Spring 4-9-2014

Collective Digital Innovation: Integrating The Expertise Of Multiple Specialist Stakeholders Including Young Homeless People In The Creation Of Mobile Apps For Social Change

Sarah Snoxall
Antennae Ltd., snoxall.sarah@gmail.com

Kathy Oldridge
Antennae Ltd., kathy.oldridge@antennaellp.com

Will Venters
London School of Economics, W.VENTERS@LSE.AC.UK

Follow this and additional works at: http://aisel.aisnet.org/ukais2014

COLLECTIVE DIGITAL INNOVATION: INTEGRATING THE EXPERTISE OF MULTIPLE SPECIALIST STAKEHOLDERS INCLUDING YOUNG HOMELESS PEOPLE IN THE CREATION OF MOBILE APPS FOR SOCIAL CHANGE

Sarah Snoxall
Antennae Ltd. 4 Percy Street London, UK.
Email: sarah.snoxall@antennaellp.com

Kathy Oldridge
Antennae Ltd. 4 Percy Street London, UK.
Email:kathy.oldridge@antennaellp.com

Will Venters
London School of Economics and Political Sciences, Houghton Street, London.
Email: w.venters@lse.ac.uk

Research in Progress

Abstract

This paper reports on a collaborative action research project which sought to combine the knowledge and expertise of multiple specialist organisations with the understanding and insight of young homeless people in order to find digital ways of supporting them before they became homeless. We discovered that adopting a collective approach to the demands of digital innovation enabled us to develop precise hypotheses and resulted in mobile apps for young people targeted at specific moments of emotional and practical need. The action research project is reflexively analysed in seeking to understand this process of collective digital innovation.

Keywords: Hidden Homelessness, Action Research, Digital Innovation, Young People, Reflexivity, Third Sector.

1.0   Introduction

1.1   Background

For over a hundred years the UK third sector has evolved to address society's problems including ill health, violence, homelessness and poverty. The third sector is defined as non-governmental and non-profit-making organisations, including charities, voluntary and community groups and cooperatives. In general this sector consists of multiple separate organisations targeting particular needs. Recent digital innovations, such as mobile applications or social networking, may offer an opportunity to address these needs better, however the existing charity sector is often ill-equipped and lack the necessary knowledge to innovate effectively and to capitalise on these opportunities. There is therefore a need to identify approaches to innovation that can be employed by the third sector to integrate their expertise with specialists from other fields in addressing particular societal challenges.

This paper reports on an action research study that addresses this challenge through the collective innovation of a new mobile smartphone app to tackle the societal challenge of hidden homelessness. We report on the process by which innovation was organised, and reflexively analyse the early outcomes. Our aim is to present an account of both the challenge being addressed and the innovation process being employed in addressing this challenge. Theorisation is kept to a minimum, with the paper instead focusing on presenting a case study from which future theorisation may be undertaken. The paper does however reflect on the alignment of the approach to existing Information Systems' practices of participative design.

The paper is organised as follows. Firstly the societal problem is described. This forms the "problem" the research is seeking to address. Secondly the methodology of action research is briefly described. Thirdly we describe the three cycles of intervention and action that occurred in attempting to address this "problem". Finally we reflect on the action research cycles, and provide tentative conclusions. The action research is currently ongoing and therefore the findings from this paper can only be described as preliminary.

1.2   The societal challenge being addressed: Hidden Homelessness as a case study of collective innovation

The challenge of this project was to design support for a hard to reach group of young people, the 'Hidden Homeless'.

