( )	( )	( )	( )
By computer (Skype etc.)	( )	( )	( )	( )	( )	( )

By emails	( )	( )	( )	( )	( )	( )
By social media (Facebook, Twitter, LinkedIn,MySpace, etc.)	( )	( )	( )	( )	( )	( )
People visit me	( )	( )	( )	( )	( )	( )
Other, please specify	( )	( )	( )	( )	( )	( )

33. How likely is it, that you will help/be a mentor for the younger colleagues in professional questions?

( ) Very likely
( ) Quite likely
( ) I am not able to say
( ) Quite unlikely
( ) Very unlikely

34. Would you like to support the development of SeniorEngage by discussing requirements and testing the platform?

( ) No
( ) Yes
( ) If yes, please provide your email adress or phone number for contacting you

_____

Thank you for completing the survey!

APPENDIX 3 Questionnaire of young professionals

Seniorengage Young Professionals Questionnaire EN

The SENIORENGAGE is a project financed by European Commission, the main objective of which is to develop a community knowledge sharing network to empower seniors to continue to be active in the post-retirement years by activating the intergenerational co-operation.

The target group of this survey is young professionals. The purpose of this questionnaire is to explore your current use of computer and the Internet, as well as to collect the needs and wishes for the future development of this social network.

BLOCK I: ATTITUDES TOWARDS ELDERLY/RETIRED PROFESSIONALS

1. The experience of retired professionals in my domain of work is still of high value.

( ) I strongly agree
( ) I agree
( ) Undecided
( ) I disagree
( ) I strongly disagree

2. The knowledge of retired professionals in my domain of work is still of high value.

( ) I strongly agree
( ) I agree
( ) Undecided
( ) I disagree
( ) I strongly disagree

3. The knowledge of retired professionals in general is still of high value.

( ) I strongly agree
( ) I agree
( ) Undecided
( ) I disagree
( ) I strongly disagree

4. I appreciate the opinion respectively input of older professionals to my work.

( ) I strongly agree
( ) I agree
( ) Undecided
( ) I disagree
( ) I strongly disagree

5. I have good experiences in working together with older professionals.

( ) I strongly agree
( ) I agree

( ) Undecided
( ) I disagree
( ) I strongly disagree

6. It is important to transfer the knowledge of retired professionals to young professionals.

( ) I strongly agree
( ) I agree
( ) Undecided
( ) I disagree
( ) I strongly disagree
( ) Please justify your answer _____

7. How likely is it that, retired professionals are able to help you in questions concerning your personal work?

( ) Very likely
( ) Quite likely
( ) I am not able to say
( ) Quite unlikely
( ) Very unlikely

BLOCK II: COMMUNICATION AND TECHNOLOGY USE

8. How often do you use a computer and which kind of applications?

	At least once a day	Several times a week	Once a week	Several times a month	Less frequent	Never
Computer in general	( )	( )	( )	( )	( )	( )
Text processing (Microsoft Word or equivalent)	( )	( )	( )	( )	( )	( )
Calculations (Microsoft Excel or equivalent)	( )	( )	( )	( )	( )	( )
Presentations (Microsoft PowerPoint or equivalent)	( )	( )	( )	( )	( )	( )
Drawing (Microsoft Visio, Adobe Illustrator or equivalent)	( )	( )	( )	( )	( )	( )
Photo or video editing (Adobe Pho-	( )	( )	( )	( )	( )	( )

toshop, Premiere or equivalent)						
Programming (for Desktop, Server, Web or Mobile devices)	( )	( )	( )	( )	( )	( )
Other, please specify	( )	( )	( )	( )	( )	( )

9. How often do you use the Internet and what do you do?

	At least once a day	Several times a week	Once a week	Several times a month	Less frequent	Never
Internet in general	( )	( )	( )	( )	( )	( )
Shopping (e.g. tickets, clothes, books)	( )	( )	( )	( )	( )	( )
E-government (e.g. paying taxes, filling out forms, voting)	( )	( )	( )	( )	( )	( )
Banking	( )	( )	( )	( )	( )	( )
Search for new friends or partner	( )	( )	( )	( )	( )	( )
Expressing myself (e.g. writing a blog)	( )	( )	( )	( )	( )	( )
Entertainment (TV, radio, news, videos, games)	( )	( )	( )	( )	( )	( )
Searching for information	( )	( )	( )	( )	( )	( )
Communicating with friends	( )	( )	( )	( )	( )	( )
Other, please specify	( )	( )	( )	( )	( )	( )

10. If you do not use the Internet, why not?

_____
_____
_____
_____

11. Do you have a computer at home?

( ) Yes
( ) No

12. How often do you use the following channels to communicate with your relatives and friends?

	At least once a day	Several times a week	Once a week	Several times a month	Several times a year	Never
By phone	( )	( )	( )	( )	( )	( )
By text messages (SMS)	( )	( )	( )	( )	( )	( )
By letters	( )	( )	( )	( )	( )	( )
By VoIP (Skype call or equiva-lent)	( )	( )	( )	( )	( )	( )
By Instant Messaging (ICQ, Skype, Messenger or equiva-lent)	( )	( )	( )	( )	( )	( )
By E-Mail	( )	( )	( )	( )	( )	( )
Face-to-face	( )	( )	( )	( )	( )	( )
Other, please specify	( )	( )	( )	( )	( )	( )

13. How often do you use the following channels to communicate with your colleagues in business context?

	At least once a day	Several times a week	Once a week	Several times a month	Several times a year	Never
By phone	( )	( )	( )	( )	( )	( )
By text messages (SMS)	( )	( )	( )	( )	( )	( )
By letters	( )	( )	( )	( )	( )	( )
By VoIP (Skype call or equiva-lent)	( )	( )	( )	( )	( )	( )

By Instant Messaging (ICQ, Skype, Messenger or equivalent)	( )	( )	( )	( )	( )	( )
By E-Mail	( )	( )	( )	( )	( )	( )
Face-to-face	( )	( )	( )	( )	( )	( )
Other, please specify	( )	( )	( )	( )	( )	( )

14. How often do you use the following channels to communicate with your previous colleagues or other professionals in business context?

	At least once a day	Several times a week	Once a week	Several times a month	Several times a year	Never
By phone	( )	( )	( )	( )	( )	( )
By text messages (SMS)	( )	( )	( )	( )	( )	( )
By letters	( )	( )	( )	( )	( )	( )
By VoIP (Skype call or equivalent)	( )	( )	( )	( )	( )	( )
By Instant Messaging (ICQ, Skype, Messenger or equivalent)	( )	( )	( )	( )	( )	( )
By E-Mail	( )	( )	( )	( )	( )	( )
Face-to-face	( )	( )	( )	( )	( )	( )
Other, please specify	( )	( )	( )	( )	( )	( )

15. How often do you use the following social networking services in private context?

	At least once a day	Several times a week	Once a week	Several times a month	Several times a year	Never
Facebook	( )	( )	( )	( )	( )	( )
MeinVZ/studiVZ	( )	( )	( )	( )	( )	( )

MySpace	( )	( )	( )	( )	( )	( )
Xing	( )	( )	( )	( )	( )	( )
LinkedIn	( )	( )	( )	( )	( )	( )
Twitter	( )	( )	( )	( )	( )	( )
Other social networking services you use	( )	( )	( )	( )	( )	( )

16. How often do you use the following social networking services in business context?

	At least once a day	Several times a week	Once a week	Several times a month	Several times a year	Never
Facebook	( )	( )	( )	( )	( )	( )
MeinVZ/studiVZ	( )	( )	( )	( )	( )	( )
MySpace	( )	( )	( )	( )	( )	( )
Xing	( )	( )	( )	( )	( )	( )
LinkedIn	( )	( )	( )	( )	( )	( )
Twitter	( )	( )	( )	( )	( )	( )
Other social networking services you use	( )	( )	( )	( )	( )	( )

BLOCK III: SEARCH FOR INFORMATION

17. How do you usually search for vital needed information related to your work or profession?

	Often	Sometimes	Never
Search Engines (Google, Bing, Yahoo or equivalent)	( )	( )	( )
Books	( )	( )	( )
Ask colleagues	( )	( )	( )
Ask former colleagues	( )	( )	( )
Ask Friends	( )	( )	( )
Company internal knowlegde (e.g. Intra-	( )	( )	( )

net or knowledge repositories)			
Other	( )	( )	( )

18. What are the main sources that provide you with general information relevant for your work or profession?

	Often	Sometimes	Never
Search Engines (Google, Bing, Yahoo or equivalent)	( )	( )	( )
Lexica/Books	( )	( )	( )
RSS Feeds of relevant websites/blogs	( )	( )	( )
Newsletter	( )	( )	( )
Expert Workshops (Discussion rounds)	( )	( )	( )
Seminars for further education	( )	( )	( )
Conferences/fairs	( )	( )	( )
Internet investigations	( )	( )	( )
Talkings with colleagues/friends	( )	( )	( )
Company internal knowledge (e.g. Intranet or knowledge repositories)	( )	( )	( )
Other	( )	( )	( )

19. If a problem occurs at work and you do not know how to solve it, what do you do?

_____
_____
_____
_____

20. In which aspects of your work could you personally benefit from the knowledge/experience of an experienced retired professional?

_____
_____
_____

_____

BLOCK IV: Attitudes towards SeniorEngage

The purpose of the Seniorengage project is to develop a social network service for connecting retired professionals and young professionals.
Therefore we would like to know:

21. What features would you expect from such a platform? Please list the five most important for you below.

_____
_____
_____
_____

22. Under which conditions would you use SeniorEngage? "I would use it in business context..." (multiple answers possible)

( ) Immediately, when a problem occurs at work.
( ) If I know that older people could have experience with the problem.
( ) After I have asked my colleagues and they could not help me.
( ) After I have researched the problem on the Internet without success.
( ) After I have checked all other problem-solving strategies.
( ) Never
( ) Other, please specify _____

23. Under which conditions would you use SeniorEngage? "I would use it in leisure context..." (multiple answers possible)

( ) Immediately, when I have a question related to my hobbies.
( ) If I know that older people could have experience with the topic.
( ) After I have asked my relatives/friends and they could not help me.
( ) After I have researched the topic in the Internet without success.
( ) After I have checked all other problem-solving strategies.
( ) Never
( ) Other, please specify _____

24. Would you like to support the development of SeniorEngage by discussing requirements and testing the platform (financial compensation included)?

( ) No
( ) Yes
( ) If Yes, please provide us your E-mail address and telephone number for contacting you:
_____

25. Place of living: _____

BLOCK V: DEMOGRAPHICS

26. You are?

( ) Male
( ) Female

27. How old are you? _____

28. What is the highest level of education you currently have?

( ) None or elementary school
( ) Apprenticeship
( ) Secondary school
( ) Upper secondary school
( ) University level
( ) Other, please specify _____

29. In which subject(s) do you have your highest level of education?
_____

30. Do you study at the moment? If yes, in which field(s) of study?

( ) No
( ) Yes
( ) Field(s) of study _____

31. What is your employment status at the moment?

( ) Full-time worker
( ) Part-time worker
( ) Not working
( ) Other, please specify _____

32. What is your work or occupation at the moment?
_____
_____
_____
_____

33. How long have you been working in your current position?
_____

34. Which hobbies do you have?
_____
_____
_____
_____

Thank you for completing the survey!

Thanks for your help!

APPENDIX 4 Report "Attitudes and behaviour of the Senior Population: Exploring the digital views of aging population"

Microlink

Attitudes and Behaviour of the Senior Population:

Exploring the Digital Views of the Aging Population

Report by
E.A. Draffan,
ECS, University of Southampton.
20/04/2011

Contents

Introduction

This report offers an understanding of existing research and data relevant to Seniorengage. It reviews the attitudes and behaviour of those around the age of 60 and over regarding their use of ICT in general, their use of the internet, webpages, social networking and Assistive Technology where necessary. There are issues that prevent access that are related to personal feelings, knowledge, sensory, motor and cognitive skills as well as external factors such as internet connections and finance. These issues appear to hamper progress in the field of online 'connectedness' despite the fact that enhanced well-being can be achieved by such interactions.

Executive Summary
The summary is offered in a series of key points to assist with future presentations.
Key Points

- **Statistics pertaining to seniors in an online environment**: Digital Inclusion
  - Around 37% of those aged between 55 -74 years used the Internet on average at least once a week
  - The older a person is the less they tend to use the Internet
  - Internet usage amongst the older age groups has almost doubled over the last five years
  - Figures vary between the different surveys.

- **Information regarding senior use of social networks**
  - Around 80% of 55-74 year olds send/receive emails, but only 20% use the internet for VOIP (Voice over Internet Protocol) and around 18% post messages to chat sites, blogs and social networking sites.
  - In the USA almost a quarter of those surveyed using Facebook were over 50 years old.
  - But older users are underrepresented in comparison to the general population on social networking sites.

