Social networking services for older people's well-being:
An example of applying the capability approach

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Introduction

It has been argued that the capability approach—'a broad normative framework for the evaluation and assessment of individual well-being and social arrangements, the design of policies, and proposals about social change in society' (Robeyns, 2005)—can be successfully applied to the design of products or services (Oosterlaken, 2009; 2011), for example, in the sector of information and communication technology (ICT) (Johnstone, 2007).

In this paper, we discuss several ways in which the capability approach offers a valuable and useful perspective to better understand and organize processes of designing ICT. First, we present the *WeCare* project, in which the authors work and which will serve as an example of applying the capability approach. Next, we introduce our understanding of the capability approach. After that, we discuss several challenges in the design of ICT services, based on our experiences of working in the *WeCare* project. Furthermore, we explore ways in which the capability approach can help to better understand and organize projects similar to the *WeCare* project—projects in which ICT is considered as a means to empower people.

The *WeCare* project

The *WeCare* project (www.wecare-project.eu) runs from 2010 to 2012 and is part of the European *Ambient Assisted Living* (AAL) research programme. The project's aim is to empower older people and others to participate in social networking (both online and face-to-face) in order to promote social communication and cooperation and, in doing so, to empower people to increase their well-being. The project can be understood as a preventive measure in that it targets older people who are not yet (very) isolated and not yet in (great) need of help. In addition, the project aims to empower older people to participate in social networks, so that these social networks can empower them to participate in their community and decrease feelings

of isolation. In short, the social network offers help if or when needed. Our main hypothesis is that when older people participate in social networking, they will improve their well-being.

Practically, we develop and evaluate four online social networking services. These networking services enable older people, their family members, friends and neighbours to communicate and coordinate activities, including the organizing and sharing of (mutual) help. These online social networking services are developed in close cooperation with specific user groups in Finland, Spain, Ireland and The Netherlands. Currently, the services are evaluated (Summer 2011). Participants' experiences of social well-being before and after the pilots are evaluated, in order to test our model regarding the effects of social networking on well-being due to social interaction (Steen et al., 2011), see Figure 1.
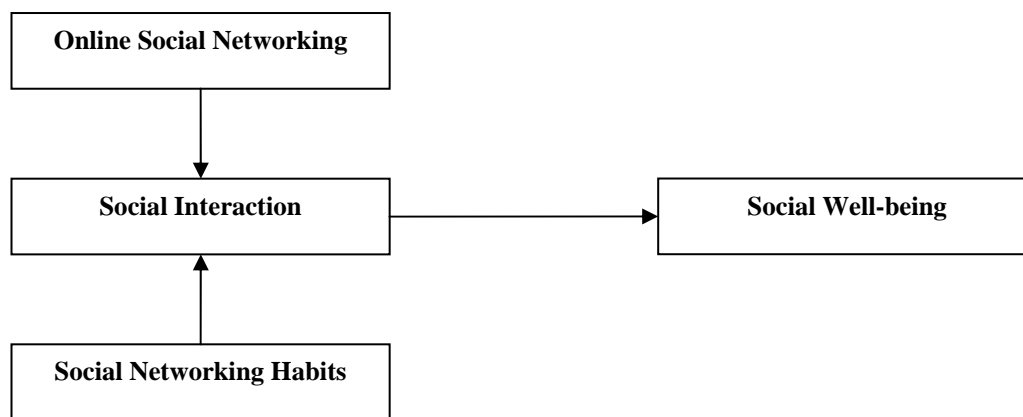

Figure 1. Hypothesis: When people engage in social interaction*, use* online social networking *tools and display* social networking habits*, they will experience increased social well-being.*

The capability approach

The capability approach was developed in a context of organizing and evaluating ways to empower people in developing countries to improve their freedom, independency and well-being (Sen, 1999). It has close relationships with economic, social and political theories and is often applied to discuss issues of justice and equality and to design and evaluate policies, typically at a macro-level of accumulated demographic data.

