Online Communities and the Activation, Motivation and Integration of Persons Aged 60 and Older

A Literature Review

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Table of Contents

1   Summary

The share of older adults who are online has risen sharply in the course of the last ten years. Nevertheless, older adults continue to use the internet and online communities far less frequently than younger age groups (Zickuhr, 2010; Initiative D21, 2010; European Commission, 2010). It is important to note that the use of online technologies does not only differ according to age but also according to gender, physical challenges, marital status and level of education. In the case of older adults, there is a frequent interaction between these different factors, which can result in new disadvantages (Godfrey & Johnson, 2008).

Online communities provide a virtual social space where people come together to engage in multiperson social communication, which leads to an organic growth of information. Communities in general create a "sense of community" (McMillan & Chavis, 1986), which is an important prerequisite for mutual trust and the readiness to engage in volunteer activity (Omoto & Snyder, 2002). A functional approach to online communities allows for a distinction of communities of interest, communities of practice, knowledge communities, communities of relationship, and business communities. There are diverse approaches to explaining the motivation of members of online communities. Kollock (1999) believes most interventions in online community to be based on either egotistic or altruistic motives. According to Bishop's (2007) ecological cognition framework, persons are motivated to participate in an online community if such a behavior is in line with their desires and cognitions and if they possess the means and abilities to interact with their environment. Learning theory would suggest that once a person has started to engage in an online community, positive reinforcements (e.g. social approval) can help keep the level of motivation high. Theories of social exchange suggest that a person is motivated to contribute to an online community if the probability of personal benefit is assumed to be high (Butler, 2001). Opportunities for learning and experiencing flow are also factors that support personal motivation.

Many authors see the main reasons for older adults' non-use of the internet in "misconceptions" about the internet. That is, the internet is viewed as being dominated by pornography and illegal activities (Lenhart et al., 2003; Eastman & Iyer, 2004). Moreover, there is a widespread attitude among older adults that the internet should be left to the younger generations (Morris, Goodman & Brading, 2007). While well-designed courses and innovative learning initiatives have proved to be successful, it should be kept in mind that in order to develop an interest in computers and the internet, older adults need to see the very practical benefits that computers and the internet have to offer. Subject matters that are relevant to many older adults include communication with family and friends, general interests and hobbies as well as social interests. Internet non-use can also be rooted in perceptions of inadequate efficacy and computer anxiety (Adams, Stubbs & Woods, 2005). Obviously, functional impairments can also be causes of non-use of the internet (Kurniawan, King, Evans & Blenkhorn, 2006).

Concerning online communities, most barriers are related to problems of sociability or usability (Preece, 2001). Sociability includes the purpose of the community, the ways in which people are allowed to interact and, finally, community governance, which is characterized by formal and informal policies. Usability, on the other hand, refers to the easiness and intuitiveness with which the technology of the online community can be learned and used. Because of their very nature as virtual social spaces, questions of sociability may be more relevant for non-participation in online communities than questions of usability. Potential problems include a lack of trust, free riding and insufficient membership stability (Matzat, 2010). In addition, many older adults have reservations against using the internet as a place for meaningful social exchanges (Lehtinen, Näsänen & Sarvas, 2009).

Successful activation of older adults is reliant on a change of perspective (Stadelhofer & Marquard, in press). Instead of demanding that they learn how to use the internet, the existing competences of older adults need to be taken into account when designing initiatives for e-activation and –integration. I.e. instead of asking older adults to adjust to new technologies, internet initiatives need to be tailored to the needs and interests of older adults. This line of thought culminates in Selwyn's (2004) demand that older adults be given a greater say in the development and design of ICT. However, the diversity of the target group "older adults" should not be underestimated (Oehmichen & Ridder, 2010). Approaches based on techniques of social persuasion (Zimbardo & Leippe, 1991) posit that participation in online communities can be stimulated if relevant attitudes, cognitions, and behaviors are addressed with a persuasive message. In order for a person to be ready to engage in participatory behavior, non-participation would have to be cognitively dissonant with existing beliefs, plans or values (Bishop, 2007).

Sustainable online communities are those that consistently provide access to a pool of resources and guarantee that this access translates into benefits for participants (Butler, 2001). In this context, the relationship between the size of an online community and the amount of active participation is complex. Large online communities are attractive because they have more resources. On the other hand, large online communities face more problems of unreliable social relationships. Thus, online communities that have risen above a certain size tend to become less active (Ridings & Wasko, 2010).

The way in which an older adult is affected by the internet is dependent not only on age but also on a number of other factors including socio-economic status, level of education, personality, experiences of self-efficacy and personal biography (Mosler, 2010). Results of studies on positive effects of internet use are mixed. There is evidence that the use of online communities can help cope with stress (Wright, 2000). Moreover, Blit-Cohen & Litwin (2004) identify three positive effects of computer and internet usage by older adults, namely 1) an expansion of connections to their social network, 2) a better integration into the current social discourse and an orientation towards the future, and 3) a frequent attribution of human traits to the computer, i.e. a perception of the computer as enabler of

"good things". On the other hand, randomized controlled studies have failed to prove that computer training and internet use have measureable effects on cognitive functioning, wellbeing, autonomous living and the social network (Slegers, 2006; Slegers, van Boxtel & Jolles, 2007; Dickinson & Gregor, 2006).

Sociability and usability (Preece, 2001) are key factors for the success of an online community. Other important elements tend to vary according to the function of an online community. For instance, quality assurance is of crucial importance for a knowledge community but much less so for a community of relationship. With regard to the integration of older persons, Pfeil, Arjan & Panayiotis (2009) point out that older users tend to be more reticent in the use of extra features than younger ones. Moreover, they prefer the use of more formal language. Finally, Matzat (2010) reports evidence that online communities that are embedded in an offline network tend to show fewer problems of sociability. Nimrod's (2010) quantitative analysis identified the most important themes being discussed in seniors' online communities. The most popular theme appeared to be "fun", followed by "retirement" and "family".

2   Introduction

The TAO project aims at facilitating and promoting access of older persons and persons in early retirement to online social communities and online collaboration projects. The project's foremost objective is to bring about a win-win-win-situation: Older persons are expected to profit in terms of social and human capital (health and well-being, but also skills and know-ledge), improved possibilities for online activities, and a larger array of online content which is targeted at their needs. Existing online communities are expected to profit in terms of in-creased participation as well as in terms of a qualitative improvement of their products and/or their social interactions. And finally, society as a whole is to profit from improved social and human capital among older persons, from improved inter-generational relations as well as from the expected boost in "open" production and the creation of new opportunities for older persons to put their knowledge and rich life experience to use.