80,000 young people in the UK experience homelessness each year (Crisis, 2012). With housing services stretched, 1.8 million households on the social housing waiting list, rents increasing and youth unemployment high, this is set to worsen (Crisis, 2012; Joseph Rowntree Foundation, 2012). But these numbers underestimate the problem, because many of the hardest to reach are 'hidden homeless' (Crisis, 2011). They are physically invisible to homeless care service providers and to statistical research, preferring to 'sofa surf', stay in squats, sleep rough or exist through other temporary living arrangements than seek official help. The deep sense of shame they experience means that they are also unlikely to tell friends of their situation, preferring to keep their real circumstances to themselves so that they are not labelled or judged (Crisis, 2011). Many of them do not even recognise themselves as homeless or see homelessness as a term that might apply to them – "*that's for hobos on the street, not for me*" (young person, this study). It is this holding back of information combined with their lack of self-awareness that makes them extremely difficult to identify or help.

Multiple organisations currently provide support for homeless people (Crisis, Shelter, DePaul, Centrepoint), giving shelter, food and counselling to them once they present themselves as homeless. Similarly there are many charities that help vulnerable young people (Youthnet, NSPCC, Childline). However, the journey to homelessness for young people is varied and complex, involving prolonged periods of yo-yoing to and from the family home, staying at friends' houses, squats or sleeping rough. There is less specialised housing or psychological support available during the early stages of this journey.

Research suggests that there is also an opportunity with this age group to make more of digital technology: 81% young people have a smartphone (Emarketer, 2013) and even the most vulnerable young person will hold onto her mobile phone until the very last minute (DePaul Nightstop, 2013; St Basil's, 2013). In addition, HCI research into the use of

digital technology by homeless people has found that homeless people seek digital technology for many purposes and are skilled at overcoming problems, such as accessing wifi or power sockets (Karabanow & Naylor, 2010; Woelfer & Hendry, 2010; Woelfer et al, 2011). Woelfer et al further hypothesize that *"the widespread diffusion of digital and mobile technologies into homeless communities is changing the nature of homelessness in ways just being discerned"* (Woelfer et al, 2011 p. 1708?). By understanding the early stages of the journey to homelessness in more depth, we wanted to explore the opportunity for digital support before young people present as homeless.

Youthnet is a charity specialising in providing holistic emotional and peer support to 16- to 24-year-olds through digital media. Finding an increase in questions and discussions relating to homelessness on their website[1], they believed there was a need for holistic support for young people in this area. In addition, while the HCI research considered how the use of mobile technology might keep homeless young people safe, Youthnet wanted to explore the possibilities provided by mobile technology for emotional and psychological support – from peers as well as from experts. By combining the knowledge of charities that support homelessness with their own expertise, they felt there was a real opportunity to innovate impactful mobile applications that would not duplicate existing services and would be ideally suited for early intervention at specific moments of need. They also believed that collaborating with young people would further help us understand when, where and how best to provide support. We therefore identified primary and secondary stakeholder groups as co-participants in this research. Primary stakeholders included young people with some experience of homelessness and charities actively supporting homelessness, while secondary stakeholders consisted of specialists in digital communications, research and academia. The challenge of this research project was therefore to harness the knowledge and expertise of multiple, often competing, organisations and vulnerable young people in order to find digital ways of supporting them before they became homeless. Creating a collaborative working environment can be particularly challenging when the parties involved are competing for funding, donations and public awareness, but we believed that there was great potential for helping young people turn a potentially irreversible situation into a different but supported pathway to adulthood.

---

[1] www.thesite.org

1.3   Active Participatory Design

To enable a participatory and an adaptive approach to research, we drew on the principles of Action Research (Checkland and Holwell 1998, Baskerville and Pries-Heje 1999). Action research is based upon the premise that action brings about understanding and that the social setting is irreducible. This research draws upon Hult and Lennung's definition which asserts that *"action research assists in practice problem solving, expands scientific knowledge, enhances actor competencies, is performed collaboratively in an immediate situation, uses data feedback in cyclical process, aims at an increased understanding of a given social situation, is applicable for the understanding of change processes in social systems and is undertaken within a mutually acceptable ethical framework"* (Hult and Lennung 1978). We begin from the premise that only through integrating different experiences of homelessness and digital technologies, and learning from this integration, can we progress the use of IT to address this societal challenge. For as Lau reminded us: *"With the increasingly complex role of information technology as a key enabler of social change that can lead to new forms of practices, organisations and communities, the use of an action-oriented methodology should improve our understanding of such social phenomena through "doing" and learning through "experience""* (Lau 1999).