Given that technologies often play critical roles in people's lives and in their development—either as part of the *problem*, for instance in cases where industries pollute soil, water or air and cause harm to people, or as part of the *solution*, for instance in cases where machines help to provide people with clean water—it is peculiar to see that the capability approach is only rarely applied to the design of technology (Oosterlaken, 2009). Therefore, it is fortunate to see a growing interest from scholars and practitioners to apply the capability approach in ICT development projects, in particular—and not surprisingly—in 'ICT for development' (ICT4D) projects. A recent special issue (Oosterlaken & Van den Hoven, 2011) for example, contained papers on making operational the capability approach in ICT4D projects (Grunfeld et al., 2011; Kleine, 2011; Vaughan, 2011). See also Oosterlaken et al., 2011 and

Zheng, 2007 for other ICT4D cases. Although the term ICT4D is often used for projects in developing countries, we think it is appropriate to use the term also for the *WeCare* project.

The understanding of the authors—as researchers, consultants and practitioners, working in diverse projects that involve the design and evaluation of ICT services at research and innovation organization TNO (www.tno.nl)—of the capability approach centres around the following notions (drawing from Robeyns, 2003 and 2005), see Figure 2.

Focusing on commodities is 'too little'. We see ICT's as 'only' means that can help to bring about positive change. ICT's can never be goals in themselves. In addition, we understand that ICT's are always embedded in people's diverse practices and that there are diverse personal, social and environmental factors that influence the ways in which people can (or cannot) actually use these ICT's. In other words: a focus on *commodities*, such as merely providing people with computers, internet access and online services is 'too little' to effectively empower people to improve their well-being. Think, for instance, of a situation in which computers sit idle because maintenance or training is not taken care of carefully…

Focusing on behaviour is 'too much'. Many of our projects aim to first understand people's experiences, needs and preferences, and then to design technologies that will help them. By doing the latter, we aim to influence their ways of living—even though in benign ways. However, we feel that we should not aim to narrowly and paternalistically prescribe people's behaviour in overly detailed ways. In other words: a focus on behaviour ('achievements') is 'too much' and would not be in line with the empowering potential of ICT. Think of a situation in which people are encouraged to use a very specific application, for instance, making business cards or learning word processing, whereas they would rather use the same computers for social networking.

Focusing on empowerment is appropriate, 'in the middle'. The capability approach offers a more appropriate and alternative focus. Instead of focusing on commodities (too little') or on behaviour ('too much'), it focuses on empowering people to improve their capability, so that they can use relevant commodities and decide for themselves how to organize and live their lives. The capability approach sits *in the middle* (between commodities and behaviour), appropriately borrowing from Aristotle's vocabulary—Aristotle wrote about improving people's well-being or flourishing (*eudaimonia)* as the main purpose of life (cf. Sen, 1999: pp. 14, 24, 73 and 75) and about aiming for excellence or virtue (*arete*), which sits 'in the middle' in-between two less productive extremes of deficiency ('too little') and excess ('too much').

Capabilities are more specific and more detailed than *commodities* and take into account diverse *conversion factors* that influence whether and how people can (or cannot) actually use the available commodities. There are *personal factors* (e.g. physical condition, sex, reading skills, intelligence), *social factors* (e.g. public policies, social norms, discriminating practises) and *environmental characteristics* (e.g. climate, infrastructure, institutions, public goods). For example, a commodity like a computer can only contribute to a person's capabilities, if she has relevant skills and motivation to use this computer and if social and cultural norms allow her to

use this computer and online services, and if the political and technical infrastructures allow her to freely use these online services.