- **Information on the most popular senior websites. What do they have in common?**
  - Top reasons for using the computer and going on websites were for email, searching for goods and services, travel, news and health.
  - Google, YouTube, Yahoo and Ebay equivalents
  - Common theme - Search, information, buying and selling
  - Very few are social networking sites only Linkedin came into the frame.

- **Barriers hindering senior's usage of online resources**
  - too expensive and see no need – fear of the unknown
  - have poor technological skills, too complex, inaccessible
  - deteriorating cognitive, physical and sensory capabilities
  - information overload, spam, viruses etc.

- **Relevant data as it relates to digital inclusion and self-worth in the aging population. Possible health benefits.**

  - cognitive performance improvements
  - benefits to feelings of well-being
  - less depressed and lonely
  - Build friendships and learn new skills

- **Assistive Technology most commonly used by seniors to access computers**
  - There does not appear to be any data to show which Assistive Technologies are used by the elderly for social networking purposes.
  - Adapting operating systems built in accessibility options appears to be mentioned more than specialist applications
  - There are many AT applications that would help the elderly and these are known to the experts and companies in the field, but not necessarily their potential users.
  - More research in this area is required.

- **Case Studies**
  - Elderly users of social networks are buoyant about the impact it has on their lives.
  - Communication with friends and family is often mentioned
  - Some countries have set up specific social networks for the 55+ market.
  - Many networks exist for specific purposes such as hobbies

1.**Statistics pertaining to seniors in an online environment: Digital Inclusion**

The five countries involved with this project have very different population sizes when it comes to the number of people over 60 years of age (see table below). The percentages of those who have access to the Internet also jumps from 76% in Finland down to 52% in Hungary, according to the European statistics agency, Eurostat. However, one common factor is the percentage of elderly people in relation to the whole population. Each country is facing the same problem in the future – over a quarter of the population will be retiring or is already retired and will need support in a way that is timely and financially expedient. Those who have been in work may also wish to keep in touch with their colleagues or start new projects to maintain health and well being.

However, it should be noted that in the EU only 37% of those aged between 55 -74 years used the Internet on average at least once a week (Eurostat, 2010). [2] **This compares rather unfavourably with the number who actually had access.**

Country	**Austria**	**Finland**	**Hungary**	**Spain**	**UK**
Population in thousands 2010 60+ taken from UN http://esa.un.org/unpp/index.asp?panel=2	1,937 (23.1%)	1,319 (24.7%)	2,238 (22.4%)	10,152 (22.4%)	14,040 (22.7%)
Households having access to the Internet, by type of connection - 2010 (as % of all households)[3] *Household Internet connection type: broadband* – Eurostat http://epp.eurostat.ec.europa.eu/portal/page/portal/information_society/data/main_tables There are stats available across the whole of the EU (Appendix 1)	64%	76%	52%	57%	73% (ONS http://www.statistics.gov.uk/cci/nugget.asp?id=8)

Table 1 Population in thousands and households having internet access

Statistics relating to those accessing the Internet vary according to which report is being read and the way in which the access is described, so for instance a survey in Spain in 2010 gave the percentage of those between the ages of 16-74 accessing the Internet as 68.5% of

[2] http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-QA-10-050/EN/KS-QA-10-050-EN.PDF

[3] The access to Internet of households is measured by percentage of households that are connectable to the Internet over a broadband or a Dial-up or ISDN connection. Some households may use more than one type of connection to connect to the Internet. It covers all households having at least one member in the age group 16-74 years.

the total population.[4] But despite the variation in some of the figures, research carried out by Empirica (Germany) and Work Research Centre (Ireland) in 2008 shows that overall "Internet usage amongst the older age groups has almost doubled over the last five years, reaching two-in-five amongst those aged 55-64, and one-in-five of those aged 65 to 74 - hiding, however, regional divergences with national usage rates between 0.4% (65-74, Romania) and 72% (55-64, Sweden). This increase has resulted from two main factors - the ageing of younger age groups who were already using ICT (counteracted to some extent by some cessation of usage amongst these groups, for example, when retiring) and an increase in (new) uptake amongst the older age groups. However, the younger age groups have seen similar increases in usage so the overall ('firstorder') age-divide in Internet usage has hardly changed. "

This research is backed by a study in Austria by showing similar results when analysing the use of the Internet across all ages over the last ten years.

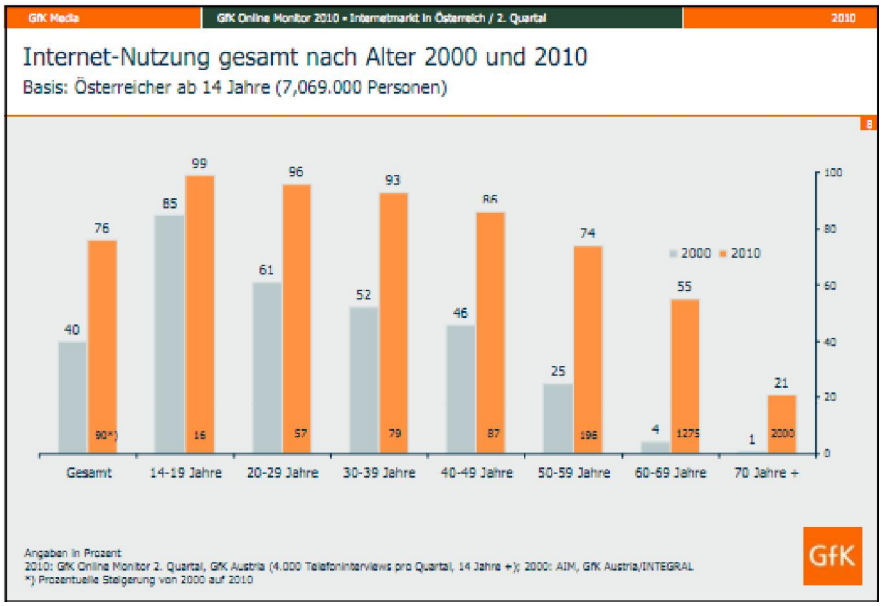


Figure 1 Internet usage in Austria compared over 10 years[5]

"With regard to ICT, the 50+ age group is more polarised than ever before [in Europe]: 57% have computer access at home, and 43% have not; 47% have internet home access, and 53% have not. Of special concern is that the group of nonusers who are also not interested in using ICT at all – [this figure] has hardly decreased since 2001. These so-called "digitally challenged" individuals still account for more than a quarter of the older population." (empirica, 2008) [6]

[4] http://www.red.es/media/registrados/2011-03/1300267470412.pdf?aceptacion=f406e84e17f2ca79946b85e635ce2349

[5] http://www.gfk.at/imperia/md/content/gfkaustria/pages/customresearch/gfk_online_monitor_q2_10.pdf

[6] Usage of mainstream ICT in everyday life (empirica2008) http://ec.europa.eu/information_society/activities/einclusion/docs/swa2finalreport.pdf

On average, the older a person is the less they tend to use the Internet and this appears to be particularly so if they are homemakers and pensioners. In Spain in 2010 only 13% of those aged between 65-74 accessed the internet in the last month[7] which is a similar figure of 15% of those aged 65 and over in the UK in 2006."[8]

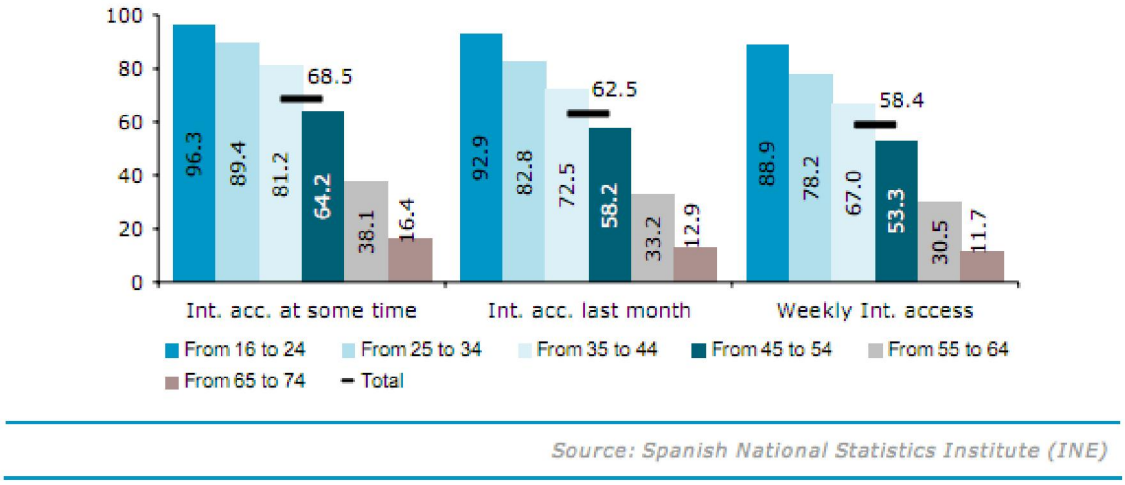


Figure 2. Percentage of Internet users in the different categories by age. 2010 [5]

"In 2006, the EU acknowledged the importance of electronic inclusion ("e-inclusion") and, under the auspices of the Riga ministerial declaration, committed to halving the digital divide by 2010"[9] but a year later they commented that this would not be achieved due to "economic, organisational and social challenges."[10] So it is not just age that causes a digital divide but also factors, such as ICT costs and an individual's standard of education plus their ICT skills and confidence. These factors as well as the growing number of elderly people with functional impairments will be discussed in Section 4.

[7] http://www.red.es/media/registrados/2011-03/1300267470412.pdf?aceptacion=f406e84e17f2ca79946b85e635ce2349
[8] http://www.statistics.gov.uk/cci/nugget.asp?id=1711
[9] http://graphics.eiu.com/upload/Intel_Digital_Divide.pdf
[10] European Commission, Measuring progress in e-Inclusion: Riga Dashboard, November 2007

2.Information regarding senior use of social networks.

"41.7 million Europeans are regular users of social networking sites. They will be 107.4 million by the end of 2012. Europeans are using them to share personal and professional experiences, keep in contact with family and friends, and organise their social lives."[11]

Just over 80% of 55-74 year olds send/receive emails, but only 20% use the internet for VOIP (Voice over Internet Protocol) and around 18% post messages to chat sites, blogs and social networking sites compared to 80% of the 16-24 year olds.[12]

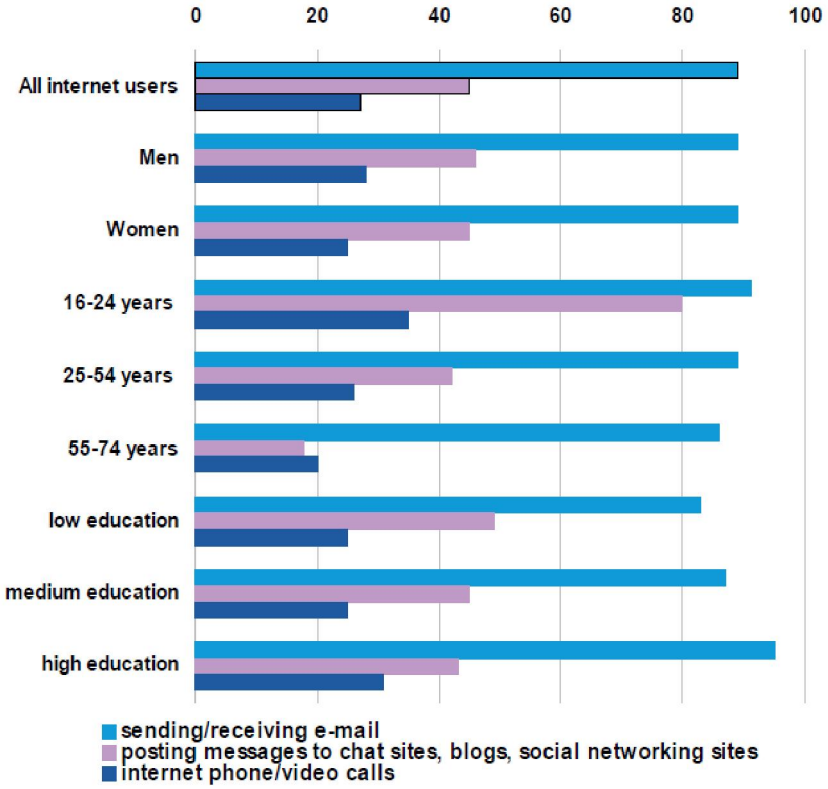


Table 2 Differences between older people in EU and their use of the internet and others.[3]

Technorati have shown in their 'State of the Blogosphere' that less than 3.8% of bloggers are over 65 years and only 13% are aged between 55-64 years. 38% of their sample came from the EU.[13]

This borne out when one looks at the Alexa global traffic metrics, search analytics and demographics for websites[14] (Appendix 4). It should be noted that the statistics depend on the use of a toolbar downloaded by individuals to monitor website usage – the toolbar is mainly used in Internet Explorer so there may be a bias towards Microsoft and there is a greater proportion of English language sites. Nevertheless, despite concerns about the va-

[11] http://ec.europa.eu/information_society/activities/social_networking/index_en.htm
[12] http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-QA-10-050/EN/KS-QA-10-050-EN.PDF
[13] http://technorati.com/blogging/article/who-bloggers-brands-and-consumers-day/#ixzz1Hts6fFSE
[14] http://www.alexa.com/

lidity of the figures, it is clear to see when examining the audience data that older users are underrepresented in comparison to the general population on social networking sites as these sites rarely appear in the table – whereas the same email and search sites appear across all five countries.