Action research requires the building of theory and description within the context of practice itself (Braa and Vidgen 1996, Braa and Vidgen 1999). For us this context consisted of a shared space between a number of organisations involved in addressing homelessness. The action-research was centred around Youthnet who initiated the research, oversaw the ethical considerations, and provided the physical space for meeting and interaction. A core team of innovation specialists and researchers were assembled. These members were responsible for drawing together the various organisations' representatives, and acting as "springboards" and facilitators of the various innovation activities. They were similarly responsible for coordinating the innovation events. This paper provides a reflexive account of their involvement in this action research (Ashmore 1989, Alvesson and Skoldberg 2000) within the discussion section. Reflexivity *"aims at an interpretative, open, language-sensitive, identity-conscious, historical, political, local, non-authoritative and textually aware understanding of the subject matter"* (Alvesson

and Deetz, 2000, p. 115) and focused the researchers upon their own actions during the research process (Mitev and Venters 2009).

2.0   Research Methodology

The project followed a 3-cycle process of action research focused on knowledge synthesis, theorisation, original research and concept innovation. Table 1 illustrates the three stages of our approach. All workshops and interviews with young people were recorded on audio or Skype.

In many ways the action research process might be conceived as participative design activity, though those involved (excepting an Information Systems academic) were unaware of this theory alignment. Epistemologically, an interpretivist approach was arguably adopted (Checkland, 1999) seeking to reconcile divergent interpretations through collaboration. Just as participative design seeks appreciation of the complexity of a socio-technical context, so such understanding was sought through the actions of the researchers from a range of disciplinary backgrounds drawing upon similar desires to appreciate (Vickers, 1970). In considering the project as participative design we can describe its characteristics (Baskerville, 1999) thus: its process was iterative, adopting a highly fluid structure. Involvement was collaborative with no party seen to hold authority. The primary goal of the research was improvement of the lives of the hidden-homelessness, achieved through the design of a mobile phone App.

Cycle Objectives	Participants	Method
Design the Project: Synthesise knowledge and develop hypotheses for how digital support can make a difference	Expert Organisations (7): Youthnet, LSE-academic, Shelter, Centrepoint, DePaul, Peabody Trust, St Basils	Workshop and one-to-one interviews (telephone, face-to-face)
Develop Insights: Understand the triggers for homelessness and their emotional and practical needs	16- to 24-year-olds who had experienced homelessness (13)	Workshop and in depth one-to-one interviews (face, telephone, Skype)
Innovate and Co-create: Generate broad, ambitious, innovative ideas for mobile apps	16- to 24-year-olds who had experienced homelessness (8), Youthnet panel of 'young leaders' (3) & Expert Organisations (7): Youthnet, LSE-academic, Shelter, Centrepoint, Albert Kennedy Trust, Harriman Steel, Scramboo.	3 workshops

3.0   Outcomes of the collective innovation

3.1   Cycle 1 – Design the Project

The first cycle with third sector experts was important for its ability to build a collaborative team and agree a psychological contract that guaranteed confidentiality and mutual benefit. In addition, with so much information about homelessness available, we needed to synthesize our collective knowledge and find a way to make something complex manageable and meaningful.

Prior to our first participative session, we synthesized the knowledge and research that already existed in this area. This was then used in the first workshop to establish our collective knowledge and to generate together a model of the path to homelessness that formed the basis of our hypotheses for supplementing existing support. We defined this path as characterised by three stages – relationship breakdown in the home, a phase of gradually slipping during which young people stay at friends' houses and move around, and a final phase as they edge closer to complete homelessness. The path is not simple or linear. After the initial shock, it is almost always a gradual process that has, what the experts termed a 'snakes and ladders' feel to it. Small things trigger a slide downwards into the next phase; small gestures help young people back up temporarily; but it becomes increasingly difficult to bounce back and mental wellbeing is significantly

eroded. Ladders can also feel absent in the early stages, many young people at risk of homelessness feel trapped: outsiders or people with no future.