Capabilities are less specific and detailed than *behaviour* because capabilities are concerned with enabling and empowering people, and *not* with prescribing one specific type of behaviour that people would have to conform to. The capability approach aims for 'the promotion of overall freedoms of people to lead the kind of lives they have reason to value', to promote 'the substantive freedom to achieve … various lifestyles' (Sen, 1999: p. 10, 75). Moreover, the capability approach advocates participation of the people involved in the exploration and definition of those capabilities (or 'freedoms') that they wish to develop, for example, via participatory methods (Frediani, 2011), rather than imposing a set list of capabilities that they need to realize. Participation and emancipation do justice to the diversity of people and their diversity in needs, preferences and ideas for 'the good life' (well-being).
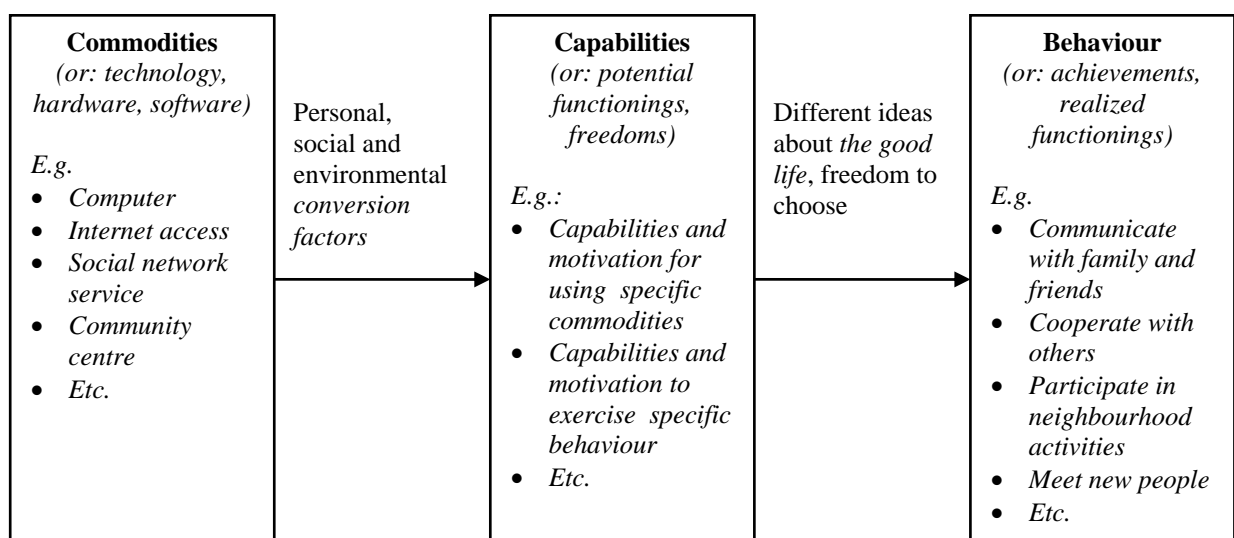
Commodities *(or: technology, hardware, software)* E.g. • *Computer* • *Internet access* • *Social network service* • *Community centre* • *Etc.*	Personal, social and environmental *conversion factors* →	**Capabilities** *(or: potential functionings, freedoms)* E.g.: • *Capabilities and motivation for using specific commodities* • *Capabilities and motivation to exercise specific behaviour* • *Etc.*	Different ideas about *the good life*, freedom to choose →	**Behaviour** *(or: achievements, realized functionings)* E.g. • *Communicate with family and friends* • *Cooperate with others* • *Participate in neighbourhood activities* • *Meet new people* • *Etc.*

Figure 2. The relationships between Commodities *('too little'),* Capabilities *('in the middle', appropriate) and* Behaviour *('too much') (adapted from Robeyns, 2003 and 2005).*

We would like to propose that the capability approach can help to better understand and organize ICT4D projects by shedding light on the following issues—issues that we encounter in our practices of working in the *WeCare* project:

- The relationships between means (ICT services that enables or empowers people), and ends (improving people's well-being);
- The design of *affordances* for online social networking that enable people to develop their capability to communicate, cooperate and participate;
- Ways to promote social networking *habits* that enable people to develop their capability to communicate, cooperate and participate;
- The 'problem' of empowerment, which occurs when 'we' (designers) organize interventions to help 'them' (older people);
- Identifying relevant capabilities quantifying these on the level of capabilities (rather than on the level of commodities or behaviour).

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Means and ends: ICT and well-being

Alkire (2005) remarked that 'clarity about the objective' is a 'fundamental strength' of the capability approach, the objective being: the empowerment of people to organize their lives so that they can enjoy 'valuable beings and doings'. This way of first starting with exploring and articulating the objective—the ends one aims to achieve—and then reasoning backward to explore and develop appropriate and practical means offers a welcome alternative to *technology push* approaches which tend to focus on the means, rather than on the ends. Postman, for example, critiqued technology push approaches in the ICT industry (1993: p. 61):

> Attend any conference on telecommunications or computer technology, and you will be attending a celebration of innovative machinery that generates, stores, and distributes more information, more conveniently, at greater speeds than ever before. To the question "What problem does the information solve?" the answer is usually "How to generate, store, and distribute more information, more conveniently, at greater speeds than ever before".