However, Nielsen's research (2009) found that social networking had overtaken email as a form of popular online communication and that Facebook now has those aged between 35-49 years of age, as almost one third of its global audience and **almost one quarter are over 50 years old**.[15]

Similarly, in the UK a report by retirement specialist LV stated that, "the older generation continue to embrace technology with a higher number of 60 and 70-somethings using Skype (17% and 23% respectively) than those in their 40s and 50s (12%). Nearly half of 60-somethings are also regulars on Facebook (44%), as well as emailing more regularly than other generations (90%). They also make good use of the internet for shopping online (69%) as well as to check for general information (73%)."[16]

A statement linked to the EU Social Networks and EU R&I Programmes" (Brussels, 26 November 2010) states that:

"The expansion of social networks is undeniable. Throughout the world, people spend over 110 billion minutes on social networks and blog sites. This equates to 22% of time on line, i.e. one in every four and half minutes. The average visitor spends 66% more time on social networks sites than a year ago, almost 6 hours in April 2010 versus 3 hours, 31 minutes last year.

Furthermore, social networks are likely to become the main entry point to the web in the future, prevailing over the existing search engines."[17]

[15] Global Faces and Networked Places; Nielsen Report on Social Networking. Released March 8 2009. http://blog.nielsen.com/nielsenwire/global/social-networking-new-global-footprint/

[16] http://www.lv.com/adviser/working-with-lv/news_detail?articleid=2289085

[17] http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=6599

3.Information on the most popular senior websites. What do they have in common?

Just over 45% of 55-74 year olds go online to read newspapers, which is in line with all internet users but only 18% search for courses although around 35% searched the internet for learning. Around 5% took up an eLearning course.[18]

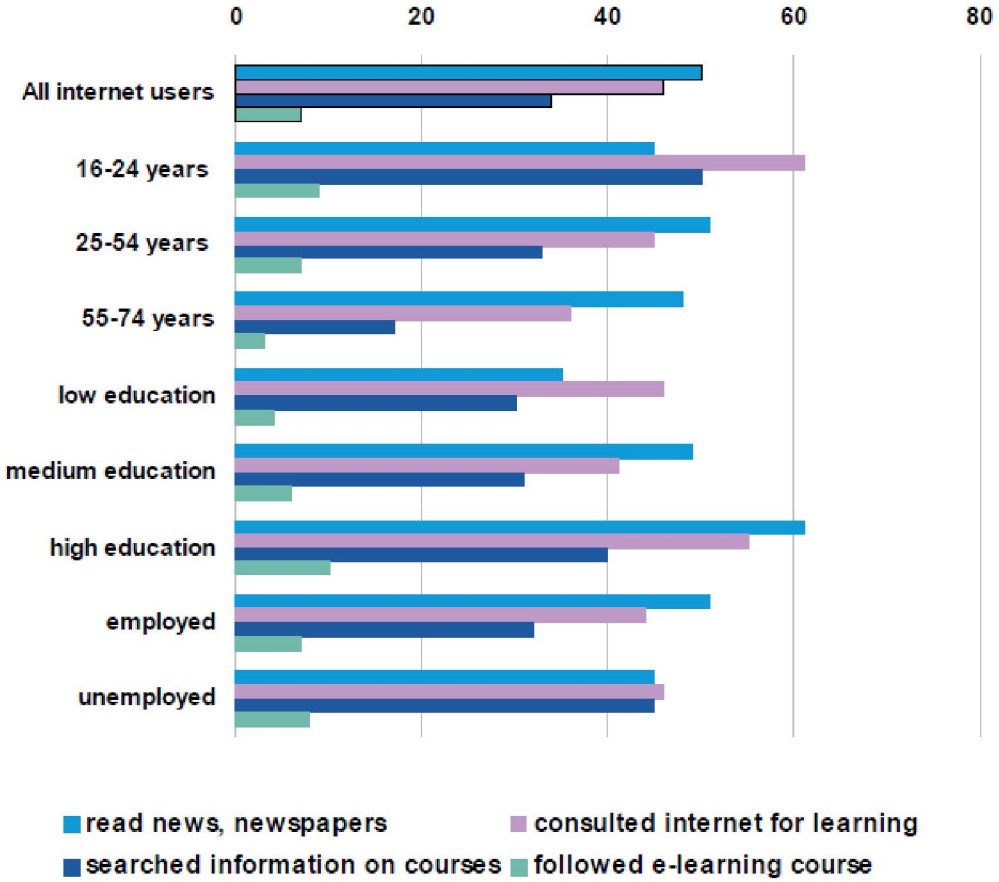


Table 3 Use of internet for reading news and learning purposes, by age group, level of education

In a survey carried out by AgeUK in 2009, "98% of participants had some form of access to a computer, 21% of participants indicated that they did not use the internet. Of those that made use of the internet, participants were asked to select all the internet-based activities that applied to them.

Email was the most widely used internet-based activity with 63% of respondents accessing the internet for this purpose. This was followed by using the internet for information such as news and weather (59%). Surfing the internet for information relating to hobbies (37%) was the third most popular activity followed by shopping online (24%) and genealogy (21%). **19% stated that they use the internet for social networking, highlighting that there is demand from older people to use this form of communication.** Other uses of the internet

[18] http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-QA-10-050/EN/KS-QA-10-050-EN.PDF

(18%) included information specific to transport, holidays, health, photo sharing and activities to develop computer skills such as practicing how to use a mouse and keyboard."[19]

The Alexa traffic rankings[20] for each country (Appendix 4) show a clear favouring by older people for sites that are used for searching for information, news, email and for shopping with a few sites for banking and payments. There was no clear representation of this age group when one looked at the Facebook, Twitter or Wordpress blog figures. Linkedin was used in by a few and appears in the top 10 for three countries.

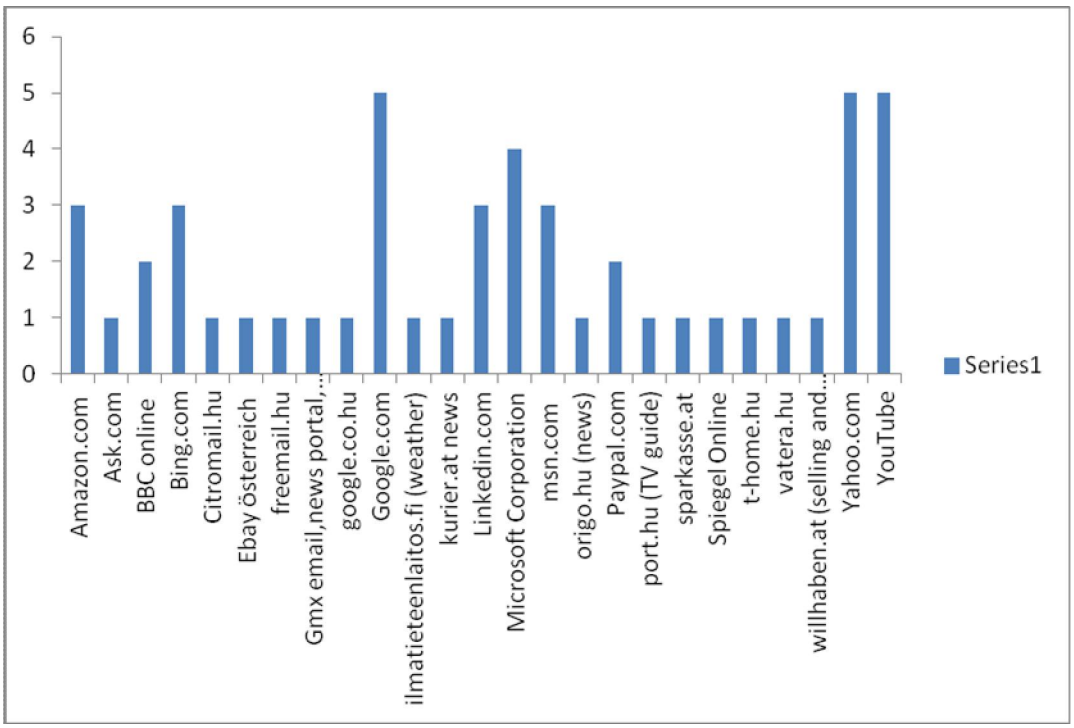


Figure 3 Graph showing the popularity of the sites used by the elderly in the five countries based on Alexa ratings.

However, a more in-depth study in the UK by Age Concern (AgeUK) worked with a group of 60-79 year olds and they found a wider use of the internet than is suggested above. (Appendix 2)

[19] http://www.ageuk.org.uk/documents/en-gb/myfriendsonline_report_2009.pdf?dtrk=true
[20] http://www.alexa.com

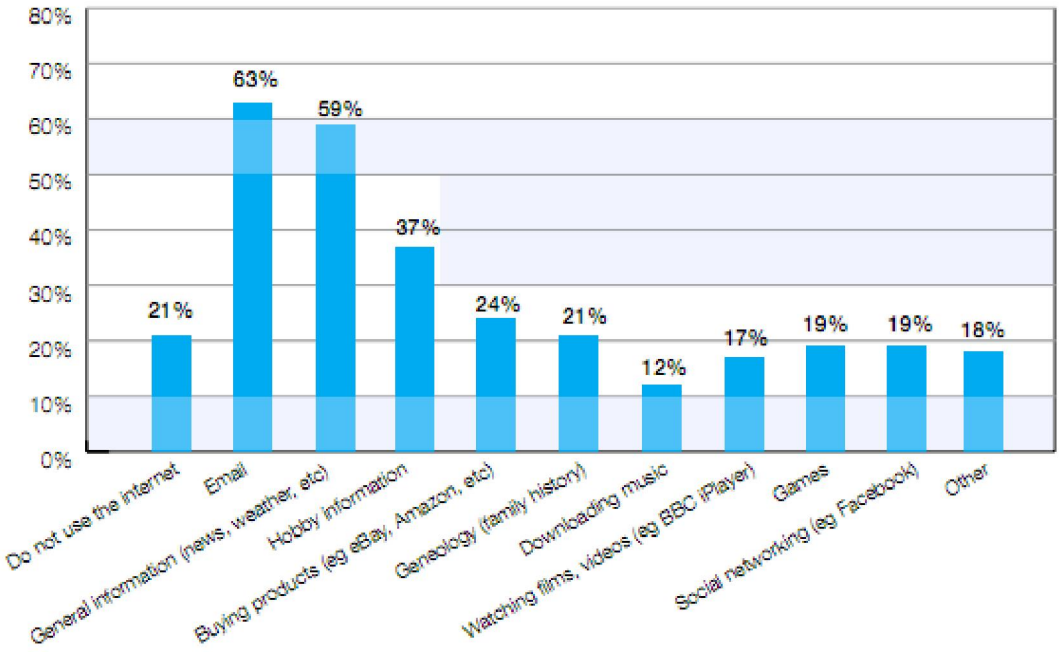


Figure 4. How UK participants aged 60-79 used the internet (Age Concern survey 2009)[21]

In Finland, there is a legal right to access the internet via a broadband connection (2010)[22] the government has also passed an Act where older people are given equal opportunities for participation in how things are planned and should be provided with information about matters under discussion. There has been some assumptions made that older people will use the Internet to gain this information along with the usual channels of communication. The National Framework for High-Quality Services for Older People (2008) states that, "The main ways of providing this information are various bulletins, advisory services, preventive home visits, service handbooks and **municipal websites**. Other good channels promoting participation are forums for the exchange of views and information, such as residents' nights, collaboration with NGOs, parishes and private-sector service providers, and senior citizens' or older people's councils."[23]

In Hungary there is the '50 plus net'[24] providing news and information relevant to the age group as well as a social forum. The site was set up to help users to increase their levels of digital literacy and enhance well-being. It is also being used to capture life stories and share experiences and is run by volunteers as well as those organising the service.