With our colleagues in the housing sector, we mapped provision of services against these three stages. This mapping confirmed that, although there is substantial provision for young homeless people when they have reached crisis point, there is a lack of early, preventative services in the first two stages. Although the charities we worked with recognise this route to homelessness, it is usually beyond their remit and capacity to intervene at these early, crucial stages (see also Green et al, 2001 for a full discussion of some of the difficulties associated with mapping and tracking vulnerable young people).

3.2 Cycle 2 – Develop Insights

This cycle was designed to test the hypotheses from Cycle 1 and understand the emotional needs of young people by seeing the problem from the point of view of those who have directly experienced being one of the hidden homeless. The young people confirmed our three-stage path to homelessness, provided greater insight into their needs at each stage and generated early ideas for support.

During the first stage, relationship breakdown puts home life and living arrangements under pressure. Their needs are primarily emotional and homelessness is not something they worry about at this stage, as they are preoccupied with the internal struggles they are facing, coming to terms with issues around family, violence, abuse, culture, identity, sexuality and their role in society. Leaving home is often cited as the first step towards taking things into their own hands, even if the circumstances become forced upon them for example, by violence or abuse. *"You have to leave even not knowing if you're going to be in a worse position by declaring yourself homeless" (Young person, Birmingham).* When young people need help they turn to digital services first: online they have the ability to explore the complexities of what they are facing in private. They told us that they would seek help on a computer – either at home or at school, although they worried about privacy on public computers. Many of them also have smartphones that they use for social media and to communicate with friends.

Having left home, they feel themselves 'slipping' in the second stage because, although they recognise that they still have choices, their life is becoming increasingly out of

control and unpredictable. At this stage they have multiple needs for support. Emotionally, they need help negotiating their relationships with others as they rely on them for providing accommodation. They also need contact with others so that they can share their feelings, understand the traumas they have been through and recognise they are not alone. Practically, they need support when things feel unsafe, so that they can understand their options, find somewhere to sleep and access services to make their immediate situation better. Finally, deeply ashamed and embarrassed about not having anywhere to stay, they need to be able to access this support on their own and without anyone knowing.

> *"Was sofa surfing with my dad. No one knew. I felt horrible. I had to use public toilets to wash in. it was very degrading, humiliating. I didn't want people to label me because I thought people would give me sympathy, I didn't want that at all. I had been keeping it a secret."(Young person, London)*

They have limited access to computers, as they are reluctant to risk exposing themselves on their friends' computers, and they are increasingly dependent on their mobile phones for support. Even then, however, they may have run out of credit and they describe themselves as becoming expert in finding the shops or cafes that offer free wifi access:

> *"When you are at home, you have all the gadgets, but when you're living on your own, you can't afford the internet, a contract. You do with what you have. At first, I thought to myself what the hell am I going to do? But I had a phone. Went to internet cafes for 2 hours or so. Found places with free wifi like the Apple Store, MacDonald's."(Young person, Birmingham)*

During the third stage, they are close to homelessness and sleeping rough. They experience a chaotic lifestyle in which they are increasingly vulnerable and their primary needs are predominately practical: '*where will I sleep tonight?*' and '*how can I keep myself safe?*' Although they may still have their phones, they are unlikely to have credit and their urgent needs are better served physically than digitally.

When looking back on their experiences, young people recognise this pattern as a gradual journey towards homelessness, but as they are experiencing it, the key issue is the gap

between circumstances and perceived consequences. Although they identify early relationship breakdown or money as problematic factors in their lives, they do not directly link them to the longer-term risk of being homeless. This lack of connection between contributing factors and their consequences means that they do not see themselves in danger or access support from existing organisations until it is too late.