The aim of this paper is to give an overview of the relevant literature on the use and non-use of online communities by persons aged 60 and above and to learn about effective strategies of activation, motivation, and integration of older persons in this context. Starting with a brief overview of older adults' current usage of the internet and online communities (chapter 2) we will secondly discuss the term community and definitions of online communities in order to arrive at a differential perspective of online communities according to their function (chapter 3). This will be followed by a discussion of motivational aspects of participation in online communities and potential benefits of such a participation (chapter 4). While the focus of chapters 3 and 4 is not exclusively on older persons, this is clearly the case in chapter 5, which deals with the reasons for non-use of online communities by older persons. Chapter 6 discusses strategies of member integration, activation and retention. Chapter 7 reports findings on the effects on older persons of using online communities and the internet in general. In chapter 8 an effort is made to name some criteria that online communities should take into account if they want to be successful – especially in reaching out to older persons. Conclusions based on the reported findings are drawn in chapter 9.

3   Older Adults' Use and Non-Use of the Internet

The most basic precondition for an active participation in online communities is the use of the internet. However, Lenhart et al. (2003) found that in 2002 42% of Americans aged 18 and older did not use the internet. The percentage of persons aged 65 and older who were online was 18%. Lenhart et al. (2003) divide non-users of the internet into three subgroups which they label 1) net evaders (8%), 2) net dropouts (10%) and 3) truly disconnected (24%). Net evaders live in a household where another person has internet access. They benefit from the internet by using the services of those other persons. Net dropouts used the internet at an earlier point in time. Frequently, they have stopped doing so due to technical problems. Only the truly disconnected have never had direct nor indirect experiences with the internet. However, the perception that persons are either online or offline is too simple. The authors prefer the use of the term "spectrum of internet access". This expression underlines the fact that also among onliners there are persons who use the internet only intermittently (16-28%).

As reported in the Pew Research Center's Generations report (Zickuhr, 2010), in 2010 79% of all American adults were online. The percentages of persons online were 76% for ages 56-65, 58% for ages 65-73, and 30% for ages 74 and older. Older generations in the United States have continued to make notable gains in the use of internet activities. Their participation in online communication and entertainment activities has shown one of the fastest growth rates in recent years. This is especially true for the use of social network sites where the rate of active users aged 74 and older has risen from 4% to 16% since 2008. While 61% of Americans aged 18 and older use social network sites the respective percentages for older adults are 43% for ages 56-64, 34% for ages 65-73 and 16% for ages 74 and older.

In Germany, in 2010 72% of Germans aged 14 and older were online (Initiative D21, 2010). However, the share of onliners drops markedly for the ages 60-69 (54%) and 70 and older (23%). There is also a striking difference to be seen between men and women: While 80% of men in the ages 50-59 are online this is true for only 65% of women. In addition, the rates of internet usage among persons aged 50 and older is clearly lower in the Eastern part of Germany. As Busemann & Gscheidle (2010) show, only 4% of internet users older than 60 use an online community once a week and only 6% have ever had contact with an online community. And of that same group only 12% indicate an interest in actively authoring content and sharing it on the internet compared to a share of 22% of all internet users in Germany.

In Switzerland, in 2010 84% of the population aged 14 and older had used the internet at least once during the past six months (Bundesamt für Statistik BFS, 2010). 77% indicated that they use the internet several times per week. Age differences in usage are striking: While the frequency of using the internet is still at 79% in the ages 50-59, it drops to 58% in the ages 60-69 and to 26% in the ages

70 and older. In addition, regular use of the internet is more common among men (84%) than among women (71%).

In the Netherlands, in 2010 91% of households had internet access at home (European Commission, 2010). 88% of individuals aged 16-74 accessed the internet at least once a week. There are no official numbers for European citizens aged 75 and older.

4 Definitions of (Online) Communities

Omoto & Snyder (2002) define a community as a psychological entity or conceptualization, rather than a geographically bounded area. An important feature of such a psychological community is the existence of a sense of community, which can be described as a feeling of belonging, connection, confidence and esteem that is attached to a psychologically identifiable community or grouping.

Although the academic debate about what defines a 'sense of community' is ongoing, it is advantageous to consider communities in such a psychological sense. This conceptualization comprises the aspects of membership (sense of belonging), influence (refers to mutual influence among members), integration and need fulfillment (the community fulfills members' needs, including need for status, success and protection) and shared emotional connection (value of shared experiences). The sense of community contributes to individual and collective action: members tend to feel obligated to work on behalf of the community, and to be good team players. Moreover, a sense of community increases people's readiness to engage in volunteer activity (Omoto & Snyder, 2002).

McMillan & Chavis' (1986) model of Sense of Community has sparked a large amount of research and is empirically well validated. Recently, Peterson, Speer & McMillan (2008) delivered evidence through confirmatory factor analysis for the four dimensions of the model, which include needs fulfillment (the community meets members needs), group membership (best characterized as a feeling of belonging), influence (the sense, on the one hand, that one can make a difference and, on the other hand, that the community is important to its members), and emotional connection (a feeling of attachment, which is based on members' shared history and experience).

In a reappraisal of McMillan & Chavis' (1986) model, McMillan (1996, p. 315) mentions the following four elements as characteristic of a sense of community. 1) a spirit of belonging together, 2) a feeling that there is an authority structure that can be trusted, 3) an awareness that trade, and mutual benefit come from being together, and 4) a spirit that comes from shared experiences that are preserved as art. Art, in this sense, symbolizes a collective heritage (e.g. in song and dance). The spirit of belonging together is dominated by a feeling of friendship between members of the community. This creates a setting which allows community members to express unique aspects of their personality (McMillan, 1996, p. 315). Members of a community can be themselves and can see themselves mirrored in the eyes and responses of others (p. 316). McMillan (1996, p. 316) believes that "the first task of a community is to make it safe to tell "The Truth"". This is dependent on a number of preconditions, namely community empathy, understanding, and caring. In a community that is built on trust there exists a certain order (McMillan, 1996, p. 319). It is a community that has norms, rules, or laws. This order allows members to predict, plan, and commit. In fact, a sense of personal mastery (McMillan, 1996, p. 319) is only possible if one knows a community's norms and laws. McMillan (1996, p. 321) makes it clear that communities establish a "social economy", which is based on shared intimacy. The unit of exchange in this economy is self-disclosure. The value of a trade can be

measured according to the personal risk involved in self-disclosure. McMillan (1996) is convinced that this risk is only taken on if community members feel safe from shame.

There is no commonly agreed on definition of online community. Nevertheless, it seems helpful to mention some of the commonalities of online communities as well as some of the criteria that have been used to distinguish different types of online communities. We can start out by using the broad definition provided by Preece (2001) who defines online community as "any virtual social space where people come together to get and give information or support, to learn, or to find company. The community can be local, national, international, small or large" (p. 3). To Döring (2001, quoted from Schaffert & Wieden-Bischof, 2009, p. 11) an online community is an alliance of people with common interests who exchange information and build contacts on a regular basis and with a certain reliability [my translation].

Schaffert & Wieden-Bischof (2009) propose that an online community consists of persons with common interests who use the internet and other communication technologies for regular exchange and/or to jointly develop content. They thereby develop strong mutual attachments and experience themselves as belonging together (p. 12) [my translation]. Online communities are virtual communities because they use the computer as medium to carry out the activities that define their community.