Similarly, Thackara wrote about how technology has evolved from a collection of tools used for doing things into a self-perpetuating system, so that we tend to focus entirely on the means and forget about the ends (2006: p. 189):

> We've constructed ourselves an industrial system that is brilliant on means, but pretty hopeless when it comes to ends. We can deliver amazing performance, but we are increasingly at a loss to understand what to make and why.

Alternatively, the capability approach focuses on *means*—equality, justice, well-being—and sees *freedom* as a both the '*primary end'* ("constitutive role") and the *'principal means'* ("instrumental role") of development and empowerment (Sen, 1999: p. 36) . In short: the focus on means of the capability approach is a welcome alternative in the ICT sector.

Next, we will discuss *affordances* and *habits* and argue that affordances and habits are located on the level of capabilities, i.e. in-between commodities and behaviour.

Designing affordances for social networking

The design of products and services can be understood as the provisioning of affordances, so that these artefacts suggest possible actions to people—which can prompt a person to conduct specific actions by using this artefact (Gibson, 1979; Norman, 1988). This perspective draws attention to the values that designers—intentionally or unintentionally—embed in the artefacts that they develop. Questions that arise from this are often discussed under the heading of *value sensitive design* (Friedman & Kahn, 2003; Cummings, 2006; Albrechtslund, 2007; Flanagan et al., 2008; Van de Poel, 2009; Manders-Huits, 2010).

Similarly, Oosterlaken (2009) argued that designers need to pay attention to this process of embedding values, which typically concerns the making of many decisions on *design details*:

Values such as privacy, autonomy, sustainability, safety, and justice can be realized in our technologies—or these could rather embed and create the opposite: injustice, insecurity and so on. And many different design options are generally available during the development process of a new technology or product. This means that the *details of design are morally significant*. If technologies are value-laden and design features are relevant, we should—so it has been suggested—design these technologies in such a way that they incorporate our moral values. … If one is interested in making the introduction of a new technology … one should be interested in its design.

The social networking services that are developed in the WeCare project provide affordances to people for live video communication, for text-based exchange of ideas and discussions and for organizing and scheduling activities, see Figure 3. One can argue that these services embody specific values that the project-team members assume to be critical to the well-being of older people, such as *communicating* with others (facilitated by discussion forums and messaging); and *participating* in joint activities (facilitated by the shared calendars and contact details).
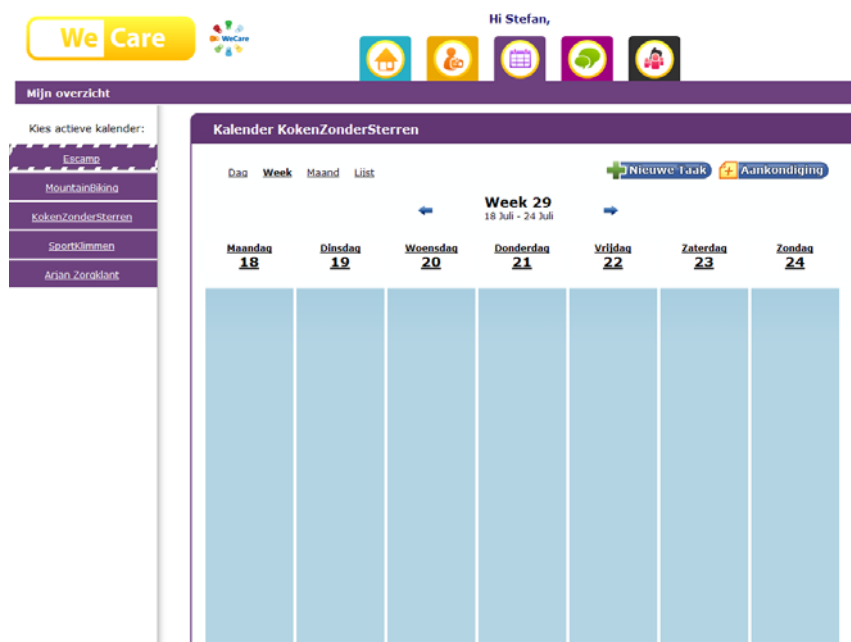

Figure 3. Screenshot of the WeCare social networking service that is piloted in The Netherlands (from http://www.wecare-project.eu/nederlands). The five coloured icons provide access to basic functionalities (from left to right): overview (blue); people and contact details (orange); shared calendars (purple); discussion forums (red); and instant and mobile messaging (black).