In the UK and Austria the governments have set up portals 'Direct.gov.uk' and 'HELP.gv.at' that comply with W3C web accessibility guidelines and provide a 'one-stop-shop' for individuals to find information about many aspects of state legislation, social welfare, housing grants and other funds etc. The UK has also had many initiatives including the recent

[21] http://www.ageuk.org.uk/documents/en-gb/myfriendsonline_report_2009.pdf?dtrk=true
[22] http://www.epractice.eu/files/eInclusion%20in%20FI-August%202010-2.0_3.pdf
[23] http://pre20090115.stm.fi/ka1212393066110/passthru.pdf
[24] http://www.50plusz.net/

RaceOnline 2012[25] to encourage individuals to 'up skill' in terms of their understanding of technology and come online as more and more commercial and charitable organisations are using social networks to communicate with their customers.[26] The Urban Forum report on how the voluntary and community sector are using ICT highlights the necessity for the elderly to find their way onto these networks to remain in touch. "72% of all organisations and individuals surveyed use social media, with the most popular platforms being Facebook (79% of those using any social media) and Twitter (74%)." (Urban Forum Report, 2011) [24]

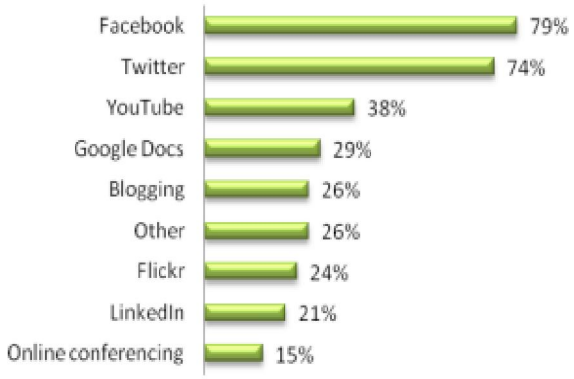


Figure 5. If you use social media, which do you use?

Figure 6. What does your organisation use social media for?

In Spain the Portal for Seniors (Portal Mayores)[27] was set up with its main objectives being to:

- create a virtual information service for elderly people;
- establish an electronic platform to support the scientific and professional community;

[25] http://raceonline2012.org/
[26] http://www.urbanforum.org.uk/files/briefings/community_2.0.pdf
[27] http://www.epractice.eu/files/eInclusion%20in%20ES%20-%20December%202010-%202.1_1.pdf

- develop content and value-added services for the promotion of R&D and innovation in the field of Gerontology and Geriatrics;
- implement web information services in line with international standards and quality assurance management;
- encourage collaboration with other organisations to provide integrated services.

Spain also has a network of telecentres (similar to the UK Online centres) designed to encourage those in rural and dis-advantaged areas to learn about new technologies and have access to the internet so that they can use the eGovernment portal '060.es'.

So it would appear that countries are picking up on the way the elderly population is happy to use the internet for information and news and a recent Swedish study "Elderly Swedes and the Internet, 2010,"[28] confirms what has been shown to occur in the five countries that make up this project.

"Most elderly Internet users go online for practical everyday tasks such as searching for a map and route description, or looking for addresses and schedules. They turn to the Internet when they need to find travel information and to see what is being bought and sold. The elderly are also active on the Internet for fact finding and in terms of hobbies and special interests. The same applies to culture, literature, science, and healthcare and civic information"... plus the use of emails and the attachment of documents rather than social networks for exchanging information and that this group were now reading news online.

The authors of the report point out (as has been stated at the beginning of this section), "**elderly Internet users are not that different from Internet users of other generations, at least when it comes to Internet experience**. A significant portion of the older generation is associated with the early adopters of the Internet and they have 15 to 20 years' experience of computers and the Internet … **the real difference between the younger and older generations is that a significant portion of the older generation does not use the Internet at all**."

Two further studies carried out by Pew Internet in USA (2010) and WSI Marketing Trends in UK (2009) showed the diversity of usage was similar in a few cases across the age range but largely confirmed the **top services used by the Baby Boomers to 65+ as being email, searching for goods and services, travel, news and health.**

[28] http://www.iis.se/docs/Aldre_svenskar_och_internet_2010.pdf

Generations Online 2010: Summary

The following chart shows the popularity of internet activities among internet users in each generation.

Survey dates vary—for details, see the **Methodology** section at the end of this report.

90-100%	40-49%
80-89%	30-39%
70-79%	20-29%
60-69%	10-19%
50-59%	0-9%

Key: % of internet users in each generation who engage in this online activity

Pew Internet
Pew Internet & American Life Project

Millennials Ages 18-33	Gen X Ages 34-45	Younger Boomers Ages 46-55	Older Boomers Ages 56-64	Silent Generation Ages 65-73	G.I. Generation Age 74+
Email	Email	Email	Email	Email	Email
Search	Search	Search	Search	Search	Search
Health info	Health info	Health info	Health info	Health info	Health info
Use SNS	Get news	Get news	Get news	Get news	Buy a product
Watch video	Govt website	Govt website	Govt website	Travel reservations	Get news
Get news	Travel reservations	Travel reservations	Buy a product	Buy a product	Travel reservations
Buy a product	Watch video	Buy a product	Travel reservations	Govt website	Govt website
IM	Buy a product	Watch video	Bank online	Watch video	Bank online
Listen to music	Use SNS	Bank online	Watch video	Financial info	Financial info
Travel reservations	Bank online	Use SNS	Use SNS	Bank online	Religious info
Online classifieds	Online classifieds	Online classifieds	Online classifieds	Rate things	Watch video
Bank online	Listen to music	Listen to music	Financial info	Use SNS	Play games
Govt website	IM	Financial info	Rate things	Online classifieds	Online classifieds
Play games	Play games	IM	Listen to music	IM	Use SNS
Read blogs	Financial info	Religious info	Religious info	Religious info	Rate things
Financial info	Religious info	Rate things	IM	Play games	Read blogs
Rate things	Read blogs	Read blogs	Play games	Listen to music	Donate to charity
Religious info	Rate things	Play games	Read blogs	Read blogs	Listen to music
Online auction	Online auction	Online auction	Online auction	Donate to charity	Podcasts
Podcasts	Donate to charity	Donate to charity	Donate to charity	Online auction	Online auction
Donate to charity	Podcasts	Podcasts	Podcasts	Podcasts	Blog
Blog	Blog	Blog	Blog	Blog	IM
Virtual worlds	Virtual worlds	Virtual worlds	Virtual worlds	Virtual worlds	Virtual worlds

Source: Pew Internet surveys. *pewinternet.org*

This is a US study that shows exactly where the age groups differ in their internet usage.

Available from http://humanfactorsblog.org/2010/12/16/age-related-differences-in-the-use-of-the-internet/?replytocom=5661

UNITED KINGDOM

Online Activities

Online Activities of UK Internet Users by Age

- The most popular online activity among UK Internet users is sending/receiving email (90% of respondents)
- Email is most commonly used by those between the ages of 16-24 (94% of respondents)
- 78% of the UK online population use the Web to find information about products and services
- Product and service research is most popular among those between the ages of 25-44 (83%)
- 40% of Internet users use the Internet to upload self-created content online
- Similarly, 40% use the Web to post messages on chat sites, blogs and news groups
- These 2 activities are especially popular among those between the ages of 16-24 years old (54% for uploading self-created content and 71% for posting messages online)

Online Activities of UK Internet Users*, by Age, 2009
(% of respondents in each group)

	16-24	25-44	45-54	55-64	65+	Total
Sending/receiving e-mail	94%	92%	88%	86%	82%	90%
Finding information about goods and services	64%	83%	80%	81%	75%	78%
Using services related to travel and accommodation	53%	75%	72%	72%	65%	69%
Internet banking	50%	61%	55%	48%	43%	54%
Reading or downloading online news, newspapers, magazines	46%	58%	52%	47%	44%	52%
Playing or downloading games, images, films or music	70%	46%	35%	26%	16%	44%
Listening to Web radio or watching Web TV	53%	46%	35%	34%	25%	42%
Seeking health-related information	31%	45%	47%	44%	38%	42%
Uploading self-created content	54%	44%	34%	29%	21%	40%
Posting messages to chat sites, blogs, newsgroups, etc.	71%	45%	25%	19%	-	40%
Consulting the Internet with the purpose of learning	41%	39%	38%	32%	26%	37%
Looking for information about education, training or courses	53%	38%	36%	21%	15%	36%
Downloading software	46%	39%	31%	25%	25%	36%
Looking for job or sending job application	50%	33%	27%	12%	-	30%
VoIP/video calls (via Webcam)	25%	23%	19%	19%	13%	21%
Selling goods or services over the Internet	19%	23%	17%	13%	-	19%
Doing an online course	-	9%	10%	-	-	8%

*Note: *who have accessed the Internet in the past three months*
Source: Office for National Statistics (ONS) - UK, "Internet Access 2009: Households and Individuals," August 28, 2009

106467 www.eMarketer.com

Taken from http://www.surreybusinessadvice.co.uk/files/Trends2010.pdf

4.Barriers hindering senior's usage of online resources

A Digital Agenda for Europe Brussels, 26.8.2010
"The digital era should be about empowerment and emancipation; background or skills should not be a barrier to accessing this potential.

As more daily tasks are carried out online, from applying for a job to paying taxes or booking tickets, using the internet has become an integral part of daily life for many Europeans. **Yet, 150 million Europeans – some 30% - have never used the internet. Often they say they have no need or that it is too expensive. This group is largely made up of people aged 65 to 74 years old, people on low incomes, the unemployed and the less educated."**[29]

This is confirmed by Age UK who have stated that, "from previous evaluations conducted, older people often cite the lack of relevance as a barrier to engaging with new technologies. If the benefits of engaging with new technologies were clearer, a significant proportion of self-excluded and digitally dismissive older people would take the steps to become digitally engaged."[30]

Lack of skills have also been cited in several EU reports (ICT4T[31] ePractice EU factsheets[32]) and as the graph below illustrates there are a higher proportion of elderly individuals who have never used a computer and therefore may have limited experience of the Internet – although it should be noted that these figures were collated in 2006.

Computer user skill level	EU total	Low educated	Aged 55-64	Aged 65-74	Retired/ inactive	unemployed	Women
Never used	41	65	61	83	73	44	44
Have some degree of computer skills	59	35	39	17	27	56	56

Notes
1. Figures are the percentage of the population in the particular group
2. Low educational level applies to those with no formal education, primary or lower secondary education responding to UNESCO's ISCED classification levels 0, 1 or 2)

Source: Eurostat, Community Survey on ICT use in Households and by Individuals, 2006

Figure 7. Computer Literacy in the EU (2006)[33]

The five countries in the project according to details in the epractice.eu factsheets [30] have in recent years set up initiatives to enhance computer literacy skills in the elderly. The umbrella organisation of Austrian organisations for older people, the Austrian Senior Citizens Council (Österreichischer Seniorenrat), started the initiative 'Seniorkom.at' in cooperation with Telekom Austria. 20, 000 elderly people in Austria have been given computer and

[29] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF
[30] http://www.ageuk.org.uk/documents/en-gb/myfriendsonline_report_2009.pdf?dtrk=true
[31] http://www.ict4t.net/
[32] http://www.epractice.eu/en/factsheets/
[33] http://graphics.eiu.com/upload/Intel_Digital_Divide.pdf

internet sessions to enable them to access information on the Internet.[34] The UK has UK-online centres and Spain has telecentres but even when computer skills have been raised there is still the issue of complex websites that can cause concern.

A charity in the UK called SAGA has an online community "SAGA Zone" targeting those who are 50 plus. Anne-Sophie Parent, Director of AGE has commented that "older people may feel more comfortable to go to a website tailored to their needs in terms of accessibility and information. The more older people learn to use those websites, the keener they will become in accessing other sites. "[35] There are several others available in the USA such as 'Eons', 'myboomerplace.com', 'elderwisdomcircle.org' and family sharing sites like 'MyFamily', and 'Geni' targeting baby boomers (those born around 1950-60s).

Accessibility is important due to possible sensory and physical difficulties that may occur in old age such as poor visual acuity, limited hearing and stiffness or dexterity problems that affect mouse and keyboard use. There are several aspects to accessibility such as using the computer and the software as well as the web page design. "Inappropriate interface designs are a fundamental barrier to digital inclusion: older adults find standard interfaces harder to use than younger adults do even when computer experience is controlled for … Lack of experience and support make it relatively more likely that older adults will have negative computer experiences, a significant factor in computer anxiety… (Dickinson *et al.*, 2005)[36]

A Pew Internet study noted that "Small type, low-contrast colour choices, and pull-down menus can have a significant effect on an older user's ability to navigate a site. The Nielsen Norman Group[37] has found that standard Web sites are twice as difficult to use for wired seniors [over the age of 65] versus Internet users between 18-55 years old. Older users made nearly five errors per assigned task, compared with less than one error for younger users."[38]

The e-accessibility MeAC project – Measuring Progress of eAccessibility in Europe (2006-2008) evaluated a series of EU websites against WCAG 1.0 Level A criteria, including both automatic and manual evaluation.[39] The results are over two years old and the evaluations are now being undertaken by the eAccessibility Monitoring Project, but at the time of writing the 2010 report was not available.[40] As can be seen from the figures there may be many web sites that would be hard for the elderly to access and therefore there would either be the need for the use of assistive technologies or systems within the web pages that offer

---

[34] http://www.epractice.eu/files/eInclusion%20in%20AT-%20May%202010%20-2.0_2.pdf

[35] http://www.age-platform.eu/en/age-policy-work/accessibility/lastest-news/504-anne-sophie-parent-director-of-age-being-interviewed-in-the-radio-programme-europe-today-bbc-world-service

[36] Dickinson, A., Newell, A. F., Smith, M. J., & Hill, R. L. (2005). Introducing the internet to the over-60s: Developing an email system for older novice computer users. *Interacting with Computers, 17*(6).