From Preece's (2001) definition we can derive that what all online communities have in common is the provision of a virtual social space where people come together. What is also common to today's online communities is the possibility to engage in multiperson social communication. What takes place in an online community is normally a many-to-many communication. Thus, today's online communities provide users with the facilities to produce "significant social activity" (Butler, 2001, p. 346). The central mechanism of a web 2.0 application is that the activity of users leads to an organic growth of information. One could call this the collective intelligence of the network. Persons with information needs can pose fully phrased questions to a community. This clearly differs from the search process applied to a search machine where frequently the format of the required information must be defined beforehand (Godfrey & Johnson, 2008, p. 638).

Let us now turn to the question of distinctive features of different online communities. One criterion by which online communities can be distinguished – at least to a certain extent – is their function. Accordingly, one could ask for the main purpose that an online community is supposed to fulfill. In this respect, Preece's (2001) definition offers the following elements: 1) exchanging information and/or support, 2) learning, 3) social interaction (finding company).

Exchange of information and/or support usually takes place inside the boundaries of specific topics in which the members of a community share a common interest (e.g. health). Hagel & Armstrong (1997) used the term "community of interest" for communities with that kind of main purpose. While learning is certainly an aspect of communities of interest it need not be their main focus. Knowledge communities (Bürbaumer & Mellacher, 2009), on the other hand, can be defined as just that, namely communities who engage in communication in order to acquire and provide knowledge – usually

about a specific topic. Communities of practice (Wenger et al., 2002) can be localized at the borderline of online communities of interest and online communities of knowledge. Their main purpose is, on the one hand, to provide information and support among a like-minded group of persons (often professionals) and, on the other, to facilitate mutual learning. The term practice indicates that members of the community engage in a common – usually rather complex and frequently professional – activity.

What draws members to online communities of the mainly socially interactive kind is the possibility to get into and stay in contact with persons they know and like and to meet new persons who appeal to them. Often members are offered the chance to follow up and comment on each others' activities. Hagel & Armstrong (1997) would call these communities "communities of relationship". Some communities of relationship are limited to specific societal groups. For instance, there are online communities aimed specifically at older persons. This relationship-oriented type of online community is sometimes also referred to as an online social network. Online social networks are online communities that emphasize affiliations of its members (geographical, shared background, common social interests) more strongly than their topical interests. Online social networks can also be characterized in terms of their form of information exchange. It is "ad hoc, informal, personal, often anecdotal, largely unregulated and potentially unreliable" (Godfrey & Johnson, 2008, p. 638). Nevertheless, Godfrey & Johnson (2008) believe that online social networks have the "potential for empowering individuals and citizens and developing and strengthening communities..." (p. 638).

Table 1: A distinction of online communities according to their function

Type of online community	Main function	Predominant form of communication	Content	Examples
Communities of interest	Exchange of information and support concerning a specific topic or a cause	Informal; personal	Advice, reports mostly based on personal experience; potentially unreliable	progressiveexchange.org haustiercommunity.de
Communities of practice	Exchange of information and support and mutual learning concerning a profession or a practice	Formal; expert discussion	How-to-information; instructions, guidelines; best practices	myplan.com/careers/chiropractors/community-29-1011.00.html

Type of online community	Main function	Predominant form of com- munication	Content	Examples
Knowledge communities	Collection and retrieval of information; knowledge management	Formal; expert; impersonal	Structured, reliable, factual information	community-of-knowledge.de
Communities of relationship	Staying in touch; making new social contacts	Informal; personal; conversational, "chatty"	Personal information; conversations; potentially unreliable	facebook.com
Business communities	Creation of value for businesses and customers	Professional; client-customer communication	Information about products, business partners and customers	smallbusinessonlinecommunity.bankof america.com/index.jspa

5 The Motivation to Participate in an Online Community and the Potential Benefits of Participation

Kollock (1999) sees most interventions in online communities as being driven by either ego-tistic or altruistic motives. Motivation can be defined as "[a] driving force or forces responsible for the initiation, persistence, direction, and vigour of goal-directed behaviour. It includes the biological drives such as hunger, thirst, sex, and self-preservation, and also social forms of motivation such as need for achievement and need for affiliation" (Oxford Dictionary of Psychology, 2009). In the context of online communities, it seems plausible that one of the driving forces for active participation would be a need for affiliation, i.e. "[a] social form of motivation involving a need to seek out and enjoy close and cooperative relationships with other people, and to adhere and remain loyal to a friend" (Oxford Dictionary of Psychology, 2009).

According to Bishop (2007), what makes online communities attractive is that they offer their members a space to engage with others in participatory behaviors that are in line with important desires, plans, goals, values and beliefs. Bishop (2007) postulates that members of online communities carry out actions based on their desires. He divides these desires into five main categories, namely social, existential and creative desires as well as a desire for order and for vengeance. Bishop believes that desires lead to plans, which need to be consonant with existing plans as well as a person's goals, values, and beliefs. He believes this approach to be advantageous of approaches based on hierarchical needs models such as Maslow's (1943, quoted by Bishop, 2007, p. 1882) and of approaches that believe community members to be mainly goal-driven. In the context of online communities hierarchical needs theory is based on the assumption that community-members will only engage in participatory behavior if their more basic needs (e.g. for security) are met. Accordingly, higher order needs such as a need for achievement or affiliation will only become relevant for behavior when more basic needs such as the need for physical security are being fulfilled. A needs-based approach would explain the attractiveness of online communities with the opportunity of satisfying needs for affiliation, achievement or social recognition. Thus, the driving force for active participation in an online community would be the satisfaction of higher-level social needs. However, Bishop (2007) criticizes hierarchical needs theory because of its failure to account for the non-participation of "lurkers" even though their more basic needs have been met. Theories of goal-orientation, on the other hand, fail to explain why certain members of online communities do not engage in participatory behavior even though they have the desire to do so. In Bishop's multi-level ecological cognition framework a person is motivated to participate in an online community if this is in line with his or her desires (e.g. social, creative; level 1), cognitions (e.g. plans, goals, values, beliefs; level 2) and if the person possesses the abilities and means to interact with the environment (level 3).

Compared to hierarchical needs models, cognitive elements play a much more important role in the ecological cognition framework.

Some members of online communities will actually experience the feeling of flow (Csikszentmihalyi, 1990, quoted from Bishop, 2007, p. 1889). Novak & Hoffmann (1998, quoted from Bishop, 2007, p. 1889) identified the following characteristics of flow: arousal, challenge, control, exploratory behavior, focused attention, interactivity, involvement, optimum level stimulation, playfulness, positive effect, skill, telepresence, and time distortion. In a state of flow, an actor will simultaneously have reduced attention focus, lose track of time and become immersed in the environment (Bishop, 2007, p. 1889).

Active participation in an online community can also be viewed as learned behavior. While this approach may not explain why a person accessed an online community in the first place, it can explain why persons continue to display participatory behavior, the main reason being positive reinforcement. In many cases, participation in an online community will be reinforced positively by means of social rewards (Hoisl, Aigner & Miksch, 2007). An example of this would be an official and highly visible classification as active author, for instance on Wikipedia.