We would like to propose that these *affordances* and the design of these *affordances* are located on the level of capabilities because people can choose whether and how to use these affordances. Affordances are more specific and more detailed than commodities; they involve *design details* and enable people to practically use the available commodities.

Promoting habits for social networking

We understand that the availability of specific online services—the diverse details of which need to be carefully designed, ideally in close cooperation with potential users—are necessary but not sufficient for people to use these services productively. What is needed are capabilities that enable people to use these services effectively; we propose to call these 'habits'.

Furthermore, we are aware that there are already many online services with similar aims (allowing people to participate in social networks), both general online services, like Facebook, as well as specific online services aimed, for example, at older people or at organizing informal help, like ShareCare, Vicasa, Helpjemee, Buurtlink and Mantelplan (all Dutch). Therefore, the project's focus is *not* on developing ('yet another') social networking service, but rather on learning about the effects of social networking on social well-being (e.g. as input for 'evidence based' interventions) and on learning about business models, strategies that can help to promote deployment and usage of such services (e.g. as input for local or national policies and industry).

One of the key deliverables of the project will be a list of practical recommendations for citizens—and also for technology developers, business developers and policy makers—that will help them to develop and deploy social networking services. We drafted a (tentative) list of seven 'Social Networking Habits' and hypothesize that these will empower older people to participate effectively in online social networks and to improve their well-being (Steen et al., 2011):

1. Express yourself carefully and in detail and express personal information and feelings;
2. Spend time online, in terms of frequency and/or in terms of duration;
3. Communicate with people that (have) experienced similar situations;
4. Participate in community activities (community commitment), especially 'in real life';
5. Provide and receive support to and from other people, online and/or offline;
6. Give and receive appropriate levels of trust to others, online and 'in real life'; and
7. Act with respect for your own and for other people's privacy.

We would like to propose that these *habits* and the promotion of these *habits* are located on the level of *capabilities* because people can choose whether or how to develop these habits and they can find out which habits work for them and which do not work for them. Habits are less specific and detailed than behaviour and offer a relatively large amount of freedom.

Empowerment and participation

Thinking in terms of *affordances* and *habits* (above) is similar to thinking in terms of designing 'choice architectures' and in providing 'nudges' to people (Thaler & Sunstein, 2008). These approaches acknowledge that one needs to make decisions in the design of artefacts, and that these choices will influence people's behaviour when interacting with these artefacts, while—at the same time—allowing an amount of freedom in whether and how to use these artefacts.

What is critical to the capability approach is the focus on *empowerment*, on promoting development and freedom, and on organizing processes of *participation*, in which (potential) 'users'—for example, the people that are targeted in the project—are involved in the project.

One example of a project that is similar to the *WeCare* project can serve as an illustration of the careful approach that is needed when researchers and designers go out to meet 'users' to cooperate with them, with the aim of helping them. Thackara (1999, p. 8-9), at that time manager of the *Presence* project, which aimed to introduce the internet in older people's lives in order to increase their well-being, described their first encounter with 'their' users as follows:

> Someone said, "There are a lot of older people out there; let's see if we can find some and help them by giving them this Internet stuff in an easy-to-use format". So we went and found some older people and told them how we had come to help them with the Internet, and they said, "Piss off!" which is apparently how they say, in some long-lost dialect, "We don't need your patronising help, you designers. If you've come here to help us, you're wasting your time; we don't want to be helped, thanks just the same. Yet we do have some interesting observations to make about our daily lives, about our lifestyles, about our communication, and about all of their attendant dysfunctions. If you could kindly change your attitude and help us explore how we will live, then perhaps we can do something together". Or words to that effect.

Approaching people with the idea of creating something for them is likely to be appreciated less than approaching them with the goal of jointly learning and jointly creating (Steen, 2008). Similarly, Sen (1999: p. 284) noted that: "There is a difference between 'nannying' an individual's choices and creating more opportunity for choice and for substantive decisions for individuals who can then act responsibly on that basis."

In the *WeCare* project, we organize a human-centred design process (HCD) (ISO, 1999), in which project-team members cooperate with older people during research, design and evaluation, following a multidisciplinary approach of combining technology, user experience and business and policy perspectives, and an iterative approach of trying-out and learning.