[37] http://www.nngroup.com/reports/seniors

[38] http://www.pewinternet.org/Reports/2004/Older-Americans-and-the-Internet/5-Implications-for-the-future/01-Many-seniors-have-no-interest-in-going-online.aspx

[39] http://www.eaccessibility-progress.eu/key-results-of-meac/get-the-full-report/

[40] http://www.eaccessibility-monitoring.eu/researchResult.aspx

improved accessibility such as ATbar,[41] a browser based toolbar that offers text enlargement, colour changes and text to speech. These additions may only be necessary if websites do not offer universal ease of access.

Country	Austria (2008)	Finland (2007)	Hungary (2007)	Spain (2008)	UK (2008)
Selected public websites passed the automatic evaluation	2 out of 6	1 out of 5	1 out of 5	3 out of 5	4 out of 6
Selected private/commercial /sectoral web sites passed the automatic evaluation	0	0	0	2 out of 6	1 out of 6

Figure 8. Number of accessible public and private websites by country

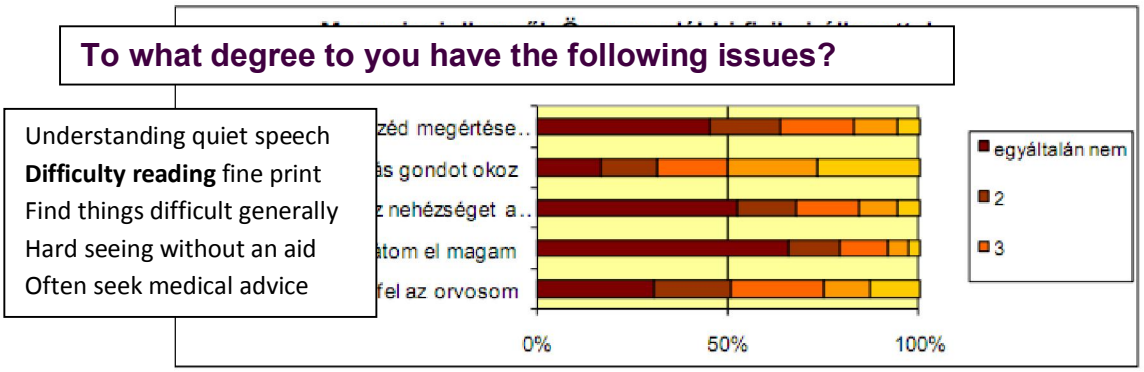
Too much information is also an issue that has been researched by BITKOM[42] who found that 39% of Germans aged 65 years often had a feeling of information overload. "We must learn as a society, to better manage the flood of messages." **So it is not just the technology but also the content that has to be managed in a way that allows the elderly to join the younger generation in its consumption.**

The Swedish study,[43] mentioned in the previous section, comments on the issue of a lack of education and its impact on internet use in particular for women so “among those who lack higher education, there is little interest in purchasing a computer with an Internet connection. Half of the less-educated born in the 1940s, primarily women, still do not use the Internet, while at the same time, 90% of the well-educated in that same demographic does.” Interviews with this group showed once again a lack of interest, fear of its complexity (15%) and cost (11%) and content with the gadgets they already have such as the TV, radio, fixed and mobile phones.

A Hungarian study[44] illustrates below the issues around physical, sensory and motor difficulties encountered by the elderly and their impact on the use of a computer. The graph

[41] http://access.ecs.soton.ac.uk/ToolBar/
[42] http://www.bitkom.org/67518_67508.aspx
[43] http://www.iis.se/docs/Aldre_svenskar_och_internet_2010.pdf
[44] http://www.ittkalapitvany.hu/idosodo_docs/04_Kerdoives_Aktivitas.pdf

shows how the participants in the survey measured their functional difficulties on a five



point scale.

Figure 9 Hungarian research showing percentage elderly encountering certain difficulties.

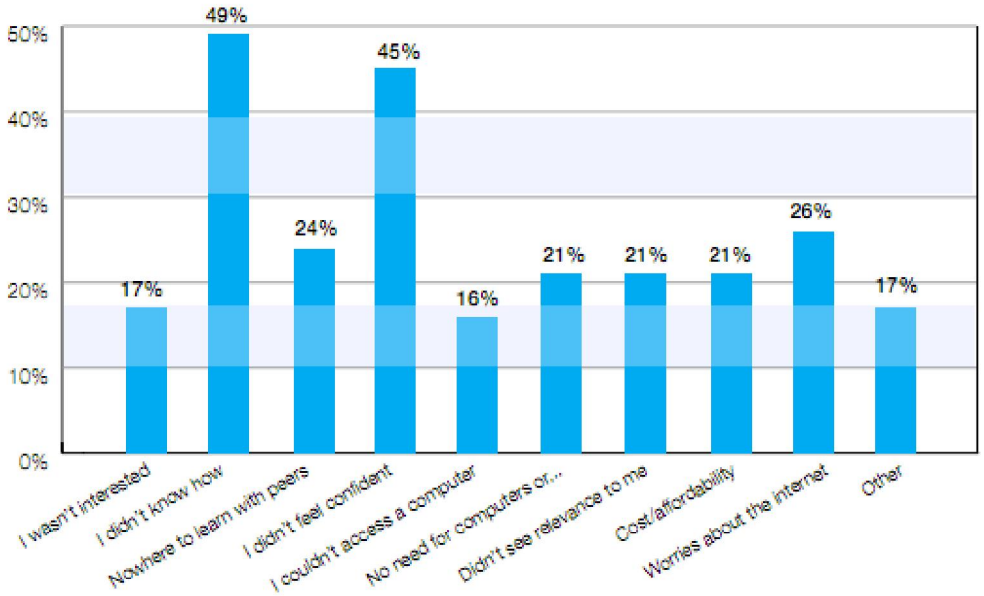


Figure 10. UK participants self-reported barriers to using a computer and the internet. (Age Concern, 2009)[45]

Those who are elderly may be embracing the internet once they have understood why it is essential for their well-being and have overcome any accessibility issues. However, they may still feel it is too expensive, too complex, inaccessible, have poor technological skills, deteriorating cognitive, physical and sensory capabilities and not wish to suffer from information overload. This also does not take into account a lack of confidence and concerns around internet security etc.

According to the Oxford Internet Institute (OII), at Oxford University, many elderly people resist technology through fear of pornography or the lack of security associated with the web. Professor Bill Dutton states "Getting older people to experience the internet, when they distrust it, is central to the challenge". Older people are very concerned about SPAM,

[45] http://www.ageuk.org.uk/documents/en-gb/myfriendsonline_report_2009.pdf?dtrk=true

viruses and unpleasant experiences.[46]

"To be a real success, the Information Society must share its benefits with the whole society, including people who find it more difficult to use new technologies, such as those with a disability and the elderly. The European Commission is promoting "eAccessibility" aimed at ensuring people with disabilities and elderly people access ICTs on an equal basis with others. This includes removing the barriers encountered when trying to access and use ICT products, services and applications." [47]

[46] http://www.finerfamily.com/digitaldivide.html
[47] http://www.eaccessibility-impacts.eu/news/details.aspx?id=16&tipo=1

5.**Relevant data as it relates to digital inclusion and self-worth in the aging population. Possible health benefits.**

"**Digital technologies are the greatest driver for innovation in health**. ICT improves care efficiency, frees up hospital beds for those in greatest need, and most importantly: users love it. With the number of 65+ Europeans set to double in coming decades, we have to really pay attention to these opportunities. These are opportunities that truly are of the win-win kind. They will help people, grow new industries and change the way we do both." Neelie Kroes Vice President of the European Commission (2010)[48]

An AgeUK study carried out in 2009 showed that 80% of participants surveyed felt that technology would enable them to communicate with others more frequently… "two thirds of 'silver surfers' say using the Internet has improved their lives. Whether it's using Facebook to stay in contact with friends, Skype for international calls to family abroad or using blogs to just have their say, social networking empowers previously isolated older people to stay connected and engaged" says Leonie Viachos, Manager of Digital Inclusion. [49]

A further study showed that the benefits to using the internet could be quite high even if this happened via friends and family.[50] It appeared that there needs to be a 'trigger' to make the elderly feel there is a necessity or good reason for going online. The research gave examples such as "taking up a specific interest or hobby, entering retirement, relatives moving abroad, becoming housebound or losing a partner". Just searching for information can stimulate the brain in positive ways as has been suggested by a research project published in The American Journal of Geriatric Psychiatry where it is said "that Internet searching may engage a greater extent of neural circuitry not activated while reading text pages but only in people with prior computer and Internet search experience. These observations suggest that in middle-aged and older adults, prior experience with Internet searching may alter the brain's responsiveness in neural circuits controlling decision making and complex reasoning."[51]

Another article in several online newspapers corroborated the American research. This research was undertaken by Prof Marco Trabucchi, Chairman of the Italian Association Of Psychogeriatrics, where the headlines stated that "Facebook and YouTube help the elderly keep their brains active and stave off memory loss" The article goes on to discuss how those taking part in communication on line, via services such as Skype and other social networking sites "have more flexible brains than those who don't." Interestingly, although this report has included issues around stress and anxiety as barriers when it comes to the use of ICT, the recent Trabucchi study shows that once those fears have been overcome using social networks can further reduce feelings anxiety and prevent depression as well as foster networks as a form of social support. The researchers also found that by connecting via social

---

[48] http://blogs.ec.europa.eu/neelie-kroes/from-tai-chi-to-telecare-how-we-need-to-value-our-elderly-through-ict/

[49] http://www.ageuk.org.uk/documents/en-gb/myfriendsonline_report_2009.pdf?dtrk=true

[50] http://www.ageuk.org.uk/documents/en-gb/digtial%20exclusion%20in%20later%20life%20-%20research%20report%20final.pdf?dtrk=true

[51] http://journals.lww.com/ajgponline/Abstract/2009/02000/Your_Brain_on_Google__Patterns_of_Cerebral.4.aspx

networks the participants improved their cognitive performance and kept their brains young, stimulating attention span, memory and perception.[52]

However, in 2005 studies were being carried out in the UK and Israel with varying results as can be seen from the quote taken from an academic paper on the subject.

"… elderly people who began using the Internet felt less depressed and lonely, more satisfied with life, more in control and more pleased with their current quality of life than did people who were engaged in other activities for the same period of time. Changes in difficulties with physical functioning, however, were not statistically significant following the intervention. In identifying these effects, the current research is an important addition to the cumulative knowledge on the possible effects of the use of the Internet and computers on the elderly. It should be noted that the conclusions of our research contradict the assertion of a recent comprehensive review by Dickinson and Gregor (2006) who found no consistent and validated effects of computer use by older people on well-being. However, we contend that the results of the current intervention study highlight the specific positive effects of the use of the Internet, on psychological distress in older users."[53]

Finally a report by Independent Age[54] demonstrated that "technology is not merely an end in itself, but can be a means to enable older people to renew and develop social contacts and engage actively in their communities. It can provide opportunities to:

- participate in meaningful work and other activities (whether paid or on a volunteer basis);
- interact in new ways with family and friends;
- learn, develop skills and gather experience;
- share learning, skills and experience with others."

The research went to indicate "that both telecare and local authority digital information services offer significant potential to provide services enabling older people to renew and develop social contacts and become more actively engaged in their communities. Adapting these services could cost relatively little and bring potentially large savings for the public sector because older people are supported and encouraged to be as independent, as active and as engaged as possible for longer."

It should be noted that this section does not have any findings from Austria, Finland, Hungary or Spain due time constraints with PDF translation of documents to English.

[52] http://www.dailymail.co.uk/sciencetech/article-1376507/Facebook-YouTube-help-elderly-brains-active-reduce-stress-depression.html#ixzz1JtqbE0Xp
[53] http://construct.haifa.ac.il/~azy/S333-OlderAdultsInternetShapira.pdf
[54] http://www.independentage.org.uk/__data/assets/pdf_file/0004/4990/gulbenkianReport.pdf

6.**Assistive Technology most commonly used by seniors to access computers**

"We are at a critical juncture. Too many people with disability, literacy, or aging related barriers still do not have affordable access technologies that are capable of handling the new mainstream technologies. In order for these individuals to participate on a level playing field with their peers, our broadband networks and related infrastructure must be accessible and usable enough that all people can take advantage of emerging and future information, applications, and services on the Internet."[55] (Global Public Inclusive Infrastructures, 2011)

Towards an accessible information society Brussels, 1.12.200
"The core group of disabled persons for whom e-accessibility is relevant comprises some 84 million persons in Europe, of which 50 million in the age range 15-64 and 34 million in the age range 65 and above. (Based on Eurostat data)

The diagram below illustrates the diversity of, not only the issues that may arise around the use of technology, but also the sensory and physical difficulties that individuals may have and the types of solutions that may go some way to help them overcome the barriers.