Online communities are characterized by social exchange. Theories of social exchange usually explain the behavior of an individual in terms of costs and benefits (Butler, 2001). Accordingly, a person will participate actively when he or she assumes a high probability of a personal benefit. However, if the costs of such an active participation are considered too high, activity will be limited to the status of "lurker".

A study of Wikipedia administrators revealed that their central motive for participation was learning (Baytiyeh & Pfaffman, 2010). This was followed by the motivation to create a public artifact. Fun and enjoyment and the experience of flow as described by Nakamura & Csikszentmihalyi (2003, quoted from Baytiyeh & Pfaffman, 2010, p. 136) followed next. Flow can be experienced when a contributor has the necessary skills to carry out a non-trivial task. The social factor in Wikipedians' motivations should also not be neglected. Many Wikipedians report that they see their contributions as a commitment to the community. They cherish the fact that others share their interests and they like to collaborate. Playing a dominant role in the community and personal benefit, on the other hand, seem to be less important motivating factors.

Oreg & Nov (2008) explored motivations to contribute to open source initiatives. They found that contributors to software development were more motivated by the chance of gaining a good reputation and by motives of self-development whereas content contributors showed mainly altruistic motives. Building up one's reputation is connected to achievement as a guiding principle in one's life. The enhancement of skills as a motivation showed a relationship to an emphasis on growth, autonomy and free thinking. A motivation to contribute to an open-source community is found in persons who strongly value the welfare of others.

Li (2011) finds evidence for the importance of perceived value of contributing to online com-munities and the likelihood of being rewarded for the willingness to contribute. Interestingly, cost of contribution

had no predictive value for the willingness to contribute. Among four groups of variables social approval was found to have the strongest predictive value for the willingness to contribute.

While the reported findings offer insight into motivations for the engagement in online com-munities they do not focus particularly on older age groups. Older adults who have not used a computer during their professional life are most easily attracted to the internet through specific topics of interest. In order to mobilize these persons for online communities it has to be made clear how the use of the internet can enrich their relationship with these topics of interest (Eastman & Iyer, 2004, p. 220). Moreover, a survey of US citizens aged 65-85 showed that the most important reason to use the internet was the opportunity to stay in touch with friends and relatives (Eastman & Iyer, 2004, p. 217).

6 Reasons for the Non-Use of Online Communities by Persons Aged 60 and Older

6.1 Reasons for the non-use of the internet

A majority of non-users (56%) doubt that they will ever use the internet. In this group, older persons are overrepresented. Lenhart et al. (2003) believe misconceptions about the internet to be the main reason for the lack of desire to use it. More than one third of non-users are concerned about pornography, credit card fraud and other illegal activities on the internet. Older persons are especially preoccupied with fears of privacy breaches and security risks (Eastman & Iyer, 2004, p. 220). According to Lenhart et al. (2003), 27% of non-users find the internet to be too complicated and hard to understand (p. 4).

In the US, most non-users state a lack of interest as their main reason for not going online (31% of non-users). 12% say they do not have a computer and 10% consider going online too expensive (Zickuhr, 2010). Morris, Goodman & Brading (2007) describe a „grey digital divide" (p. 55). They see the main cause of non-use of computers and the internet in misconceptions about the computer and its practical benefits. For instance, many older persons believe that computers do not go together with older age, are difficult to use and have not practical benefit. Well-designed information campaigns are therefore seen as an important remedy. A majority of internet users are convinced that the internet has a positive influence on their lives. They are convinced that they would miss the internet if they could not use it. Interestingly, women prefer e-mail while men are more in favor of information searches. Men are also more frequent to report internet shopping and the use of the internet for banking matters. Thus, these diverse groups of potential users need to be addressed with different offers and strategies. In order to develop an interest in computers and the internet, persons need to see a practical benefit. Relevant subject matters include communication with family and relatives, general interests and hobbies as well as social interests. Computer and internet courses can function as important entryways to the world of computers and the internet. The design of course materials should take into account that many participants will have no prior IT experience whatsoever and are afraid of using a computer.

It is important to note that the use of online technologies does not only differ according to age but also according to gender, physical challenges, marital status and level of education. In the case of older persons these different factors frequently interact, resulting in new disadvantages. This is one of the reasons why the age-dependent digital divide proves to be very resistant to change (Godfrey & Johnson, 2008, p. 637).

In a study with older persons living in two sheltered housing complexes in London, Sourbati (2009) found that non-use of the internet could not simply be overcome by providing access. Moreover, age turned out to be only one and probably not the most important factor in non-use of the internet. Thus,

framing the discourse about a digital divide solely around the factor of age is simplistic. Both a lack of skills in using new media as well as a perception of internet-use as being irrelevant for one's personal life –situation were common. Many participants were dependent on the assistance of care workers when accessing the internet. Thus, an effort to get more older persons in similar social circumstances online would have to include an investment in human capital.

In Switzerland, Schelling & Seifert (2010) conducted a representative telephone and face-to-face survey of persons aged 65 and older on the reasons for non-use of the internet. A general interest in technology and the assessment of the use of technological tools as being difficult or easy proved to be very good predictors of internet use. The complicatedness and the effort needed in learning were mentioned as dominant reasons for non-use among offliners. Both onliners and offliners were concerned about security issues (data protection and internet crime). However, these concerns did not prevent onliners from using the internet. The cost of hardware and lack of access were mentioned by only one third of offliners as barriers. However, two thirds of offliners are not ready to spend any money at all on internet use. Health reasons play a comparatively minor role. Two thirds of offliners consider the state of their health to be rather or very good. There is no widespread fear that non-participation in the internet could lead to societal exclusion. Merely 16% of offliners and 32% of onliners feel (potentially) excluded from society when or because of not using the internet. The study could not respond to the question of why onliners see a greater risk in internet non-use than offliners. The use of the internet is correlated with the frequency of internet use in one's immediate social environment. The use of the internet by onliners' partners, siblings, and friends of the same age group is twice as high as that of offliners. Moreover, onliners receive the advice to use the internet three times more often than offliners. In a multivariate analysis the number of mentioned interesting uses of the internet, technological affinity, recommendations by persons from one's social environment to use the internet, the general attitude towards the internet, and age were the most important predictors of internet use. Level of education and income played a considerable role in predicting actual internet use but not in predicting interest in internet applications (Schelling & Seifert, 2010, II-III).

In their use and non-use of the internet, persons are not only influenced by "hard" factors such as access and computer literacy but also by their perceptions of personal competence. People hold certain beliefs about their abilities to use the internet in a competent way. These beliefs can be called internet efficacy (Adams, Stubb & Woods, 2005, p. 4).While internet efficacy is usually related to actual i.e. observable computer or internet literacy, this relation-ship is far from linear. Thus, it is to be expected that a certain number of internet non-users have exaggerated views of the difficulties they might encounter when using the internet. Kurniawan, King, Evans & Blenkhorn (2006) also point out that older persons show a greater hesitancy to exhibit behavior that they think might be incorrect and show less confidence about their ability to use computer technology. In a similar vein, internet non-use can also be rooted in what has been called "computer anxiety" (Adams, Stubbs & Woods, 2005,

p. 4). Persons suffering from computer anxiety will react with negative emotional reactions to the use or even just the anticipated use of computers.