Cooperation with (potential) users and with organizations that represent (potential) users is critical to this approach: in Ireland technology developer Skytek cooperates closely with the Irish Farmers' Association and with individual farmers; in Finland technology developer Videra and research organization VTT cooperate closely with care service provider Caritas and their clients; in Spain research organization I2BC and care service provider FASS cooperate closely with clients of FASS and people in one local community (Lebrija); and in the Netherlands technology developers Ericsson and Sharecare/Simac cooperate closely with ANBO, which represents older people and with people in one local community (The Hague).

The hypothesis that the availability of an online social networking service and the practising of social networking habits will empower people to improve their social interactions and that this will help them to improve their well-being (Figure 1) will be tested during trials in

these four countries, for instance, by conducting surveys amongst the participants, inquiring about their social well-being before and after the trials.

Identifying and quantifying capabilities

A last topic that we will discuss is related to the problem of identifying which capabilities to focus on in a project, and the problem of quantifying these capabilities in order to organize and evaluate projects or initiatives. Oosterlaken (2009) commented on these same problems:

> … there is a (largely empirical) question of which capabilities can be expanded (or perhaps unintentionally hampered) by new technology, and products, and what engineers and designers (can) contribute to this. … another important question …
> is who should determine which capabilities and design solutions are relevant in a specific case, and what should happen in the case of disagreement or conflicts of interests.

There is debate on whether one should make lists of capabilities that one should focus on for each individual project or initiative (associated with Sen) or whether there could be one list of general capabilities (associated with Nussbaum). Nussbaum (Nussbaum, 2000), for example, proposed the following list of capabilities: 1. Life; 2. Bodily health; 3. Bodily integrity; 4. Senses, imagination and thought; 5. Emotions; 6. Practical reason; 7. Affiliation; 8. Other species; 9. Play; 10. Control over one's environment.

In HCD and ICT4D, project-team members typically involve (potential) users and other stakeholders in research, design and evaluation activities. The question then remains whether these users and stakeholders can influence choices—which are made implicitly or explicitly—concerning which capabilities are focused upon in the project. From the start of the *WeCare* project, its focus was on empowering older people to *communicate* socially and effectively with family and friends, to *cooperate* with others, for example, in offering and receiving help to and from others, to *participate* in joint activities, for example, in their neighbourhood, to meet new people with similar interests—in short: to help them to improve their social well-being.

Both the affordances that are designed (contact details; shared calendars; discussion forums; and messaging) and the habits are promoted (express yourself; communicate; participate; provide and receive support; give and receive trust; respect privacy) aim to empower people to communicate, cooperate and participate. In the *WeCare* project, freedom is promoted for people to explore and find out whether and how to use these affordances and whether and how to develop these habits. Communication, cooperation and participation are promoted as capabilities in the project.

Furthermore, the online social networking services that are designed in the *WeCare* project are implemented on relatively open architectures, so that other parties can easily add their components in a 'pick and mix' manner. This open and flexible architecture could also be an example of participation and empowerment, but on the level of businesses.

The question concerning the *quantification* of capabilities is relevant because many projects and interventions are organized and evaluated in terms of commodities ('the project will aim to provide 100 households people with computers and internet access') or behaviour ('the initiative's goal of increasing the usage of recycled material with 10% was realized'), possibly because commodities and behaviour can be quantified relatively easily, as if they are input and output variables.

Organizing and evaluating in terms of capabilities is, of course, also very common ('the project aims to empower people to participate more actively in their local communities'), but it is difficult to quantify capabilities in such ways that they do not become like commodities or like behaviour. One would not want to quantify 'more active participation in local communities' in terms of availability of means to participate (e.g. building a community centre) or in terms of specific and desirable behaviour (e.g. participating to specific activities). Rather, one would want to quantify participation in terms that include and stress freedom and development, in terms of the ways in which specific people feel that they are actually able to use the available commodities and means (e.g. because they provide practical *affordances*) or in terms of the ways in which specific people feel that they are actually able to organize and influence their own lives (e.g. because they have developed relevant *habits*).

Various authors have started to get a handle on quantifying capabilities at an individual level, i.e. in terms of whether individual people are indeed empowered and indeed experience well-being because they can organize their lives in ways that 'they value and have reason to value' (Sen, 1999: p. 1). For instance, Anand et al. (2005; 2011) developed models and made analyses to study the relationships between economic activity and human welfare and between capabilities and life satisfaction. Anand et al. (2005) found "evidence that a wide range of capabilities exhibit statistically significant relations to well-being".

