

Who is the user?

26 January 2010

Executive Summary

Since the 1993 white paper on science and technology, Realising Our Potential, the UK research councils have placed increasing emphasis on user engagement. Moreover researchers are encouraged to involve research users before, during and after the research process (ESRC Strategic Plan 2009-14). Research users are diverse, and there are costs of engagement (in terms of time as well as resources) associated with individuals and organisations engaging in the research process. Who actually qualifies as a research user, however, is not a simple question.

This workshop explored these parameters in depth and from the perspectives of leading academics, a research council and research users drawn from the voluntary and public sectors.

Speakers at the event:

- tracked the evolution of user engagement (UE) from the late 1970s
- recognised that successful design requires direct communication and engagement with users
- argued for greater recognition of the importance of engaging with users to deliver academic, societal and economic impact
- described research investigating the extent of user engagement (UE) in practice and the problems and issues which arise
- stressed the need to make it clear that, with UE, the quality of research is simply better

- reported that many products and services still fail to take account of user needs — and therefore fail to meet them
- demonstrated the value and role of interactive theatre in eliciting user requirements and promoting experiential learning of key stakeholders
- spoke of the importance of meeting the needs of service providers for research to be readily accessible, easy to interpret, quotable, clear and concise, evidence-based, and applicable to current working practices
- discussed major contributions research has made to healthy ageing

Background

Even a single research project concerned with ageing and disability-related matters may have many different users, for example, intermediaries in housing, health and social services, transport providers, design practices, as well as beneficiaries, such as older and disabled people and their carers. This variety of users might be considered a hindrance which would contribute to a lack of focus and ambiguity in the goals of a project. However this isn't the case. Listening to different users with different perspectives can enhance the quality of research projects and help to make findings more robust, relevant and applicable and, most certainly, these can enhance the case for support for further research. Even very basic research projects can benefit from articulating findings in terms of the policy context and how, in the fullness of time, they might benefit the lives of the individual. The notion of a linear path of basic research leading to more basic research, then applied research and eventually development and application, has little place in today's research, social and political environments. So, generally, research is greatly enriched where multiple users and their different needs are recognised and valued. Through the response which follows such recognition, the lives of researchers can be enriched as well as those of the multitude of users.

Programme

Introduction

Professor Leela Damodaran opened the meeting by describing the roots of her own interests in user engagement and participation. This developed through her experiences as a researcher in the (then) Human Sciences and Advanced Technology research group in the 1970s. The group was investigating the impact of early online systems on people. Their findings lead to subsequent analyses of why major public sector IT projects so often disappoint — or fail altogether.

She referred to reports of the National Audit Office from the late 1970s onwards, citing poor user involvement as one of reasons for the inadequacies of large-scale IT systems. Without such involvement, systems were not designed to match the characteristics, needs and expectations of their intended users. This is seen as a major reason for the underperformance of IT systems. She went on to describe the way that this acknowledged deficiency slowly gave rise to a growing interest — not in gaining the participation of end-users but rather in the elicitation and specification of user requirements so that these could be built into design specifications.

Extensive efforts followed to attempt to capture knowledge of end user needs and represent it through user modelling, in style guides, design guidelines and so on. However, despite the very significant investment of resources in these tools over decades, there has been only limited success in designing, developing and delivering genuinely user-friendly products and services. The most crucial reason for this is that such tools and techniques cannot adequately capture and represent the dynamic complexity, variation and subtlety of human experience, behaviour and aspirations. Fundamentally, to design for/with people successfully, requires direct communication and engagement with users — to talk to them, to understand their perspective and the context of their lives, to try out design ideas with them and to make design changes in response to their feedback. Good design practice reflects ideas, detailed understanding and deep knowledge people possess about their own work, their own lived experience and knowledge of the context of their own lives and their hopes and aspirations. From the perspective of the KT-EQUAL programme, engagement with users is regarded as a crucial component of knowledge transfer and exchange. The challenge is how to transfer knowledge and understanding of the value, importance of user engagement — and above all how to do it — to a wide constituency of decision-makers. The growing governmental and societal concern to see value for money, relevance and impact from investment in research may

become an important driver for UE. There is growing recognition that there are many users of research — from beneficiaries to policy-makers through energy suppliers, developers, designers, manufacturers, and educators — and many others. Perhaps most significantly, recognition is growing that the needs of all of these very different groups cannot be defined from the outset of a research project or programme — rather there has to be a process in place to develop mutual understanding between stakeholders. KT-EQUAL has evolved from the SPARC programme to support and promote such engagement with the aim of maximising the benefits of age-related research conducted under the aegis of the EPSRC EQUAL programme and many other UK initiatives including the ESRC led New Dynamics of Aging programme and its forerunner, the Growing Older Programme.

