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Scaling up health innovations for people living with dementia; A social innovation approach

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Abstract

Context: For the upcoming 35 years a sharp increase of people with dementia is expected worldwide (WHO, 2012). 'Ageing in place' will be stimulated to overcome this large socio-economical threat. The use of assistive innovations in home situations seems promising (Nijhof, 2009). These innovations, however, still do not reach a large population (Oirschot, 2010). Scaling up innovations in public sectors meets more challenges in comparison with private sectors (Micheli, 2012; Glasgow, 2012). This study investigates the open collaboration between various stakeholders who influence the purchase and use of technology for people with dementia in a home situation. From this social innovation approach, barriers and facilitators of the scaling-up of technology have been explored.

Method: An Ecosystem research model for Dementia Care was used (EDC). The EDC structure consists of 13 representatives of companies, knowledge institutes, healthcare organisations and governmental bodies, to investigate the different perspectives of scaling up. Focus group meetings and supplementary semi-structured interviews with respondents of the named stakeholder groups and people who are living with dementia were performed.

Results: From June 2014 until now, the EDC has grown to almost 100 participants, who were aligned with healthcare organizations (n=5), companies/care insurance (n=17), knowledge institutes (n=6), governmental bodies (n=4) and people living with dementia (n=20).

Preliminary results show that collaboration between the stakeholders is essential to make scaling-up possible, but different expectations and assumed responsibilities dominate. Conclusions: During a half year time, over 40 stakeholders are collaborating in a social innovation approach to make scaling-up of assistive innovation in the dementia care possible in the near future. To make this collaboration effective, it seems that individual stakeholder groups need a linking pin between each other. By the use of an EDC, this connection could be made by adjusting the communication through shared knowledge, shared savings and shared values, which is expected to have benefits for the scaling-up of assistive innovations.

Introduction

Worldwide, approximately 44.4 million persons are living with dementia. This number will increase to 135.5 million in 2050 (WHO, 2012). Ageing in place will be stimulated by governments to overcome this large socio-economical threat and is also preferred by the people who are living with dementia themselves (Jonker *et al,* 2009; Van der Leeuw, 2007; Zantinge, 2011). Family care (often partner and/or children) plays an important role in making ageing in place possible. Providing care in a home setting is not always easy, and is for many informal caregivers a burden, especially in the case of intensive care during a long time (Zwaanswijk, 2010). Therefore, adequate, early assistance for people living with dementia is needed. The use of assistive innovations in home situations seems promising to support ageing in place. The approach supports Activities of Daily Living and thus eases the burden of family care (Nijhof, 2009). However, many of these innovations still do not reach a large number of people (Oirschot, 2010). Scaling up innovations in public sectors has more challenges compared to private sectors, due to hierarchic structures, resistance to change, and risk avoidance which hinders the adoption process of potential users (Micheli *et al*, 2012). Collaboration between private and public sectors with all stakeholders involved seems conducive scaling up (Glasgow *et al*, 2012; Micheli *et al,* 2012). Therefore, a national Ecosystem of Dementia Care (EDC) in The Netherlands has been formed. One of the main foci is scaling up innovations in the public health sector. EDC is a pragmatic, open, social innovation network where healthcare organisations, knowledge institutes, companies, governmental bodies and people living with dementia collaborate to make innovations accessible for people living with dementia at home. It investigates who and what influences the purchase and use of technology for people living with dementia at home from different stakeholder perspectives, while all these stakeholders influence these processes of purchasing and using technology. From this social innovation approach, barriers and facilitators of the scaling-up of technology were explored. Simultaneously, this network is used to overcome the barriers discovered; thus the obtained solutions will directly be implemented into daily practice.

Method: Dutch Ecosystem Dementia Care

The pragmatic open network where research and practice are merged is still growing. From June 2014 until now, the EDC has grown to almost 100 participators, who were aligned with healthcare organizations (n=5), companies/care insurance (n=17), knowledge institutes (n=6), governmental bodies (n=4) and people living with dementia (n=20). Monthly, 13 representatives of these quadruple helix participators collaborate to build a network which investigates the different perspectives of scaling up and overcome the barriers found. Based on experienced difficulties by people living with dementia at home, 11 different domains were described by the Dutch psycho-geriatrician association 2014. From these 11 domains, four themes were chosen by a panel of experts from EDC, to actively explore. These four themes were:

1. Dementia friendly communities
2. Stimulating physical activity
3. Self-management in dementia care
4. Implementation of health care technology

All four themes share the same mission, namely: to stimulate ageing in place for people living with dementia. To achieve this mission, one vision will be enhanced based on the key principles of an ecosystem described by Bergvall-Kåreborn and Ståhlbröst (2009): a pragmatic open innovation network approach where co-creation is leading, and where high value innovations can be tested in a real life environment like a home situation, that are potentially sustainable for people living with dementia. The particular subject of this paper is the research of "Implementation of health care technology". The EDC is used as a social innovation approach to search for barriers and facilitators of scaling up health innovations for people living with dementia and stimulate collaboration. All members of EDC are using shared values, shared knowledge and shared savings as the fundaments of this collaboration. To study the barriers and facilitators, focus group meetings (n=six) and supplementary semi-structured interviews (n=16) were performed with respondents of health care organisations, people who are living with dementia, care insurance companies, entrepreneurs and members of knowledge institutes. The data were transcribed, coded and codified.

Results: Barriers and facilitators for scaling up

Six focus group meetings and 16 supplementary semi-structured interviews with several stakeholders (healthcare professionals, members of different knowledge institutes, employees of health insurance companies, entrepreneurs and people who are living with dementia) were performed. Results show that collaboration between the stakeholders is a strong facilitator to make scaling-up possible, in particular to create awareness and acceptance of the technology among potential users. People living with dementia utter the need of a link between themselves and the technology. This means that they perceive that the human aspect is to come into contact with technological solutions is indispensable. As a client words it:

> "So yes, it's all about the link between the client, health care professional and producer, there has to be something in between".

It has been found that media such as the internet, often used by entrepreneurs to promote their products to create awareness, are not sufficient to achieve acceptance and adoption of health care innovations. Regarding this human link, all stakeholder groups see health care professionals as most important persons to fulfill this role. More specific, experts in dementia care such as dementia consultants are indispensable.

Furthermore, the barriers discovered to an effective as well as an efficient pragmatic collaboration were different expectations and assumed responsibilities. For example, different expectations regarding to which stakeholder should finance assistive technology, seems to be an important barrier. Furthermore, little consensus exists regarding where an overview of information can be found and which information is objective and reliable. Results show that a clear description of tasks and task divisions for all stakeholders facilitates scaling up, while the lack of such a description results in an impasse regarding the practical execution of tasks.

Apart from the adoption process of technology, barriers and facilitators were also found in the earlier stage of the development of technology. Consensus about the collaboration between product developers and people with dementia in an early developmental stage, is essential to achieve proper, desirable products. In practice, entrepreneurs are not used to the involvement of people with dementia as a co-creator in a developmental stage but more as a tester for prototypes in a later stage of the development. Acceptance and adoption of technology will, according to all stakeholders, strongly be facilitated by co-creation in an early stage of the development.

After awareness among potential users – people with dementia - is created, another strong barrier exists regarding the acceptance of the technology in order to achieve actual purchase and use. "It seems too complex to use," has often been said by clients as well as health care professionals. Practical collaboration between technicians and health care professionals is found to be facilitating for translating technical innovations to practical instruments. They are, according to members of knowledge institutes, complementary in knowledge and skills that are both needed to support the use, user-friendliness, and feasibility to use technology by people who are living with dementia. As a member of a knowledge institute says:

> "You shouldn't address that matter [innovations for people who are living with dementia] only from a healthcare perspective, or just from a technical perspective. You have to bridge those (…) and there comes the role of the health care professional. They have to be trained to talk with such a technician, and then he can translate the solution to the client with dementia in the right manner."

Recommendations for future research and practice

Practical recommendations for the future are particularly related to the indispensable linking pin between clients, health care professionals and product manufacturers. To achieve this, facilitation of practical collaboration among different stakeholders is recommended, into which several follow-up actions can be distinguished. One major facilitator for scaling up innovations is the acceptance and adoption of these innovations by the users. A positive trend is going on to stimulate co-creation by including users at the beginning of an innovation track as co-creators and not only as testers at the end of an innovation track. A huge advantage of this co-creation approach is the direct input of users, product developers know faster if the innovation is successful

and ready for market or needs a new iteration phase (Van Gemert-Pijnen *et al,* 2011). Although co-creation is important in developing innovations to understand user needs better, more attention should be paid to social innovation in scaling up innovations. This finding is supported by Volberda (2013a, 2013b, 2014), whose studies show that 75% of an innovation's success is due to the technology and 25% derives from the social aspects i.e. social innovation.