In a study of 91 predominantly immigrant seniors in downtown Los Angeles psychological variables proved to be stronger predictors of enrollment in free training (and beginning use of computers and the internet) than age or prior experience with computers (Jung et al. 2010). These psychological variables consisted of computer anxiety and aging anxiety (i.e. anxiety with regard to changes that come with aging). The negative relationship between aging anxiety and enrollment seems especially interesting since aging anxiety is not in any obvious way connected to the use of computers and the internet.

Non-use of computers and the internet is often not due to lack of access. It is also not true that older persons are estranged from new technologies in general. Mobile phones, for in-stance, are broadly used by older persons. Therefore, Selwyn, Gorard, Furlong & Madden (2003) see the main reason for non-use in the lack of relevance of ICT for the everyday life of older persons. Many older persons simply do not see a necessity to use a computer or the internet and do not have an interest to do so. In order to stimulate the interest of older persons in ICT a clear connection between individual quality of life and ICT has to be related. That is why the authors propagate an abandonment of a technological-deterministic perspective according to which older persons need to be "re-trained" or "re-educated". They see a greater chance of success in an increased participation of older persons in creating and re-creating ICT. The most important place of ICT-use by older persons is the private home. Therefore, approaches of visiting ICT-integration seem more promising than the establishment of publicly accessible internet terminals (e.g. in libraries; Selwyn, Godard, Furlong & Madden, 2003, pp. 577-579).

It is important to realize that many internet users are more concerned about their privacy than is commonly reported. Moreover, persons seem to have a tendency to relate intimate details in chatrooms and forums on a voluntary basis. Reips (2008) believes that this is due to the lack of visibility of individual features of a communication partner. This can promote an impression of similarity, which enhances a greater openness among those engaged in communication (p. 10).

Functional impairments can play an important role in the non-use of the internet by older per-sons (Kurniawan, King, Evans & Blenkhorn, 2006). The most important of these impairments are visual impairments, motor impairments, which make use of a mouse difficult or even impossible, cognitive impairments (e.g. reduced working memory) and hearing impairments, which have become more relevant through the prevalence of multimedia contents.

Dickinson, Eisma & Gregor (2010) report as an important conclusion of their study with older novice computer course students that conceptual or cognitive barriers were more important than visual or motor-control limitations. These conceptual barriers can be divided into primary, medium term and longer term barriers. Primary barriers included the fear of losing one's work and the failure to establish a relationship between Menu labels and icons on a toolbar. Medium term barriers included the use of

scrollbars and the ability to distinguish between applications and documents. Longer term barriers could not be overcome while the course was running. They included a difficulty with the multiple ways in which a task can be carried out. Another central problem was saving and retrieval of files. Physical objects such as floppy disks were preferred to the more abstract concept of files on a computer.

In qualitative research approach Richardson, Zorn & Weaver (2007) investigated older non-users' narratives of computers. They believe that an important reason for the non-use of computers lies in an incompatibility between non-users' existing narratives acquired over a lifetime and the computer-related narratives. Thus, non-users find no convincing reason to use computers. The "test of significance" with which non-users evaluated stories about the computer was that of personal utility. While many non-users acknowledged positive aspects of computer usage on a general level, they did not consider these sufficiently relevant for themselves at the current time. For this particular group of participants, there was no significant compatibility between the stories of the new computer and their existing narrative commitments, and therefore, no convincing reason to take-up computing.

6.2 Barriers in the use of online communities and the participation in online collaborative networks

De Souza & Preece (2004) identify two keys to the success of an online community, namely its sociability and its usability (p. 580). While sociability refers to the social interactions of the online community, usability is concerned with the human-computer interface. Because these two factors are crucial for the success of an online community, most barriers in the use of an online community can also be retraced to difficulties with one or both of these elements. Preece (2001) names three main components that define good sociability, namely purpose, people, and policies. Purpose refers to the shared focus on interests, information or support. It is the main reason why members are part of a community. Sociability is dependent on the interaction of people. These people have different needs and will take on different roles. The language and protocols of interaction will lead to the development of policies. These policies can be either informal (i.e. social norms expressed through folklore and rituals) or formal (e.g. behavioral codes, registration policies). Informal and formal policies are the defining elements of community governance.

Usability, on the other hand, is concerned with how easily and intuitively a person can learn to use a technology and to interact with it (Preece, 2001). Preece (2001) proposes four main usability issues for online communities. 1) Dialog & social interaction support, 2) information design, 3) navigation, 4) access.

- Dialog & social interaction support refers to all aspects of the used surface that pro-mote interaction. How easy is it to execute commands? Can avatars be moved without difficulty?
- Information design deals with whether the community information is readable, understandable and aesthetically pleasing.

- A good navigation will allow the user to move easily and to find that which he or she is looking for. Many online communities face problems of insufficient compatibility between imported software modules and the website housing the community.
- Access to the online community is dependent on the prerequisites of a full usage of the community software. This includes questions of required bandwidth and state-of-the-art hardware and operating systems. Text versions of community information should be available as alternatives. If certain prerequisites are essential, it should be made clear how they can be fulfilled (Preece, 2001).

Matzat (2010) believes the reasons for non-participation in online communities to be mainly rooted in problems of sociability, i.e. problems caused by the characteristics of the social interaction taking place. He sees three main problems of sociability in online communities, namely 1) a lack of trust, 2) free riding and 3) insufficient membership stability (p. 1172). For instance, a lack of trust can develop in a situation of information exchange. If a person pro-vides information to others and is never rewarded for this then this will decrease his or her readiness to share information in the future. Thus, the initial provision of information in this kind of setting is always risky because there is no guarantee that it will be answered by an equivalent investment. Online communities invite free riding. While everyone can profit from following a discussion, the discussion may actually only take place between very few active communicators. Free riders avoid the costs of active contribution they receive the same benefits as active discussants. Therefore, many online communities provide specific incentives for active contributors. Finally, members of online communities are free to leave the community at any time. A low level of membership stability, however, can reduce the general motivation for long-term commitment. If there is a high risk of persons leaving the community shortly after having profited from others' information this will reduce the readiness to provide information on a regular basis.

A study by Lehtinen, Näsänen & Sarvas (2009) suggests that many older adults, especially baby-boomers, perceive the internet in general as a place that is unsuitable for sociality. Moreover, they often consider social networking sites to be crowded by people seeking publicity and superficial relationships and they believe these motives to be incompatible with values of older adult life. In addition, the frames of social interaction that have developed in long-lasting friendships are not easily transformed into a new environment.

Busemann & Gscheidle (2010) report on the most important reasons of internet users aged 60 and older for not having an active profile on a private online community. The most frequent reasons were:
- I use other channels to communicate with my friends (96%)
- Communities are uninteresting to me/they do not offer me any advantages (81%)
- I fear a misuse of data (73%)
- I do not wish to be "findable" on the internet (70%)
- The effort needed is too great (60%)

- I do not know about the possibilities of communities (56%)
- I do not know anyone who is a member of a community (55%; p. 366)

With relation to Wikipedia, Schmidt, Glott & Ghosh (2010) identified the following reasons for non-active use of Wikipedia in the age group 60+. 1) Most users are happy with just reading contributions. 2) Many users are convinced they do not have anything interesting to contribute. Further reasons for non-active use were lack of knowledge about the creating and editing contributions, uneasiness in correcting and editing contributions of others, a lack of routine in using technology and insufficient time resources.