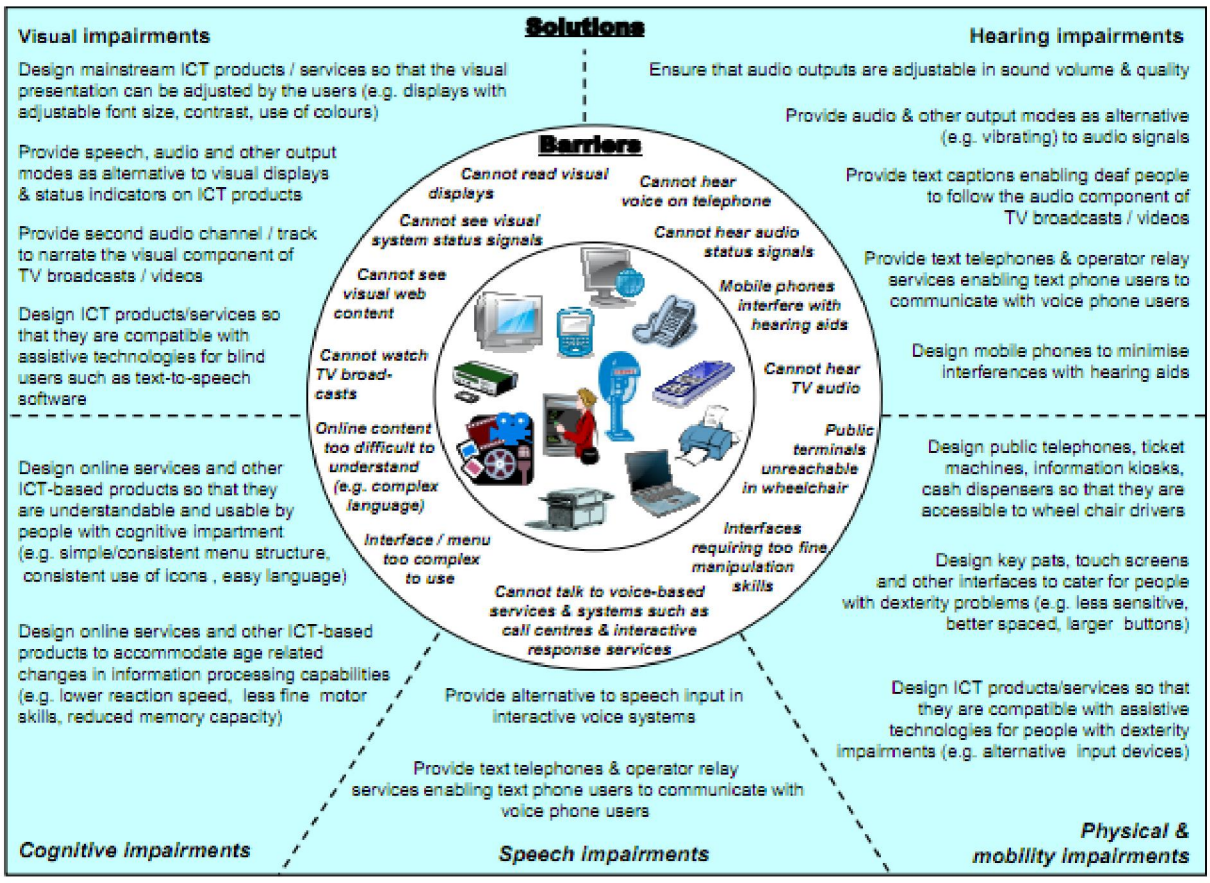


Figure 11 Barriers to e-accessibility and solutions[56]

[55] http://gpii.net/call-action
[56] http://ec.europa.eu/information_society/activities/einclusion/docs/access/comm_2008/staffwp.pdf

Assistive technology (AT) has a very wide remit in terms of supporting independence and well- being for the elderly. It covers not only items related to health (Telehealth/medicine) and assistance (Telecare and Ambient Assisted Living) in the home, but in the case of this report it is about being able to join social networks and use the internet on computers and mobile phones. This is where there is a need for access technologies alongside accessibility (Appendix 3)

The research for this report has already shown that those over 65 have less experience using computers and the internet. Unless they have grown up with a disability requiring the use of assistive or access technology, they are unlikely to have come across the myriad of devices, peripherals and software applications available to aid computer use for online communication.

There does not appear to be any data for the actual number of elderly people across Europe who have used assistive technologies to enhance their online experience. It is hard to find research as to the types of technologies used and their success rate.

The Eastin network[57] was set up as the "most comprehensive information service on assistive technology (AT) serving older and disabled people, their families and carers across the globe" but finding data publicly available as to its use has proved impossible. The project concluded in 2005, although links to each of the national databases appear to have been maintained.

A report carried out for the EU in 2009 found that "the AT ICT industry in the EU certainly is not a simple one. It is complex in various aspects, for example for the large number of products, for the large number of small firms, and for the different service provider systems that are used to get AT ICT products to disabled end-users."[58] Independent Age[59] pointed out there is:

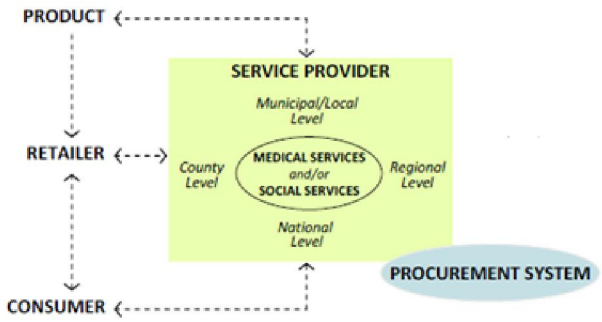
- **"Inadequate marketing**: Technology marketing is generally aimed at the young, promoting gimmicky aspects of products that don't interest older people. Or, marketing is aimed at the frail elderly, a group with which most older people don't identify.

- **Inappropriate design:** Digital equipment is designed to attract young buyers who have grown up using technology. Small buttons, fiddly controls and unnecessarily complicated interfaces can all be barriers to older, or less adept, users. The appearance of 'special' equipment is also a deterrent for some older people who don't want ugly objects cluttering up their homes."

The EU research cited above [56] found that in terms of which of the models companies would like to see growing when it comes to the user purchasing items it was the consumer model as opposed to a social model or medical model for the supply. Twenty five out of the thirty

[57] http://www.eastin.info/home.aspx?ln=en&pg=keynote
[58] Analysing and federating the European assistive technology ICT industry - final report http://ec.europa.eu/information_society/newsroom/cf/document.cfm?action=display&doc_id=606
[59] http://www.independentage.org.uk/__data/assets/pdf_file/0004/4990/gulbenkianReport.pdf

responses agreed that "the assessment and selection of different product solutions should be the right and responsibility of the disabled end-user, and not of the national service provider systems (i.e., the consumer model).



"In this model, the end-user consumer has direct contact with a retailer in order to get his/her AT product and no other intermediaries are involved to limit the solution selected. This system has been gaining in importance in Europe driven largely by the growing costs and bureaucracy generated by the Medical and Social Model systems."

Figure 12 Consumer orientated service delivery model

It is felt that this may not altogether suit the elderly where their knowledge of the market it poor and their understanding of what may suit their needs is unclear. Because of the fragmented nature of the market in Europe the research group[56] used data linked to the US system of Medicare payments where it was found that 5% of the market was made up of items that could be used to support online technologies such as aids for hearing, vision and speech.

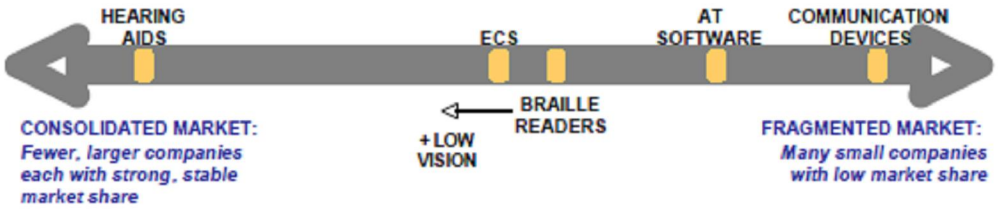


Figure 13. AT ICT Product group summary comparison on fragmentation

It is also possible that with the amount of AT available on the various databases the elderly are likely to flounder in terms of making appropriate choices and receiving the correct training. The databases are not designed specifically with the needs of the elderly and do not include free and open source products or provide guidance to those features already built into the computer or mobile operating systems. The standardisation, universal design, and the mainstreaming of AT may provide many users with just enough support to surf the internet and enjoy social networking without having to purchase expensive versions of AT software.

Many elderly people could possibly cope with the computer interface when icons are enlarged, text sizes increased and mouse pointers are coloured or also enlarged and their speed slowed. This is possible with no extra cost on both Windows and Apple Mac com-

puters. There are also a series of low technology and accessibility options that can be used before advancing to the assistive technologies developed for those with more severe disabilities (Appendix 3)

However, a study undertaken at the University of Dundee "found only 50% of older novice computer users could use Microsoft Outlook Express to carry out basic email tasks like reading a received message and replying to it (Dickinson et al., 2005).[60] This group went on to design a system that would help their elderly participants email friends and relatives. The research illustrated the fact that it is not just the use of assistive technologies that may help users to connect online but also the functionality and accessibility of the interface. Features in the specially designed system included:

Functionality:

- Each screen to have a very clear primary function.
- The number of actions / buttons per screen kept to a minimum (fewer than 10)

Accessibility:

- Larger than average clickable targets (32 and 26 pt size recommended).
- Larger than average fonts (14 point as a minimum).
- High contrast choice of colours for text and background.
- Accessibility features compatible with the W3C guidelines.

User interface paradigms:

- Simple and very consistent select and operate paradigms.
- Clear conventions for the positions of buttons and information.
- No new or poorly established interface paradigms which were unlikely to be understood by the user group.
- Avoid scroll bars if possible, and definitely do not use nested scroll bars.

Terminology:

- Terminology which was understandable by the user group.

Personalisation:

- Some personalisation to allow for people with poor eye sight or dexterity, for example the ability to easily increase text size.

Additions to this list may be input devices that aid stiffness and arthritis such as specialist mice, magnification software which highlights the position of the mouse pointer and cursor, good speakers and headsets to aid hearing and clarity of speech when using VOIP systems.

To answer the question which assistive technologies to support social networking are used by elderly people is difficult with so little research to hand and no national or international statistics. More research is needed.

[60] Dickinson, A., Newell, A. F., Smith, M. J., & Hill, R. L. (2005). Introducing the internet to the over-60s: Developing an email system for older novice computer users. *Interacting with Computers, 17*(6).

7.**Case studies about the aging population related to online usage**

Online, 'a Reason to Keep on Going'
Taken from http://www.nytimes.com/2009/06/02/health/02face.html?_r=2

By STEPHANIE CLIFFORD
Published: June 1, 2009

Like many older people, Paula Rice of Island City, Ky., has grown isolated in recent years. Her four grown children live in other states, her two marriages ended in divorce, and her friends are scattered. Most days, she does not see another person.

Paula Rice, 73, had been "dying of boredom" before discovering social networking sites. She spends up to 14 hours a day on the sites.

But Ms. Rice, 73, is far from lonely. Housebound after suffering a heart attack two years ago, she began visiting the social networking sites Eons.com, an online community for aging baby boomers, and PoliceLink.com (she is a former police dispatcher). Now she spends up to 14 hours a day in online conversations.

"I was dying of boredom," she said. "Eons, all by its lonesome, gave me a reason to keep on going."

Myfriends Online - press release February 2009[61]

[61] http://www.ageuk.org.uk/documents/en-gb/for-professionals/computers-and-technology/myfriendsonline%20report%20-%202009_pro.pdf?dtrk=true

Social networking is good for you, says Age Concern

Recent claims about the potential risks of social networking have ignored evidence that getting online has positive benefits for older people, says Age Concern.

'Our research shows that over two thirds of 'silver surfers' say using the Internet has improved their lives. Whether it's using Facebook to stay in contact with friends, Skype for international calls to family abroad or using blogs to just have their say, social networking empowers previously isolated older people to stay connected and engaged' says Leonie Vlachos, Manager of Digital Inclusion.

Age Concern regularly runs IT events throughout the UK to encourage older people to get online and learn basic computer skills. Two thirds of new IT users aged 55 plus agree the Internet had a positive impact on their lives.