Future research should study the direct effects of several existing and new collaborations between private and public parties in dementia care regarding the level of acceptance adoption and actual use of innovations by people who are living with dementia, as well professional caregivers. Collaboration of all stakeholders with a shared vision of shared knowledge, shared savings and shared values, seems very promising to make acceptance, adoption and therefore scaling-up possible. To make statements about sustainability of EDC, research of longer duration is recommended.

References

BERGVALL-KÅREBORN, B and STÅLBRÖST, A. (2009) Living lab: an open and citizen-centric approach for innovation. *International journal of innovation and regional development,* **1** (4)*,* 356-370.

GLASGOW, R. E., VINSON, C., CHAMBERS, D., KHOURY, M.J., KAPLAN, R.M. and HUNTER, C. (2012). National institutes of health approaches to dissemination and implementation science: current and future directions. *American journal of public health*, **102** (7), 1274-1281.

JONKER, C.H.R., VERHEY, F.R.J. and SLAETS, J.P.J. (2009). *Handboek dementie*. Apeldoorn, Bohn Stafleu van Loghum.

MICHELI, P., SCHOEMAN, M., BAXTER, D. and GOFFIN, K. (2012). New business models for public-sector innovation. *Research-technology management*, 51-57.

NIJHOF, N., VAN GEMERT-PIJNEN., J.E.W.C., DOHMEN, D.A.J. and SEYDEL, E.R. (2009). Dementia and technology. A study of technology interventions in the healthcare for dementia patients and their caregivers. *Tijdschrift voor gerontologie en geriatrie* [e-journal], **40** (3), 113-132.

OIRSCHOT, R., SOONIEUS, E., BAKE, J. and KROON, R. (2010). *Eindrapportage Kennis (in) kaart succes-en belemmeringsfactoren voor het versnellen van opschaling en innovaties.* [pdf]. Den Haag, Alares. Last accessed 27 October 2014 at:
http://www.zorgvoorinnoveren.nl/upload/file/Rapportage%20Kennis(in)kaart%20-%20Onderzoek%20naar%20succesfactoren%20en%20belemmeringen%20bij%20opschalen%20van%20zorginnovatie.pdf

VAN DER LEEUW, J. and WILLEMS, C.G. (2007). *Aanzet van een functioneel programma van eisen voor domotica voor* thuiswonende mensen met dementie. Utrecht, Vilans, kenniscirkel domotica voor wonen en zorg. Last accessed 16 November 2014 at:
http://www.vilans.nl/docs/producten/Technologiethuiswonendementerende.pdf

VAN GEMERT-PIJNEN, J.E., NIJLAND, N., VAN LIMBURG, M., OSSEBAARD, H.C., KELDERS, S.M., EYSENBACH, G. and SEYDEL, E.R. (2011). A holistic framework to improve the uptake and impact of eHealth technologies. [Review]. *J Med Internet Res*, **13** (4), e111. doi: 10.2196/jmir.1672

VOLBERDA, H.W., COMMANDEUR, H., VAN DEN BOSCH, F. and HEIJ, K. (2013). Sociale innovatie als aanjager van productiviteit en concurrentiekracht. *M&O,* **5**, 5-34.

VOLBERDA, H.W. (2014). *Investeren in sociale innovatie.* Rotterdam, Inscope.

VOLBERDA, H.W., HEIJ, K and VAN DEN BOSCH, F.A.J. (2013). *Erasmus concurrentie en innovatie monitor 2012-2013.* Rotterdam, Inscope.

WORLD HEALTH ORGANIZATION. (2012). *Dementia: a public health priority*. [pfd]. World health organization. Last accessed 3 November 2014 at:
http://apps.who.int/iris/bitstream/10665/75263/1/9789241564458_eng.pdf?ua=1

ZANTINGE, E.M., VAN DER WILK, E.A.,VAN WIEREN, S. and SCHOEMAKER, C.G. (2011). *Gezond ouder worden in Nederland.* Rijksinstituut voor volksgezondheid en milieu (RIVM)
ZWAANSWIJK, M. (2010). Problemen en wensen van mantelzorgers van mensen met dementie: een vergelijking tussen de beginfase en latere fasen in het ziekteproces. *Tijdschrift voor gerontologie en geriatrie,* **4** (4), 162-171. doi:10.1007/BF03096203