The core team from Antennae and Youthnet synthesised the output from the Insight Cycle to provide stimulus for the next Innovation Cycle. This involved analysing the core needs and developing scenarios or triggers for each stage of the path to homelessness. These scenarios were populated with quotes from the interviews and workshop and used as stimulus[2].

3.3   Cycle 3 – Innovate and Co-create Digital Support

We worked with a number of young people through a series of innovation workshops with the aim of generating broad, ambitious, innovative ideas for targeted mobile applications that could support young people at risk of homelessness. First a workshop with young people who had been supported by Centrepoint used 'I wish' techniques against 'at risk' scenarios to develop early innovation concepts. Subsequently a session with Youthnet Young Leaders enabled us to explore the output further, making it more applicable for early intervention and relevant to a wider audience of young people. Finally we ran an extended workshop session with experts and agency partners specialising in branding, mobile and digital products to generate the ideal holistic safe support system for young people. The concepts were developed further and pitched to a "Dragon's Den" style panel of young experts, who chose the winning concepts. The outcome was three mobile apps, targeted at specific moments of need – 'You Drive Me Crazy', 'Sofa So Good' and 'Weigh It Up' (see table 2)[3]. Further work is now ongoing to create prototypes of these applications.

---

[2] The final insights are also summarised on http://homeless.youthnet.org/insight/insights/
[3] A summary of the mobile app concepts is also available on: http://homeless.youthnet.org/working-with-young-people/personas/

Table 2: Three mobile app designs from the collective digital innovation process

1.   You Drive Me Crazy The Need: Young people are continuously arguing with their parents at home. These arguments often get heated and result in both parties saying things they may regret. The Idea: 'Mediation Diversion'. Getting on with your parents can be hard particularly after a row. This app provides tips and encourages constructive conversations with them. This gives you time to calm down, think and helps you keep your relationship going with them. For example, choose from a range of pre-set phrases and images and send a text to tell them you just need some space.
2.   Sofa So Good The Need: Ashamed and alone. Living in many places, moving around a lot, crashing at people's houses... friends' sofas… relatives' places. Feel so ashamed. Don't want anyone to know that I have nowhere to go – don't want to be a burden or for people to feel differently about me. Always having to think   where   next.   This   can't   last. The Idea: 'Sofa Surfing'. The practical and emotional self-help guide if you find yourself sofa surfing. For example, negotiating a contract with the sofa owner to make the stay more secure and allow you to maintain self respect by contributing (skills, cleaning, cooking) to the household; support with the shame and embarrassment; how not to burn bridges,; list of contacts you can reach out to – places you can go; how to 'surf' your way into homeless organisations; what kit you will need.
3.   Weigh It Up The Need: Can't think straight. I feel I just have to get out – right now. I can't take it any more. Anything's got to be better than this. I feel desperate and am scared about what is going to happen to me. The Idea: Look at the Pros and Cons, a theoretical pause button that allows you to slow down the decision making process and weigh up the options available to you. It makes you think it through first – what might happen if you do leave vs. why you might be better staying. Gives you pre-sets of pros and cons to enter for you to weigh up against each other. For example, the things home can give you – a roof over your head, somewhere to sleep. Maybe also helps you slow your breathing, your pulse.

4.0   Researchers' reflexive account of the action research outcome and process

Given the amount of information already existing, the process of knowledge synthesis was important. We were nervous that the initial research summary would not uncover anything new, but the experts felt that, by focusing on what was *not* known and developing possible hypotheses for support, the research report we produced managed to simplify a complex area in a meaningful way.