After her husband passed, Doreen, 70, of Leeds, began to experience loneliness and feelings of social isolation. Doreen credits an IT course with Age Concern Leeds with helping her overcome this loneliness and opening up a new world of opportunity.

'Social Networking lets me stay in contact with my family abroad and also my friends locally. I've even made some new friends online! I encourage any older people who are feeling isolated or lonely to try social networking' says Doreen.

To encourage older people to find about the social and health benefits of becoming socially connected online, Age Concern is running myfriends online week beginning 16 March 2009.

The week is a chance for older people to learn how social networking can benefit their lives, and also encourages younger social networking users to share their expertise with older people.

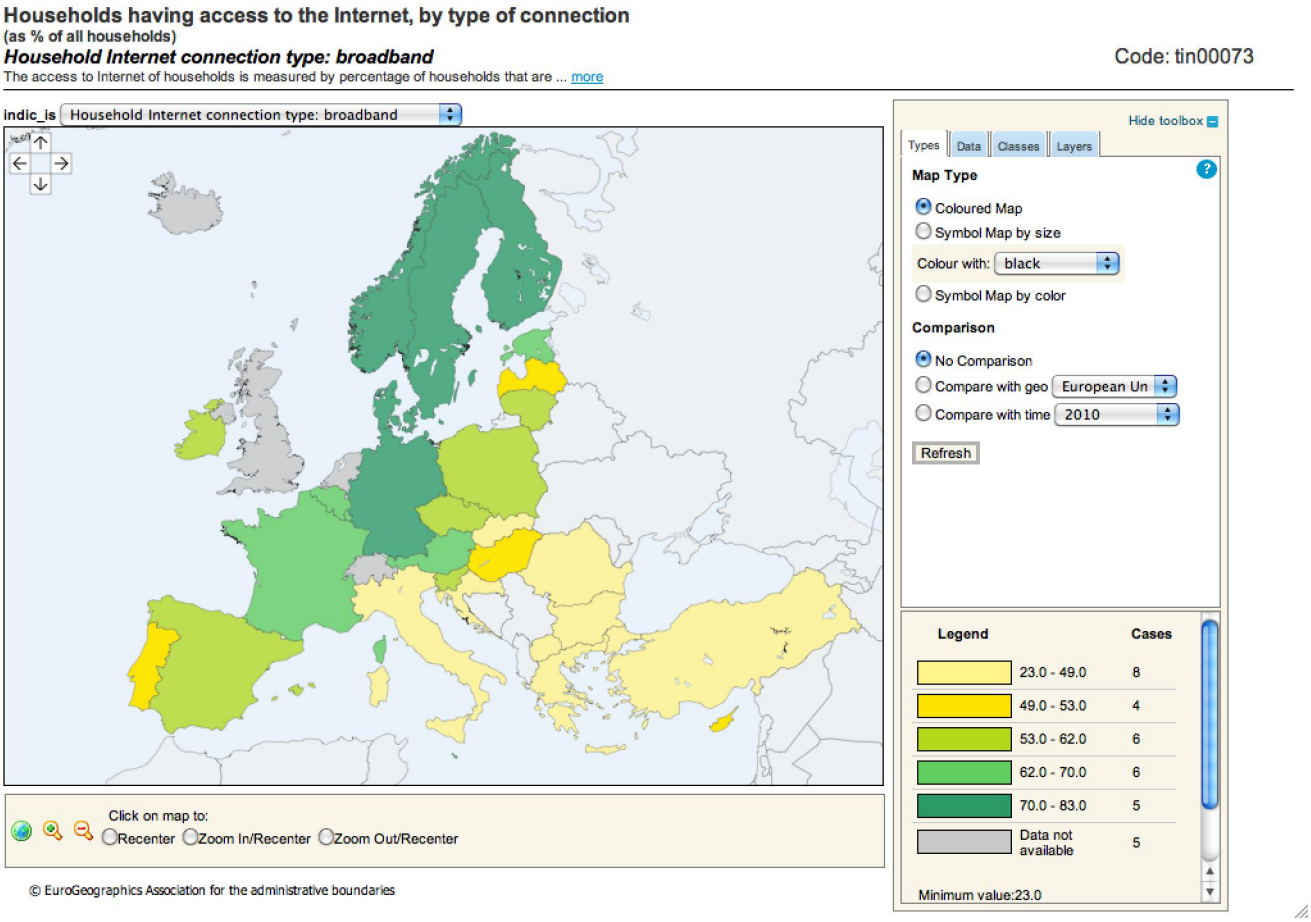
To arrange an interview with Doreen about how social networking helped her overcome loneliness, or an Age Concern spokesperson about Digital Inclusion please contact John Ratchford on 0208 765 7513.

Notes for editors

1. A 2008 study from the University of California Los Angeles found use of the web stimulated centres in the brain that controlled decision-making and complex reasoning. The study published in the American Journal of Geriatric Psychiatry also said Internet use for older people may even help counteract age-related physiological changes that cause the brain to slow down.
2. Age Concern has worked in partnership with BT since 2005 to tackle social exclusion among older people by promoting digital inclusion. myfriends online week is one of a number of partnership activities running throughout 2009.

Appendix 1

Households having access to the Internet by type of connection.



Appendix 2
Age UK Computers and Technology Briefing (last updated November 2010)

Computers & Technology Briefing

This briefing explores technology and older people. It addresses two very distinct topics: internet use among older people, and the use of technologies in addressing the health and care needs of older people.

Internet Usage[1]

60% of the 65+ age-group in the UK in 2010 have never used the internet. This equates to approximately 6 million people. In the 55-64 group, it is 22%, compared to the 16-24-year-old figure of 1%.The 65+ figure is dropping more rapidly than others, however, from 54% in 2009 and 70% in 2008.

32% of all adults aged 65 or over (about 3.2 million) have used the internet in the last 3 months, compared to 72% of 55-64s and an all-age average of 77%. The 65+ figure is rising fastest in this category (from 26% in the last 3 years). The lower 65+ figure partly reflects the fact that fewer in this age-group have access at the workplace.

Where people in later life do have access to the internet, 59% of 65+ and 74% of 55-64s use it every day. Although this is a little lower than the all-age average (78%), it has been rising steadily since 2008.

In the 55-64 and 65+ age-groups (as in the all-age average), the most common uses of the internet are sending/receiving e mails, finding information, and using services for travel and accommodation.

58% of people aged 55-64 in the UK purchased goods over the internet in the last year (2009/10) and 22% of people aged 65+, compared to an all-adults figure of 62%. However, the rise since 2008 is higher in these older age-groups than the average.

For the 55-64 age-group, the most popular purchases on the internet were holiday accommodation (47% of all those who ordered goods online in the last 12 months), clothes and sports goods (43%), books, magazines, and newspapers (41%), and household goods (39%). For the 65+ age group, they were holiday accommodation (44%), books, magazines, and newspapers (40%), clothes and sports goods (38%), and household goods (37%). Also prominent for both these age groups was travel arrangements (transport, tickets, car hire).

29% of people aged 55-64 in the UK and 20% of people aged 65+ downloaded films and music from the internet, rather than by post, in the last twelve months (2009-2010), whilst 17% of 55-64-year-olds and 15% of 65+ did so for (e)books, newspapers, magazines and learning materials.

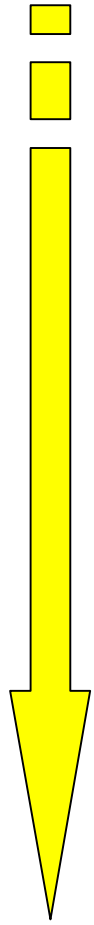
Using Technology to Address the Care Needs of Older People

Telecare and telehealth are two terms used to describe the use of technologies in addressing older peoples' care needs.

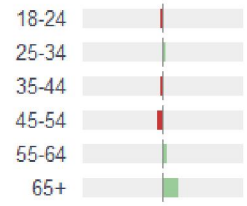
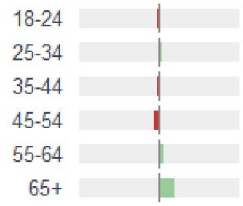
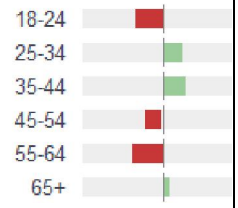
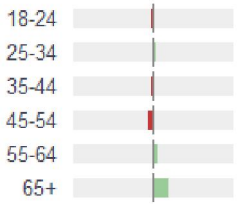
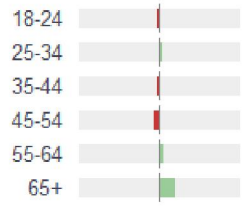
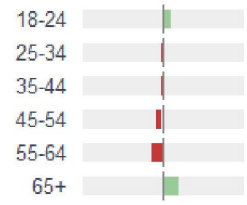
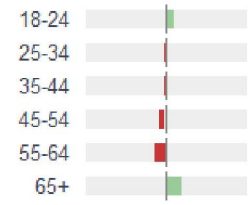
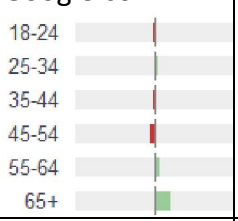
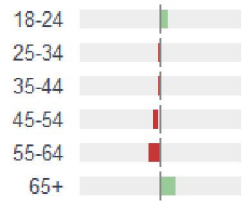
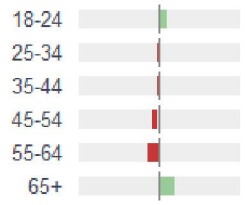
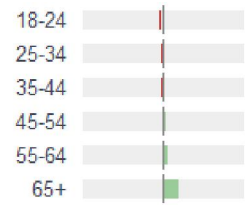
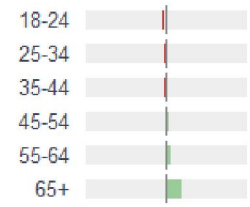
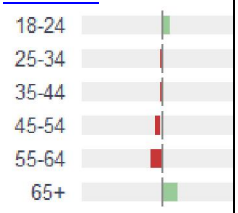
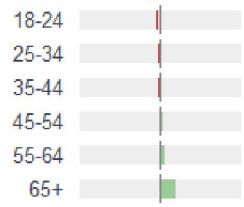
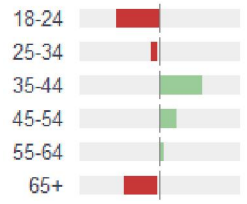
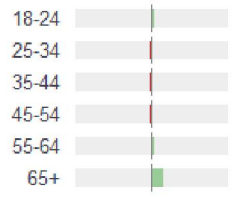
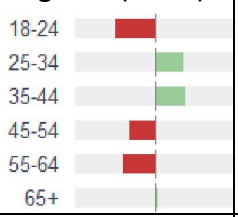
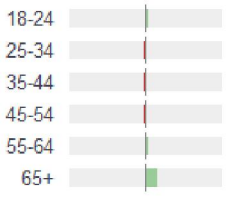
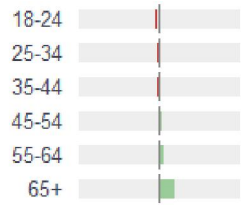
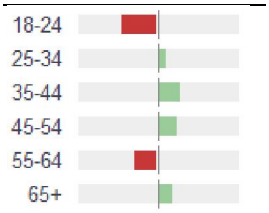
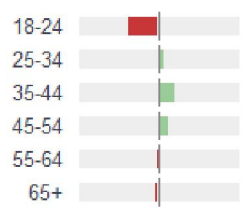
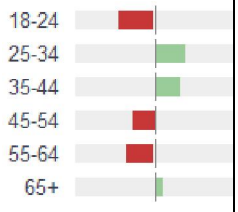
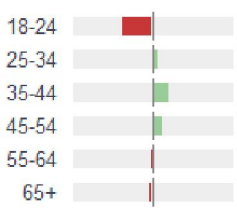
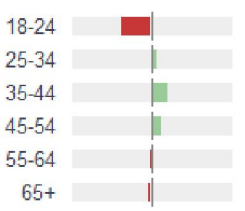
Telecare can be divided into three "generations". The first generation is comprised of user-activated community alarms (social alarms). The second generation revolves around home monitors – sensors that monitor the home environment, vital signs and physiological measures, which are, in turn, typically linked to a monitoring centre. Third generation telecare involves the use of communications technology (broadband, wireless, audiovisual) to allow virtual or tele-consultations between the
62 service user and a doctor, nurse or support worker.[2]