Discovering the characteristics, needs, and expectations of people is far from easy — human diversity is to be enjoyed and celebrated but represents a vast challenge for all those attempting to design, develop, conduct, deliver and implement research relating to older people in society. Today we shall hear from a range of stakeholders who have different perspectives on this immense challenge and who bring us insights and innovative ways of addressing them. This event with highly knowledgeable speakers and well-informed participants from varied constituencies — including key users of research with rich knowledge and experience — seeks to influence how we frame our research to ensure user engagement is at its core, and how we apply and share the knowledge it generates. There is a long way to go before user participation becomes a mainstream process in decision-making.

Personal reflections on the challenges of user-led research

Professor Irene Hardill of Nottingham Trent University opened the proceedings with her reflections on the challenges of involving the user in research. Her presentation began with an account of her history of conducting research with the user at the centre of the process. The key influences in her work come from a background in feminist research, and participatory action research. Such research foregrounds subjectivity, centres marginalised voices, and leads to the idea of ‘users’ being true participants in the processes of research.

She described the user-led focus of the Research Councils, focussing on the ESRC and its emphasis on ‘user engagement’. After outlining the traditions of user engagement in the social sciences, she noted some of the key external drivers for policy change in user research. One of the prominent drivers concerns changing

notions of the role of the 'citizen'; the emphasis here has been on the idea of 'active citizenship' and its influence on the democratic process.

Professor Hardill argued for greater recognition of the importance of engaging with users to deliver academic, societal and economic impact and it's considerable potential for impact on policy and practice especially through co-production of research with users.

She cited through key papers in the process of change towards increased 'user engagement' as the 1993 White Paper — Realising Our Potential, and the Foresight Report which raised awareness of demography and ageing.

Drawing on examples from a research project that investigated why people volunteer (Hardill and Baines) and the NDA funded Sus-IT project (Sustaining IT use by older people to promote autonomy and independence), 2009-12, Professor Hardill demonstrated best practice in user engagement.

Professor Hardill described an event she had organised for the ESRC's Festival of Social Sciences entitled 'Improving everyday life: getting connected to public services'. This was to be a knowledge sharing event for older people in Erewash and also involves the statutory and non statutory sectors, including local Library service and the Borough Council. Older Sus-IT research participants were part of the programme for the event to share their stories of 'Digital Engagement' with their peers. This is to demonstrate the importance of digital technologies to their lives and to encourage others to become similarly digitally engaged.

She then went on to describe the work she is undertaking as part of the New Dynamics of Ageing (NDA) research programme. The NDA programme follows the ESRC Growing Older (GO) Programme, which was open to social scientists. It ran from 1999-2004 and consisted of 24 research projects that formed a broad-based multi-disciplinary programme designed to generate new knowledge on extending quality life. GO gave an enormous boost to the involvement of older people in scientific research (GO Programme <http://www.growingolder.group.shef.ac.uk/index.htm>). The current New Dynamics of Ageing Research Programme (2005-12) has placed the involvement of older people high on its agenda, which we discuss below (NDA Research Programme <http://www.newdynamics.group.shef.ac.uk>). For NDA, older adults are aged over 50 years, so this includes up to three generations of the UK population.

The programme also aims to develop practical policy and implementation guidance and novel scientific, technological and design responses to help older people enjoy better quality lives as they age.

Interestingly for the NDA research programme, users include older people not just stakeholders or policy makers. Indeed there is a requirement for individual projects to engage with older people and other research users. At the Programme level an Older People's Reference Group has been established (Walker, 2007; see also <http://www.newdynamics.group.shef.ac.uk/about/>). Our Sus-IT project research team is composed of scientists and social scientists who are based at seven British universities, about half of us are ourselves older adults. The fundamental research question we pose in Sus-IT was inspired by lived reality, the challenges the late father of one of our team was facing in remaining digitally engaged when experiencing declining eyesight. We began work in January 2009 and end in March 2012.

One of our first tasks was to establish a group of 'critical friends' to advise us. The group is composed of men and women from central Nottingham and rural Leicestershire, aged 50-80 years, drawn from communities we had worked with when scoping the proposal. We have met to discuss the design of project leaflets, our website, the layout of survey instruments, and how we should engage with older adults. Our critical friends have at times been very critical.