7   Integration, Activation and Retention of New Members

7.1   Integration and Activation

As Stadelhofer & Marquard (in press) point out, in order to create interest in the internet in persons aged 60 and older, the internet must come across as an enrichment of life and as an opportunity for a broadening of the personal realm of experience. Only if methods for "teaching" internet applications to older adults take this into account can they be successful. Instead of demanding from older adults that they learn how to use the internet, Stadelhofer & Marquard (in press) propagate a change of perspective. If the existing competencies, strengths, and interests of older adults are sufficiently taken into account, reservations against new media can be overcome. Strategies for activation should therefore be designed for different target groups of older adults (Oehmichen & Ridder, 2010). For example, "culture-oriented traditionalists", or "multi-interested" must be addressed differently from "home-oriented" or "withdrawn" persons (my translation). Differential approaches are needed so that diverse groups of older adults may experience the internet.

It is important to note that a large number of older internet users are self-taught. Other sources of learning that older users name are – in descending order of importance – peers, relatives and internet classes (Eastman & Iyer, 2004, p. 314).

Successful educational approaches often use settings that allow for mutual assistance and peer-mentoring. Choosing locations that are familiar to older persons will facilitate the linkage of technology with everyday experiences. Moreover, engaging older persons' existing social network in the learning process and showing how the internet and online communities relate to pre-existing topical interests have proved to be successful strategies (Godfrey & Johnson, 2008).

The quality of the learning environment and the way in which education is offered can pro-mote or prevent older persons from using online technologies. Mutual assistance and peer mentoring in the framework of existing peer groups can facilitate learning. The use of non-threatening settings such as volunteer groups, clubs and organizations permit the linkage of technology with everyday experiences. This is also a good way of attaining access to persons who are, as it were, marginalized both socially and digitally (Godfrey & Johnson, 2008, p. 637). Moreover, the connection between new technologies and existing topical interests fosters motivation, e.g. if the technology helps to find information on a topic of interest. An important role is also attributed to a person's existing social network. Persons who have such a network are more likely to use new technologies in a sustainable manner (Godfrey & John-son, 2008, p. 637). Finally, the use of media competent mediators who are active in local offline communities and in other organizations (p. 640).

As Selwyn (2004) points out, however, educational efforts alone are not sufficient. Rather, older persons should be given more weight in the development and design of ICT. Only this strategy could guarantee that ICT attains true relevance for older persons' everyday lives.

Eastman & Iyer (2004) believe the "topical interest approach" to be the most promising strategy for the mobilization of non-users. In addition, privacy and security are two issues that must be addressed with potential internet users. The shared use of terminals can also be a way of combining learning and community in a playful way. From a costs and benefits perspective buying a computer may not always be a reasonable option for older persons. In some cases it may be more efficient to install internet-terminals in retirement homes or other infra-structures that are strongly frequented by older persons (Eastman & Iyer, 2004, p. 220).

Semi-structured interviews with 23 individuals aged 55-75 showed that use of the internet was positively related to a perception of usefulness, ease of use, and internet-efficacy. Moreover, results indicated that growing internet experience led to perceptions of ease of use, efficacy and reduced complexity of navigation. The authors conclude that internet use by older persons could be promoted through age-specific marketing, adjustments in the design of internet sites (more simple, more uniform), user-friendly online help, easy to understand error message terminology, and more training (Adams, Stubbs & Woods, 2005, p. 3).

From the perspective of social psychology, participation in online communities can be seen as a behavior that is to be established through social persuasion. Social persuasion must address relevant attitudes, cognitions, and behaviors (Zimbardo & Leippe, 1991). Thus, a positive attitude towards online communities must be evoked first. Second, the relevant target groups must be informed about the advantages of participation in online communities. Finally, the addressed older persons must be capable of carrying out the desired behavior and be given the opportunity to practice the new behavior. In order for a persuasive process to be successful the target group must direct its attention to the message and the message must be intelligible. The target group hast to accept the message so that an attitude change can take place. Finally, the new attitude must be sustained and lead to the desired behavior (participation in an online community; Zimbardo & Leippe, 1991, p. 137). As Bishop (2007) points out, even when an online community has "the right tools, the right chat platform and the right ethos" (p. 1887) there is still no guarantee that community members will actually be active. The literature on actually changing the behavior of non-participating community members is sparse. One of the reasons for this is that more traditional methods of behavior modification are not useful in virtual environments. For instance, following Skinner's (1938, quoted from Bishop, 2007, 1888) theory of operant conditioning, one would suppose that rewards for participatory behavior lead to the repetition of that behavior. However, this approach cannot explain why a person would take that first step and start being active in the first place. Bishop (2007) believes that in order for a person to engage in participatory behavior he or she needs to have a desire to do so. In addition, the desire needs to be in line with a person's goals, plans, values, beliefs and interests. Moreover, a person must have access to the required tools and be capable of carrying out the action. Vice versa, in order for a person to be ready to change from non-participatory to participatory behavior, non-participation would have to be dissonant with a person's existing beliefs, plans or values. In social psychology, one typical approach

of attitude change is through the use of persuasive messages. Simply put, a persuasive message is presented, processed, and, if everything works well, the person's attitude can change in the desired direction. The new or revised attitude can then, under certain conditions, lead to an adapted behavior (Crano & Prislin, 2006). However, the process of persuasion can only be successful if the message is elaborated or systematically analyzed. In order for this to happen, a person must be motivated and the message must be well reasoned, data based, and logical (Crano & Prislin, 2006). If, on the other hand, receivers of the message are unmotivated (or perhaps unable) to elaborate the message they will resign to peripheral cues (e.g. the optical attractiveness of the community website) or to heuristics (e.g. "all the people in online communities are superficial") in forming their attitude (Crano & Prislin, 2006). In the context of online communities, Bishop (2007) stresses the importance of credibility and trustworthiness of those who communicate the persuasive message (i.e. the appeal to participate). Another strategy of turning lurkers into novice contributors is by demonstrating to lurkers that novice contributors are treated well. In other words, an online community willing to appeal to potential contributors should make a special effort to demonstrate that it cares for new active members (e.g. by answering quickly to their posts). The desire to participate can be increased by way of mediating artifacts (e.g. hyperlinks). These artifacts can be perceived as affordances of certain actions (e.g. clicking) and lead to the development of a respective plan of action. Well-placed artifacts can enhance the experience of a state of flow (Csikszentmihalyi, 1990, quoted from Bishop, 2007, p. 1889). In a state of flow, an actor will be focused on acting out desires and thus be more likely to engage in participatory behavior. In summary, one could say that a community with artifacts and actors that do not create dissonance facilitate the emergence of a state of flow in the potential participant which in turn encourages the spontaneous acting out of the desire to be social.