Conclusion and ideas for future work

We have explored several ways in which capability approach can be valuable and useful to better understand and organize processes of designing ICT. Using one ICT4D (information and communication technology for development) project in which the authors work (*WeCare)* as an example, we discussed the relationship between means and ends, which is often problematic in technology push approaches which are typical for the ICT sector. Furthermore, we discussed how the capability approach can offer an appropriate 'in the middle' focus, in-between means (technology) and ends (well-being), and how capabilities can be made operational in terms of designing (online social networking) *affordances* and promoting positive (social networking) *habits*, which together will empower people to communicate, cooperate and participate, in order to improve their well-being. Moreover, we have discussed the 'problem' of empowerment, which occurs when 'we' (designers) organize interventions to help 'them' (older people) and

proposed that HCD (human-centred design) is a way of organizing participation of users and other stakeholders within the context and focus of a project.

Future research will focus on quantifying capabilities, so that one can more precisely organize and evaluate ICT4D or HCD projects and initiatives. In the *WeCare project* we plan to make a modest attempt at doing that, in terms of carefully designing and evaluating affordances (design details, which provide sufficient freedom for people) and in terms of promoting and evaluating habits (e.g. skills and motivations, which provide sufficient freedom for people), see Figure 4. Furthermore, we aim to explore the *dynamics* and feedback mechanisms (see dashed arrows in Figure 4) between capabilities and commodities (e.g. how increased capabilities can empower people to use more or other commodities) and between behaviour and capabilities (e.g. how the development of behaviour can help to further develop capabilities).
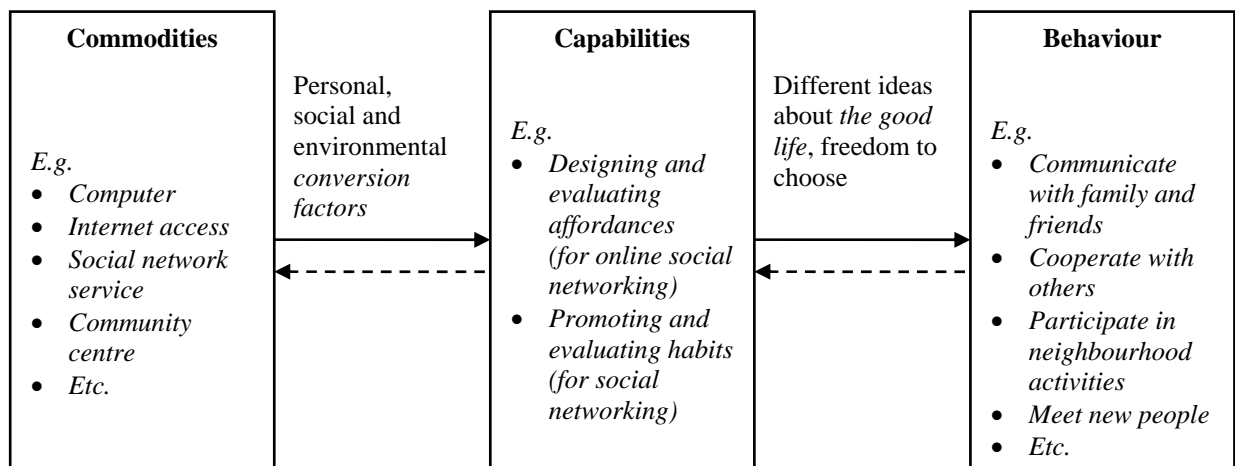
Commodities	Personal, social and environmental *conversion factors*	Capabilities	Different ideas about *the good life*, freedom to choose	Behaviour
E.g. • *Computer* • *Internet access* • *Social network service* • *Community centre* • *Etc.*		*E.g.* • *Designing and evaluating affordances (for online social networking)* • *Promoting and evaluating habits (for social networking)*		*E.g.* • *Communicate with family and friends* • *Cooperate with others* • *Participate in neighbourhood activities* • *Meet new people* • *Etc.*

Figure 4: An attempt to make capabilities *operational in terms of designing and evaluating affordances and of promoting and evaluating habits (adapted from Robeyns, 2003 and 2005).*

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