We are working collaboratively with panels of older people in the first instance in two English regions, the East Midlands and London, where the team are based, but eventually we will roll out across the UK. Rather than merely gathering evidence we are trying to involve and empower our research participants, and we are fortunate in that the topic of digital engagement is generating a great deal of interest amongst some of our research participants, who are very proactive in keeping in touch with us. We update participants on the project via our newsletter and website; and invite people to attend seminars and workshops we run, and we are also establishing a network of peer researchers.

One community group has decided to build our questionnaire into their 8 week long IT course; they are using it as a vehicle for raising awareness of what ICT's can do. At another centre while people complete our questionnaires we offer short IT taster sessions, and then sign post people to free IT classes available in the community.

Thus far over 200 people have completed the digital engagement study. From these we are building a knowledge base of older people's use of ICTs in the UK. This could clearly not be achieved without extensive user engagement.

Polarising user engagement in the social sciences: a story of punctuated policy

Professor Chris Caswill (Associate Fellow, INSIS, University of Oxford, Honorary Senior Fellow, Department of Science and Technology Studies, UCL and visiting lecturer with Exeter University) spoke on this topic. After describing his professional background, including his former role as the Director of Research of the UK Economic and Social Research Council (ESRC), he talked about his own research (Caswill and Shove, 2000). This research was conducted to investigate the extent of UE in practice, the underlying reasons for interest in it and the problems and issues which arise in relation to it. While the research identified considerable interest in the process of user engagement, it revealed that in practice user engagement was not necessarily carried out or effective.

He made reference to Rappert's report (1997) which examines some of the consequences of greater user involvement in the UK ESRC by drawing on both empirical evidence and more speculative argumentation. In doing so, it poses some of the dilemmas for conceptualizing proper user involvement.

He identified what he regarded as three key policy moments: the Heyworth report in 1965; the White Paper 'Realising Our Potential: A Strategy for Science, Engineering and Technology' 1993 and the report of the 13 country NORFACE ERA-NET project (of which ESRC was a member), Montreal 2006 (Williams, 2007).

Professor Caswill provided a distillation of lessons and questions from the case study of the NORFACE workshop in Montreal. Canada is seen as the market leader in UE but even here there were issues and significant limitations in its application. The NORFACE study found a spectrum of UE in research and that there was a need to give more weight to its users within research processes. Some key questions concerning User Engagement (UE) in the Social Sciences were raised:

- 'how close to the users are you?' — thus highlighting the concept of 'distance' and the difficulty academics have of including users in their research. Inside the Social Sciences, UE is still a fragile commitment and not much emphasis is placed on it in strategic plans.

- ‘what happens when money gets tough?’ —there is a price to pay in UE research, since when money gets tough it could be marginalised.
- ‘what is good and bad UE research?’ — thus drawing attention to the fact that UE research will not always be good.
- ‘does it work in all areas?’ — UE may be fine in some areas but not good across all.
- ‘is UE a punctuation mark in the development of the Social Sciences or the real text?’ — how central will UE be to the Social Sciences?

These questions about UE highlighted the fact that the concept is still very much contested territory and it cannot be assumed that it is really going to be encouraged within research generally.

Professor Caswill observed that UE needs to be attached to questions of research quality. There are problems associated with the concept as it does not translate into current assessment systems such as the RAE and refereed papers. Institutional incentives are not in place to push UE forward. UE needs to demonstrate quality otherwise it will not be included in the top rated journals, as it is not classed as ‘real’ research since academic ‘distance’ has been reduced. He emphasised that these institutional barriers exist; they are embedded in academic culture. He went on to question whether the answer lies within the remit of Research Councils and believes levers may need to be developed, especially since the Research Councils are academically driven. In a follow-up survey to the NORFACE study, it was found that only two research councils were active in support of UE. It was found to be stronger in educational and medical areas but less so in other areas.

Professor Caswill posed a significant question which arises from his consideration of these research findings: If the world is going to get tougher economically, is UE going to take a hit in financial terms as the system endeavours to get back to what it sees as ‘core business’? If this proves to be the case, it will be of critical importance to show how UE improves the quality of research. In addressing the question, ‘How does user engagement improve the quality of research?’, one aspect to emphasise is that if we do not consult the users in the design of components, products, systems, we will only assist the mainstream users. Research councils emphasise economic benefit and ethical considerations in relation to users but we need to make it clear that with user involvement, the quality of research is simply better. The

final message of this presentation was that to get the message across, “we need to be bold and write papers about UE”.