7.2   Retention

Hinchcliffe (quoted from Schaffert & Wieden-Bischof, 2009) describes a life-cycle of members in online communities. He distinguishes between the phases of discovery (visitor), joining (novice), engaging (regular), ascending (leader), changing (elder) and departing. Visitors will participate rather from the outside and in an unstructured manner. Novices have started to contribute actively, most frequently by commenting on others' posts. Regulars have already contributed for some time and have become an established part of the community. Leaders take on both the role of participator and mediator and are usually highly regarded by the community. Elders, finally, will leave the community due to a change in interests, new relationships or different outlooks and positions (Schaffert & Wieden-Bischof, 2009). Wenmoth (2006, quoted from Schaffert & Wieden-Bischof (2009) distinguishes between four succeeding stages of member participation, which he calls the four C's. The first stage would be that of consumer, followed by the stage of commentor. The third and fourth stages are those of contributor and commentator. A consumer will merely read and explore the contributions of others. Commentors concentrate on making comments to posts of others.

Contributors are the ones who actually initiate new discussions. Finally, a commentator frequently takes a meta-position and tries to have a broad view of the goings-on, offering to link the work of different contributors and thus providing a kind of leadership to the community.

In order to be sustainable social structures must provide access to a pool of resources and they must also support the process that translates these resources into benefits for participants. According to Moreland & Levine (1982, quoted from Butler, 2001, p. 347) social structures are sustainable if they produce a benefit that outweighs the cost of membership. Larger social structures have access to more resources than do smaller ones. It can therefore be expected that they should be in a better position to benefit their members and to be sustainable. On the other hand, an increase in size can also have negative effects when dealing with the task of materializing an actual benefit from potential resources. The reason for this lies in the excessive number of potential partners for interaction who one cannot possibly know in total. This, however, decreases the probability of solid personal relationships and of the exchange of information and support. Greater structures also carry a higher risk of little contribution by single individuals because everyone is convinced that others are doing enough (Petty et al. 1977, quoted from Butler, 2001, p. 349). Thus, positive and negative consequences of membership size are in a complex interactive relationship. At the core of social processes that create benefits stands communication. Thus, more communication will lead to greater benefit. However, more communication also leads to greater costs for those who communicate. This is why the internal structure and the technology of the community should be directed at keeping contributors' costs as low as possible. The increasing size of an online social structure can both lead to a further increase of memberships as well as to a decreased ability to retain members (Butler, 2001).

In their study of an online discussion community, Ridings & Wasko (2010) point out the importance of social dynamics for the retention of members. In their view the increase in resources that comes with an increase in membership will not always lead to more communication activities. They see the decisive factor in the way in which people participate. Thus, if there is a foregrounding of information exchange then that will be attractive for new members but will not increase active communication. On the other hand, if the emphasis on information gives way to increasingly social and interactive communication then that will lead to more communication activity by existing members. However, the more social communities can have difficulty in attracting new members. If potential new members come as information seekers, the increasingly social nature of the community makes it more difficult for them to find information. On the other hand, communities with strong social interactivity may appear as a kind of a closed circle to the newcomer and may induce perceptions of "us" and "them".

8 The Effects of Participating in an Online Community

In starting out, it is important to note that persons are not just passively influenced by technology. Rather, they play an active role in determining and influencing the uses of technology. The relative anonymity of the internet tends to encourage self-expression. In addition, the absence of physical and nonverbal elements of interaction can facilitate the forming of relationships that are based on different foundations (e.g. shared values and beliefs). When relationships that were formed in the internet have reached a sufficient amount of trust, persons frequently transfer them into their „real lives", i.e. to the level of face-to-face interaction and telephone conversations. On the other hand, the way in which communication in the internet takes place can leave many things unsaid and undone and thus open to interpretation and suggestion. This is the reason why the assumptions and attributions we make about our interaction partners in the internet are largely determined by our own wishes and goals. Satisfaction and disappointments with the quality of social interaction in the internet is therefore largely dependent on our own expectations and desires. There is no empirical evidence, however, that the internet depresses people or leads them into loneliness. Moreover, the internet does not seem to be a threat to community life. Rather, the internet has simplified communication and has promoted close ties between families and friends. This is especially true in cases where long distances would otherwise make it difficult to stay in touch (Bargh & McKenna, 2004). The fact that the perceived quality of social interaction in the internet is strongly determined by our personal wishes and projections is relevant for the question of how older persons are affected by the use of online communities. A view of "older people" as a homogeneous group with comparable needs seems overly simplistic. The way in which a person is affected by online social interaction is clearly not only determined by age but also by a large number of other factors such as socio-economic status, education, personality, experiences of self-efficacy and a person's individual biography (see for instance Mosler, 2010). In other words, „older persons" are enormously diverse and the ways in which the use of an online community will affect an older persons are bound to be diverse as well.

Wright (2000) was able to show that in older persons who used SeniorNet and other online websites for social support the intensity of participation was correlated with a lower amount of perceived life stress. A further result of his study was that frequent users rated the online network of social support more highly than non-frequent users. This could be an indication that the greater familiarity with technology can lead to a more positive evaluation of the online social contacts.

Slegers (2006) investigated the potential effects of computer and internet use on cognitive abilities, autonomy, everyday functioning, wellbeing and the social network of older adults. In order to examine these potential effects, a randomized controlled intervention study with multiple control groups was carried out. However, none of the potential beneficial effects could be proved. In other words there were no significant differences between the intervention and the control group on measures of cognitive functioning, autonomous living, wellbeing and social network. On the other hand, the use of

a computer over a twelve-month period did not lead to upper limb complaints or reduce functional health in older adults nor did the intervention group show signs of cognitive or deterioration or decreases in wellbeing. It was also shown that computer training and internet usage had no effect on the use of other everyday technology (Slegers, van Boxtel & Jolles, 2007). Slegers (2006) concludes that computer training and the stimulation of internet use over a twelve-month period is not an effective method to help older adults age successfully.

In a critical review of studies on computer use and wellbeing in older persons, Dickinson and Gregor (2006) conclude that there is no empirical foundation for suggesting that computer use has a positive effect on wellbeing in older persons.

Drawing from a list of senior centers Blit-Cohen & Litwin (2004) conducted semi-structured interviews with 10 computer users and a matched control group of 10 non-users. They identified three important dimensions in which belonging to the third-age group and computer technology are associated.

- Through use of an (online) computer older persons expand their connections to their group and their social network. They become more strongly involved in the exchange of social capital (p. 395).

- The second important dimension refers to the concept of time. Older internet users seem to be more strongly oriented towards the future and look forward to new challenges. Non-internet-users, on the other hand, were rather backwards-looking and mentally focusing on the past. Internet users seemed more integrated into the current social discourse and expressed a wish for active participation. They recognized the internet as an apt means to reach that end (p. 395).