The participatory workshop with the experts set the direction for the subsequent cycles of innovation, as it led to our model of the path to homelessness and our decision to target our support at the earlier stages. However it was unusual to have stakeholders from multiple specialist and third sector companies in the same room discussing a common issue and the psychological contract we undertook helped ensure worries were voiced and rules of engagement agreed. We encountered some practical challenges in not allowing enough time for the experts to network with each other, such that this started to encroach on the workshop itself. In future, we would ensure time is built into the programme before and after collaborative sessions for informal conversations.

In the depth interviews, we found that young people who had experienced homelessness were frank and honest about their experiences. Successful mobile apps need to serve highly specific moments of need and the insight they provided into such moments helped us control the direction of the innovation cycle. We had to tread carefully as we were working with people who had in some cases been through years of serious abuse. The experts however had given us clear advice that we should talk openly and unemotionally with them. Nonetheless, we were careful to deal only with the information they presented and we did not probe areas they chose to leave hidden.

We ran two participatory workshops with young people who had experienced homelessness. They were creative, open and willing to co-operate, but in both cases the workshop format felt at times uncomfortable given their recent circumstances. A workshop has certain implicit rules of engagement that did not always feel appropriate. For example, creativity exercises have a lightness of touch, whereas their experiences are highly personal and emotional. We felt that they needed more time than we allowed to explore and capture their experiences, and it was interesting that the first workshop only began to deliver rich output when the young people took control of it; taking turns to share their personal story and effectively reshaping the workshop in a way they were comfortable with. It was also notable that many of the young people were reluctant to take their coats off in the workshop, even when the room was very hot, suggesting their resistance to or suspiciousness of the workshop format. We recommend allowing more time for group discussion before progressing to interactive creativity exercises with vulnerable groups of people.

The process of concept development in the workshops was similarly not easy: mobile apps are more effective when they are specific and targeted to particular circumstances, whereas the young people understandably wanted holistic solutions to homelessness, resulting in broad 'overspecced' ideas for apps. This meant the innovation process needed to be highly iterative and reflexive – adapting to changing needs. Thus, having generated initial concepts, we identified a need to sharpen the language further and undertook an additional session with 'young leaders' who had not experienced homelessness, but who were actively involved with Youthnet. We worked with the material generated and reconfigured it in many different ways, without losing the texture of the language and ideas. We concluded that, although the collaborative workshop approach worked well for innovating digital concepts, we would recommend allowing time to reflect on the research and adapt to changing needs during the research process itself.

5.0   Conclusions

Tackling hidden homelessness among young people is a big challenge: how to help young people anticipate the possible consequences of leaving home in a rush; how to help them when they do not want to seek help or admit they have nowhere to go; how to make them aware of the very real risk that sofa surfing could become a more permanent state; how to help them make the connection between their situation and homeless people on the street.

Having identified an opportunity for supporting young people through mobile technology, we chose a collective approach to innovation. This involved integrating the knowledge and expertise of multiple stakeholders – digital specialists and organisations from the third sector, with the insight and in-depth understanding from young people who have been homeless. This participatory and iterative approach proved particularly effective as it enabled us to synthesize very rapidly a large amount of collective knowledge, establish how best to supplement existing services, develop a hypothesis for when and where young people might need support, understand the nature of that support and finally to design relevant and engaging concepts for mobile apps that could provide support for young people in need. Building in time for reflexivity further enabled us to

build the theory and adjust the direction of the research within the context of practice itself, reviewing the process at each stage, re-shaping it and focusing on new areas as required. However we concluded that care needed to be taken when using a workshop format with vulnerable people, to ensure it did not trivialise intensely personal experiences. This process is reflective of cycles of reflection and action inherent in participatory approaches such as Soft Systems Methodology (Checkland, 1981, 1998). Future research could reconcile the social practices of collectively integrating knowledge from multiple stakeholders (evident in this study), with existing participatory action research methodologies evident in Information Systems. In particular this study's desire to incorporate highly marginalised young-people, to involve collaboration of multiple (potentially competing) organisations' actors, and for researchers to act as "catalysts for change" (Chiasson, 2001) may highlight opportunity for future research. This paper is a tentative first step in that direction.