Capturing user requirements

Wendy Olphert of Loughborough University spoke about the importance of, and processes for, capturing user requirements. She referred to the existence of a substantial body of evidence to show that products, systems and services that are well matched to the requirements of their users will be more effective, safer, more likely to be used, more accessible and more acceptable than those which are not. Yet, she pointed out, there continue to be many examples of products and services which fail to meet user needs. For providers, this leads to consequences such as wasted development, time and resources, fewer sales and lower take-up, problems and accidents, dissatisfied users and customers and high support costs.

Thus there are tremendous benefits both for users and for providers from ensuring that user requirements are identified and incorporated in the design of products, systems or services. But it is recognised that doing this effectively is a challenge, and one of the main reasons for this is the difficulty of identifying ‘Who is the user?’ In the past, for those involved with the design and development of digital technologies, it was relatively simple to identify the likely users because they were likely to be specialists working in companies or research labs. Today, by contrast, digital technologies underpin many of the products and services that we — the general public — use in many aspects of our everyday lives. The potential users may be enormously diverse, differing for example in characteristics such as ability, access, age, education, income, location, motivation, culture and support. Furthermore, it is not just the ‘hands-on’ users who have requirements —there may be other stakeholders whose needs may have to be taken into consideration.

To illustrate this, the example was given of a new telehealth application for monitoring diabetes. The primary users would be people with diabetes. But other stakeholders would include a range of people with various roles in caring for and supporting people with diabetes, such as carers, district nurses, GPs, care home staff, hospitals. Then there are other organisations and bodies which might have an interest in such an application, for example diabetes charities (providing information), NHS funding, NICE, health policy makers, broadband service providers, pharmacies, manufacturers, marketers etc. Each of these stakeholders has a role to play in the success or failure of the application. For instance part of the role of carers, local health staff, NHS Direct and so on is to promote awareness and

to provide information about the application to patients, whereas it would be the responsibility of the equipment and service designers to make the application easy to use and appropriate to the needs of patients.

In addition to identifying users in all their diversity, Ms Olphert explained, capturing their requirements can also be difficult: some kinds of user requirements can be relatively easily collected — returning to the example of the diabetes monitoring application, these might be requirements relating to what needs to be monitored. Other requirements may need further ‘digging’ to reveal — e.g. how simple would the application need to be (depending on the capabilities of different users), and would the same system suit every case? Sometimes requirements only emerge when people have had the opportunity to think about how a system might work, or are able to try out something similar. The difference between the ‘known unknowns’ — those pieces of knowledge that are available and identifiable — and the ‘unknown unknowns’ — questions that have not yet been asked — were explained. Wendy concluded by noting that, while identifying requirements in this last category is undoubtedly challenging, there are now many techniques available to help developers and designers. This includes methods for envisioning and user engagement, (e.g. prototypes, simulations, scenarios, role playing and interactive theatre). To illustrate the use of interactive theatre she introduced the next part of the session:

Interactive theatre (demonstration of an innovative requirements elicitation method)

Professor Alan Newell of the School of Computing, University of Dundee, was joined by actress Jane Nelson-Peebles of MM Training to demonstrate an innovative method of eliciting user requirements. The audience was invited to imagine that they were responsible for the development of smart homes and, after an introduction by Professor Newell was shown a DVD entitled ‘Martha and Joe’ that depicted a scenario of an older couple using smart home technology to organise key aspects of their lives. From food shopping to communication with family, personal monitoring to the running of a bath, Martha and Joe were supported by the telecare systems that were installed in their home. Both the benefits and the potential disadvantages of the systems were alluded to, and the audience experienced for themselves the efficacy of this means of eliciting requirements.

At the end of the DVD Jane Nelson-Peebles entered in character as Martha and participated in a question and answer session that was lively, engaging and

informative; demonstrating the value of such a method in raising awareness of issues, eliciting requirements and generating feedback from developers, designers and manufacturers.

Person into the provision: a service provider's perspective on using research

Dr Guy Dewsbury, Research Associate, Kings College London (formerly Telecare Manager, London Borough of Barnet) talked about his experiences of using research from his perspective of being both a researcher and a service provider. He covered three themes: service provision, research, and the older person (the user). He spoke about the relationship between service provision and research, and outlined the way in which they can both influence each other. He also explained the difficulties that service providers can have in accessing and assessing research and emphasised the need for better communication of research to those who have only Google as a means of searching for research. Dr Dewsbury explained that service providers welcome research findings that are applicable to working practice and that are presented in a clear, concise, and often quantitative way. When producing research output for busy people it is important to bear in mind that its key messages need to be accessible to someone who has five minutes to spare on a station platform. To meet this need for research output to be readily accessible and rapidly understood he identified the following requirements:

Research should be quotable, clear and concise, evidence based, qualitative and applicable to current working practises with realisable recommendations to fit with current practice and procedures.