- The third dimension concerns the relationship between internet-users and their computers. Older computer users frequently attribute human traits to their computers; they "humanize" them. Thus, the computer itself can become an element of the social network of an older person (p. 395). In these cases, the mere act of using a computer becomes a kind of a social activity in its own right. From a perspective of learning theory, one can explain this as the result of classic conditioning where the computer is at first used as an emotionally neutral medium to attain positive experiences (e.g. beneficial social exchange in an online community). After a certain amount of time, however, the computer itself will be associated with these positive consequences.

9   Characteristics of Successful Online Communities

Following Preece (2001) it seems plausible to suggest that, on a general level, sociability (social interaction in community) and usability (human-computer interaction) are key to the success of online communities. Other important factors of success are more dependent on the functional nature of the community. For instance, Bürbaumer & Mellacher (2009) stress that with regard to knowledge communities the quality of contributions is of great importance. From this it follows that the assurance of quality must be a key priority in these kinds of online communities.

Adams, Stubbs & Woods (2005) are convinced that a simpler and more uniformly designed Internet would be much more accessible to older persons. They name the following 10 criteria that should be taken into account when designing web pages so that they are usable for older age groups:

"Ensure web pages are:

1. Transparent

2. Comprehensive

3. Responsive

4. Self-explanatory

5. Adaptive

6. Efficient

7. Forgiving

8. Flexible

9. Informative and timely

10. Consistent with the user's other familiar designs" (pp. 15-16).

They also emphasize that attitudes towards the internet and online communities can only be positively affected through concrete experience and exercises.

As Pfeil, Arjan & Panayiotis (2009) point out, young users' online social network is typically larger than that of older persons. Older persons' lower number of "friends" could be an indicator that they need more information about other persons before accepting them as "friends". In addition, older persons were more reticent in the use of extra features such as music, videos, and commenting functions. Older users' focus in online communities seems to be narrower than that of younger users. Moreover, older persons tend to use more formal language than younger ones. On the other hand, in their presentations younger persons tend to be more focused on themselves and their emotions (Pfeil, Arjan & Panayiotis, 2009).

Matzat (2010) reports evidence that free-riding is less common in online communities that are embedded in offline networks (i.e. that are a mixture of online and offline community). Embedded online communities show less problems of trust than communities that are not or not well embedded. On the other hand, fluctuation of members cannot be explained with the social embeddedness of an online community. Mixed communities have certain advantages over purely virtual communities with

regard to sociability. The reason for this lies in the greater density of the offline network, which allows for social control, which promotes the development of relational interests, i.e. community members want other members to think well of them. Relational interests reduce uncooperative behavior which in turn diminishes free-riding and reaffirms the stability of membership. It need not be the case that all members are in face-to-face contact. It is sufficient if a certain portion of members do because even that seems to foster mutual trust and facilitate collaboration.

In a quantitative content analysis Nimrod (2010) identified 13 major themes that are being discussed in seniors' online communities. They are – in order of frequency – 1) Fun, 2) Retirement, 3) Family, 4) Health, 5) Work & Studies, 6) Recreation, 7) Finances, 8) Religion & Spirituality, 9) Technology, 10) Aging, 11) Civic and social issues, 12) Shopping, 13) Travel. In discussions, positive terminology outweighs negative terminology by a ratio of 1.26:1. The emotional intensity of positive terms is higher than that of negative ones. The average emotional intensity across all terms used (positive and negative) is 0.34 (with a minimum of -3 and a maximum of +3). This shows that – on the whole – the tone being used is very moderate. One of the reasons for the growing popularity of the examined online communities was the broadness of topics for discussion and the diversity of forms of emotional expression. While the predominant tone was moderately positive the communities did offer an opportunity for the expression of emotions such as grief, anger, mourning but also of positive emotions such as happiness and playfulness. The most important functions of online communities were 1) medium of communication; 2) a source of information; 3) an instrumental task-oriented tool (e.g. shopping, financial affairs, travel planning); 4) as a leisure activity. The importance of the theme "fun" shows that older persons will turn to a community if they can make entertaining, amusing and playful experiences. On the whole, a combination of agreeable interaction, entertaining activities and practical information can be seen as key to success of a senior online community. In addition, the communities can offer social support, which can be seen in the discussions on topics such as retirement, family and health. The sharing of emotions between peers can lead to mutual understanding and good advice. Moreover, social interactions and leisure activities can take on coping functions in the sense of self-preservation, self-restoration and personal growth. In other words, they can soften the effects of negative life events through distraction. This is why the author argues for a perception of online communities as resources for coping, the consequence being that an active participation in online communities can contribute to the wellbeing of older persons.

10 Conclusion

The past ten years have seen a strong increase in the use of the internet and online social media by older adults. Nevertheless, older adults remain sub-represented among internet users and, more specifically, concerning the use of online communities and online collaborative networks. Since all indicators point to an undiminished growth of opportunities for online participation in communal and societal affairs, full access of older adults remains a political priority and an important field of research.

There exists a multitude of definitions of online communities and communities can serve a number of different functions such as social relationships, knowledge building, etc. A common trait of online communities and online collaborative projects is that the communicative investment of different participants creates a body of information that can be seen as a community's resources. Sustainable online communities provide reliable access to their re-sources and facilitate a process by which this access is converted into a practical benefit for participants.

The number of preconditions that need to be met before a person will actively engage in an online community is quite stunning. Research on the motivation to contribute actively to online communities suggests that participation has to fulfill a desire, and needs to be consonant with important personal cognitions (beliefs, plans, etc.). In addition, active participation is dependent on certain abilities and means. This shows that the integration of new members into online communities and the stimulation of active participation are quite complex endeavors. Frequently, integration and activation have to be a stimulated through a persuasive process aiming to create "cognitive dissonance" between non-participation in the internet and online communities and a person's other attitudes and cognitions. While this is quite a difficult undertaking in any case, it becomes even more challenging with regard to older adults who are more prone to perceptions of the internet as being dominated by pornography and illegal activities and who tend to worry more about breaches of privacy.

What has also become clear is that older adults' e-inclusion and increased participation in online communities should not be framed as knowledgeable young persons "explaining" the internet to older persons. Desires and cognitions cannot be addressed solely through information. Rather, in order to be successful, strategies for integration and activation have to start out by focusing on older adults' competences, interests, and needs. However, it should be avoided to conceive of older adults as a homogeneous group. While it may useful to address target groups defined by age, the diversity of lifestyles, interests, aspirations, values, and experiences of persons who are members of the same age group must be taken into ac-count.

Randomized controlled intervention studies have failed to prove positive effects of internet use on the cognitive functioning, autonomy, wellbeing, and the social network of older adults. However, it seems too early to close the debate on this topic. On the one hand, longitudinal data over a course of several

years are lacking and, on the other hand, qualitative research suggests that some of the positive effects may be difficult to measure with quantitative de-signs.

Many older adults are not as interested in using a multitude of options when they participate in an online community. Rather, they tend to opt for a clear focus on those elements that truly interest them. This suggests that an online community aiming for the participation of older adults should allow for this kind of partial usage. In addition, older adults are more hesitant in making new "friends" in online communities. They take more time to be sure they can trust their social contacts. One way of establishing trust is through real-life community meetings. Thus, communities that exist both online and offline may be ideally suited to attract older adults.

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