In sum, we believe that this iterative cyclical approach to digital innovation offers lessons for others seeking to develop systems for marginalised groups. The paper demonstrates that this action need to be planned carefully and managed with sensitivity to ensure the answers can be drawn out of multiple stakeholders with different perspectives.

Acknowledgement

References

Alvesson, M. and K. Skoldberg (2000). Reflexive Methodology: New Vistas for Qualitative Research. London, Sage Publications.

Alvesson, M. and S. Deetz (2000). Doing Critical Management Research. London, Sage Publications.

Ashmore, M. (1989). The Reflexive Thesis. Chicago, The University of Chicago Press.

Baskerville, R. and J. Pries-Heje (1999). "Grounded Action Research: A Method For Understanding It In Practice." Accounting, Management and Information Technologies **9**(1): 1-23.

Baskerville, R. (1999). "Investigating Information Systems with Action Research." Communications of the Association for Information Systems **2**(19).

Braa, K. and R. Vidgen (1996). An IS Research Framework for the Organisational Laboratory. <u>Computers in Context: Joining forces in design.</u> M. Kyng and L. Mathiassen. Cambridge Massachusetts, MIT Press**:** 381-400.

Braa, K. and R. Vidgen (1999). "Interpretation, intervention and reduction in the organisational laboratory: a framework for in-context information system research." <u>Accounting management and information technologies.</u> **9**: 25-47.

Chiasson, M. and A. Dexter (2001). "System development conflict during the use of an information system's prototyping method of action research." <u>Information Technology & People</u> **14**(1): 91-108.

Checkland, P. (1981). <u>Systems Thinking, Systems Practice</u>. Chichester, Wiley.

Checkland, P. (1999). <u>Soft Systems Methodology: a 30-year retrospective</u>. Chichester, John Wiley & Sons, Ltd.

Checkland, P. and S. Holwell (1998). <u>Information, Systems and Information Systems</u>. Chichester, John Wiley & Sons.

Green, A. E., Maguire, M. & Canny, A. (2001). Mapping and tracking vulnerable young people, Rowntree Foundation.

Joseph Rowntree Foundation (2012). Housing Options and Solutions for Young People in 2020.

Karabanow, J., & Naylor, T.D. "Being Hooked up." In <u>Digital Diversity</u>, E.D. Looker, & T.D. Naylor (Eds.). Wilfred Laurier University Press, Waterloo, ON, 2010, 161-178.

Reeve, K. and Batty, E. (2011). "The Hidden Truth About Homelessness. Experiences about single homelessness in England". <u>Centre for Regional Economic and Social Research Report Commissioned by Crisis.</u>

Crisis (2012). "Young, Hidden and Homeless". Research Briefing.

Hult, M. and S. Lennung (1978). "Towards a definition of action research: a note and bibliography." <u>Journal of Management Studies</u> **17**(2): 241-250.

Lau, F. (1999). "Towards a framework for action research in Information systems studies." <u>Information Technology & People</u> **12**(2): 148-175.

Mitev, N. and W. Venters (2009). "Self-Reflexive Evaluation of an Academic-Industry Management Research Collaboration: Instrumentalisation in Developing Knowledge Management Technology." Journal of Management Studies 46(5): 733-754.

Vickers, G. (1970). <u>Freedom in a Rocking Boat</u>. London, Allen Lane.

Woelfer, J.P. & Hendry, D.G. Homeless young people's experiences with information systems: Life and work in a community technology center. In <u>Proceedings of the CHI 2010</u>, ACM Press (2010), pp. 1291-1300

Woelfer, J.P., Iverson, A., Hendry, D.G., Friedman, B., & Gill, B.T. (2011, May). Improving the safety of homeless young people with mobile phones: values, form and function. In <u>Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, ACM</u> pp. 1707-1716.