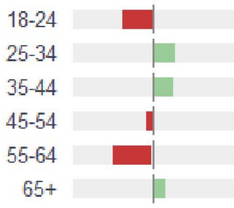
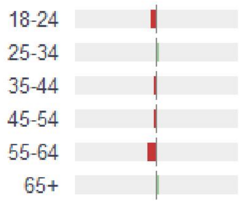
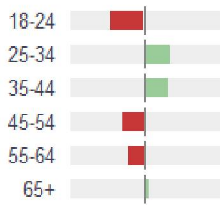
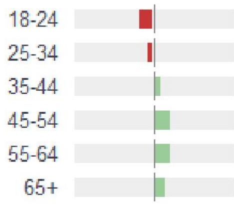
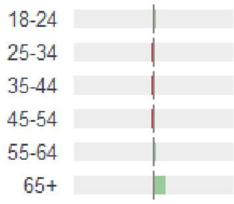
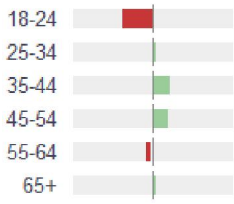
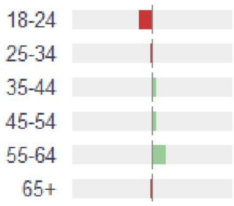
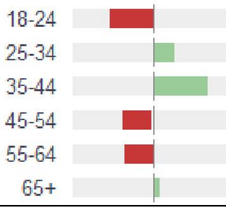
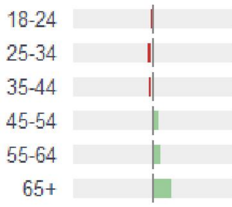
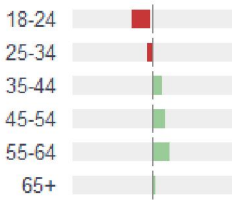
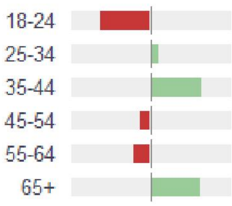
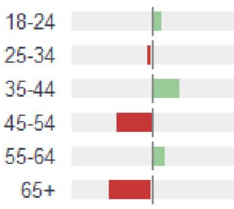
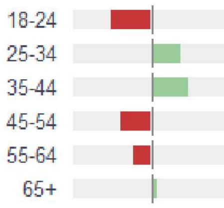
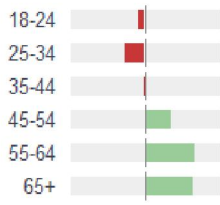
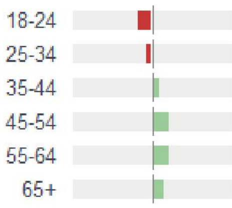
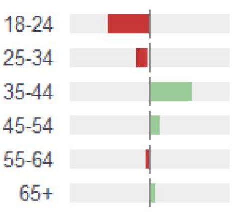
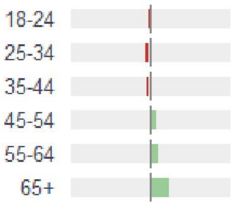
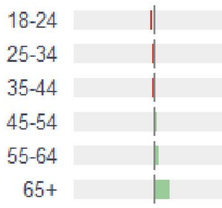
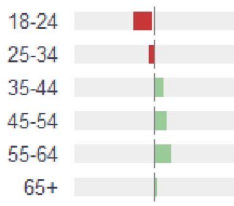
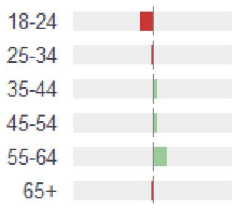
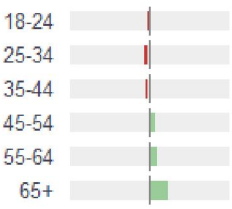
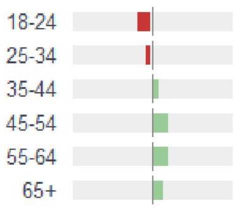
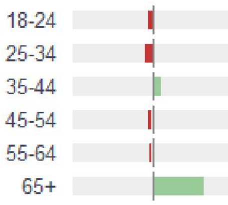
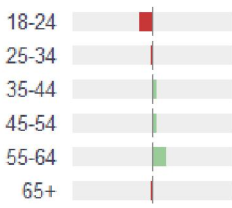
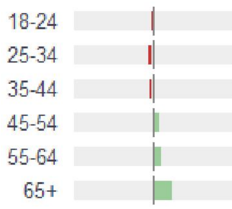
62 http://www.ageuk.org.uk/documents/en-gb/for-professionals/topic%20briefings/computers%20and%20technology%20topic%20briefing.pdf?dtrk=true

Appendix 3

Accessibility and Assistive Technologies that may be helpful to the overs 60s when online and using social networks.				
Low to High Tech	***Hearing***	***Vision***	***Dexterity***	***Mobility***
	Clear written language	Large clear written text	Limit scrolling	Limit scrolling
	Visual signals for sound alerts	High contrast text	Easy navigation	Easy navigation
	Headset and amplification of sounds	high contrast keyboard stickers Personalise computer access	Personalise computer access using built in systems	Personalise computer access using built in systems
	Personal listening devices set to work with computer or mobile	Zoom within browser or built in magnification	Keyboard alternatives	Arm/wrist support Keyboard/mouse adaptations/guard
	Use texting and email rather than VOIP (Skype)	Low end magnification software with mouse / cursor highlighting.	Mice alternatives	Mouse/keyboard onscreen software
	Captioning for videos	Magnification software	Word prediction/word bank software	Word prediction/word bank software
	Loop amplification systems if external media	Screen Reading software	Onscreen keyboard software with prediction	Remote/switch controls
		Braille/Tactile processes	Speech recognition	Head/eye/brain pointer systems
				Total Speech recognition control

Appendix 4

	Austria	Finland	Hungary	Spain	UK
Top 10 web sites used by 55+	Audience Demographics for each site with graph showing relative to **the general internet population** how popular the site is with over representation to the right (green) and under to the left (red) (Alexa web traffic metrics, search analytics http://www.alexa.com/) The order of the sites is taken from the order that they appear on the list for all users in each country, but just those that show near normal or over representation in the 55+demographic have been shown				
1	Google.com 	Google.com 	google.co.hu 	Google.com 	Google.com 
2	YouTube 	YouTube 	Google.com 	YouTube 	YouTube 
3	Yahoo.com 	Yahoo.com 	YouTube 	Yahoo.com 	BBC online 
4	Ebay österreich 	msn.com 	origo.hu (news) 	msn.com 	Yahoo.com 
5	willhaben.at (selling and buying) 	Linkedin.com 	freemail.hu 	Linkedin.com 	Linkedin.com 
6	Gmx email,news portal, shopping	BBC online	t-home.hu (internet and TV services)	Bing.com	msn.com hotmail & messaging

					
7	Spiegel Online newspaper 	Amazon.com 	vatera.hu (Shopping) 	Microsoft Corporation 	Paypal.com 
8	sparkasse.at savings bank 	ilmatieteenlaitos.fi (weather) 	port.hu (TV guide) 	Ask.com 	Bing.com 
9	kurier.at news 	Microsoft Corporation 	Yahoo.com 	Paypal.com 	Amazon.com 
10	Microsoft Corporation 	Bing.com 	Citromail.hu (email) 	Amazon.com 	Microsoft Corporation 

Top websites used by those aged over 55 in each country.

APPENDIX 5 Examples of Scenarios

Retired Professional:

Franz is 68 years old and used to work as veterinary surgeon at the countryside of Austria with special knowledge on llamas. Because a good friend of him, Alfred, was a llama grower he gathered a lot of experience with these animals and their particular problems. Since his retirement three months ago he feels more and more bored and useless. His wife is ten years younger than Franz and works a lot. They have two children that are grown up and live in other cities but no grandchildren yet. He constantly meets his friend Alfred for a beer in the local pub. While sitting together once Alfred tells Franz about this new platform he uses: SENIORENGAGE. He receives many questions from young llama growers and gives them advice for improving their success. Alfred enjoys the communication with the inexperienced llama growers and is happy that he can help them. He suggests Franz to join Senior Engage as well. Franz is sceptical about the internet and wonders whether he is able to handle this new technology. His son convinced him a while ago to get connected to the internet and therefore presented him his old notebook but neither Franz nor his wife use it on a regular basis. Alfred recommends Franz to do the tutorial, which will show him how easy it is to use SENIORENGAGE. Finally Franz decides to give SENIORENGAGE a try and the tutorial guides Franz through the registration process and helps him to set up his profile. Franz joins the group "Veterinary Surgeons". After a while he reads the request of Julia. Immediately a similar case comes to his mind where he finally healed a llama successfully. So he writes Julia and offers her that she can call him to discuss this phenomenon. Later on Julia calls and they talk on the phone and analyse the problem. At the end he gives some advice how to heal the llama. After the call Franz feels lucky and is glad that he could help. Franz receives a mentor buddy request from Julia that he accepts and they remain in contact for further discussions about llamas as well as other animals.

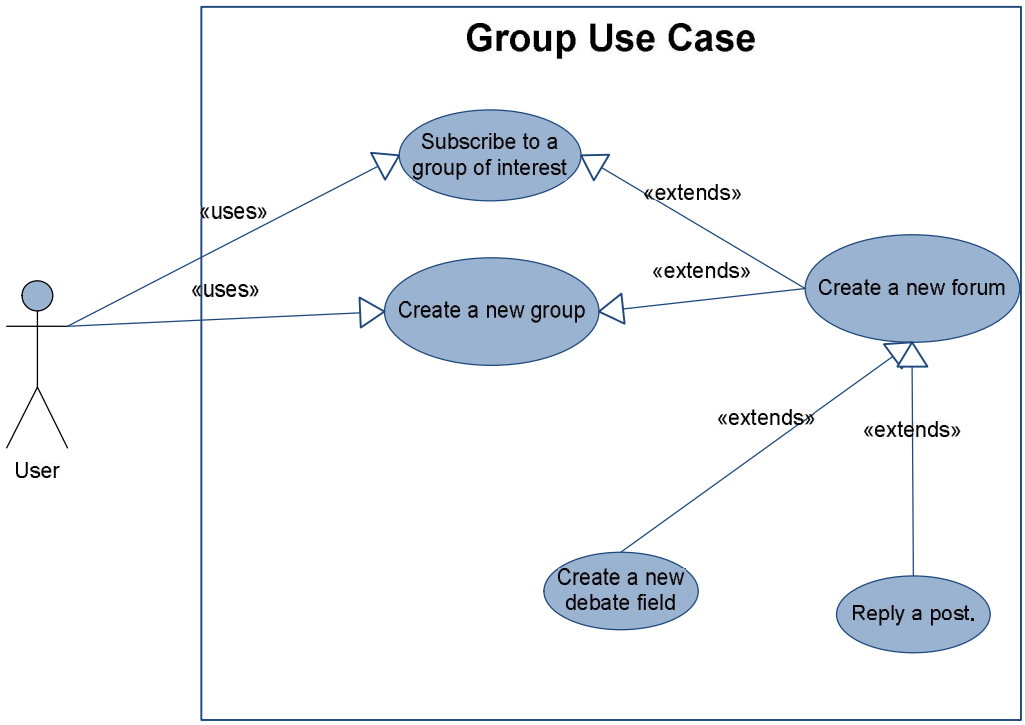
Young Professional:

Julia (28 years) is a young country veterinary surgeon with profound knowledge in treating the animals at countryside. She finished her studies three years ago and after working two more years as assistant she took over the practise of a retired veterinary surgeon in her ancestral village. One day she is asked to come to a little farm to look at a sick llama. For some days the llama has got a green tongue and the farmer has no idea for what reason. When Julia looks at the llama, she is clueless, what might have happened to the llama and how to cure it. She remembers that a while ago someone told her about SENIORENGAGE - a platform where retired professionals could be asked for help. Julia registers quickly and posts a request in the group "Veterinary Surgeons" and hopes that someone might help her. The request appears at the Message Board of everyone registered in the group. After a while she receives an answer from Franz who offered her a call. Due to his profile he seems to have a lot of experience with llamas and she calls him. They talk on the phone and analyse the problem. At the end she receives some valuable hints. There seems to be cure for the llama. Julia is lucky and sends a mentor buddy request to Franz later on. Franz becomes her mentor in llama questions. Later on they also discuss about other animals. The professional exchange

between Julia and Franz develops and communication breaks down to a more social level.

APPENDIX 6 Use cases conducted from scenarios

- **Groups**: The system will facilitate the creation of groups of users with similar interests, working groups, research groups, etc. With these objectives the user could:
    - Subscribe to a group of interest
    - Create a new group: fill group description, keywords tag
    - Open a new forum inside a group
    - Create a new debate field inside a group forum
    - Comment a post.



- **Document and media repository:** The system will offer a document repository where all the digital information uploaded could be search. In this line the user could:
    - Search an specific document or media: search by words (keywords, thematic)
    - Upload new content: brief description, associated to an specific group, tagged it, keywords
    - Comment a document or media uploaded

In order to offer a searchable content and a profile matching metatags and keywords are required. This information will be included in the document repository (plain text, media content) in the user profile, and in the groups description