The research output required is different for service providers than for academic journals. Also different local government authorities have different procedures and protocols and recommendations need to be phrased to reflect these differences.

He highlighted the fact that the research agenda for older people has changed from supporting the vulnerable to promoting independence, but that in actual fact it should encompass both aspects of promoting quality of life in older age.

Dr Dewsbury spoke about older people as the key end-user group and discussed the means of engaging them. He highlighted the dangers of using committees that are populated with the same older volunteers each time, and of research serving to complicate lives, rather than to enable people to live more fulfilled lives. In conclusion he stressed his view, based on experience that older people adapt to

and enjoy new technology but must engage in, and with, research and researchers for change to happen.

A third sector user's perspective

Professor James Goodwin, Head of Research, Age UK spoke about the role of user engagement in research from a third sector perspective. He provided a breakdown of the mission and structure of Age UK emphasising that it's mission is to improve the lives of older people. Age UK comprise 3,000 employees, 70,000 volunteers, and has a turnover £140m.

He outlined the role of research for later life in the organisation's agenda. Age UK is a global centre of expertise for ageing research that influences social policy, product development and provides an evidence base for professionals. It's research users are the charity itself and the constituents, older people in society.

Professor Goodwin offered 'evidence-based good cheer' in the form of research solutions for the future prospects of an ageing society. He offered hope that although ageing is a young science, progress has been exceptional and most of it has been made in the last 30 years. He also commented on the 'great debate' of research i.e. curiosity driven vs utility and warned that research funding must not be driven by "Philistine notions of utilitarian research". In the past curiosity driven research has led to such key outputs as Beta Blockers, Viagra, Penicillin and Teflon which transform the lives of millions of people worldwide.

The linear model of knowledge transfer was contrasted with an interactive model, where users are at the heart of the process. Professor Goodwin outlined the ways in which Age UK involves the user in research, from the generation of internal research protocols to external negotiation with research funders and the academic community. He concluded that both pure and applied research are necessary to meet the needs of an ageing population; that research translation into practice has been slow and often intractable, but that the charity sector is well-placed to influence change and benefit older people and in particular to address the rate-limiting step in knowledge transfer, namely inadequate UE.

Questions and discussion in the workshop emphasised the following points:

- UE should be an interactive collaboration between the users and the research project rather than a one way process with the user as a subject.

Involving users in the research plans and giving feedback on the results are good ways to involve users.

- We need to think about what the quality of participation actually means? This needs to be addressed in different ways depending on the scale of the project.
- Failure in UE leads to more than just poor systems but users feeling ‘disenfranchised’ and very negative about innovation e.g. Susan King Roth (1998).
- Techniques such as interactive theatre pioneered at the University of Dundee demonstrate the value of using a different approach to elicit end user requirements. Crucially they also provide powerful experiential processes to promote understanding of the value of user engagement and user needs by key stakeholders including designers and policy makers.

Post-event feedback

“Having had some slight dealings with a programme aimed at what older people want from newer technologies, I was invited to attend a conference entitled “Who is the User” at Loughborough University.

In my working life I was a Medical Scientist and had attended many conferences associated with that particular field of science. I had little or no idea about the activities of the Social Science community.

When I initially saw the programme, I envisaged a series of theoretical presentations by academics on topics that were frankly beyond my comprehension. However, it was not as theoretical as I expected it to be and there were many practical aspects.

The presentations demonstrated to me the wide variety of work and research involved with improving the life of older people.

Topics in the presentations and *ad hoc* discussions that particularly interested me included: technology that helps the older generation and computing for the elderly.

It was impressive that researchers were asking older people what their requirements were as users. Other “users” were manufacturers and suppliers of services for example.

It seems to me that obtaining the opinions and experiences of these various users enhances the quality of the research.

One presentation that was particularly fascinating to me included a video purporting to be two older people living in a virtual “Smart” house. As an example, one of the facilities in the house included an “intelligent” refrigerator which not only automatically recorded its contents but was able to order replacement foods and other supplies when necessary.

The novel aspect of this presentation was that one of the actors in the video was present in the audience and was able to answer questions about her experiences in the virtual house. Attending the conference has opened up a new sphere of interest to me. Maybe it is not surprising that I am interested technologies for the elderly as I am an older person and also a tutor of computing at Age Concern.

Mike Stevens, February 2010

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