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Sus-IT – Sustaining IT use by older people to promote autonomy and independence

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Sus-IT is a 39 month Collaborative Research Project funded through the New Dynamics of Ageing (NDA) programme, by the five UK Research Councils - AHRC, BBSRC, EPSRC, ESRC and MRC (grant no. RES-353-25-0008). The NDA programme is the largest research programme on ageing ever mounted in the UK.

The rationale for the project - why is this research needed?
Growing numbers of older people are now using computers and the Internet for a wide variety of purposes and are enjoying the benefits of being digitally engaged. However evidence suggests that some older people do not, or cannot, sustain their IT use. As yet there has been little research to understand the factors which could lead to such 'digital disengagement'. The aims of Sus-IT have been to address this gap by generating new knowledge and understanding of the challenges facing older computer users, how these challenges affect their ability and motivation to continue using their computers, and what can be done to help older people to remain digitally engaged.

Approach to the research
To address these complex sociotechnical research questions successfully requires knowledge and expertise from a range of disciplines and perspectives. The project has been structured into a number of different workpackages, each of which has involved teams of researchers with complementary skills and from different disciplines, who have focussed on a particular aspect of the research problem. Our multidisciplinary research consortium comprises 22 researchers from eight UK universities, with expertise in participatory and user-centred design, psychology, gerontology, sociology, computer and information science, human-computer interaction, and learning technologies.

Older people themselves have been central to the research – more than 1000 older people from diverse backgrounds across the UK have participated in our project in some way. Key research users (e.g. organisations representing older people and those providing services and products to be used by older people) have also been included as collaborators in the research. The project has been guided by an Advisory Group and supported by a number of external consultants.

To achieve the project objectives, partners have applied an innovative combination of methods, tools and techniques with the aim of engaging older people and enabling them to shape and participate in the research. Methods and techniques used have included a survey of digital engagement, problem-solving sessions and workshops, co-design 'sandpits', interactive forum theatre, and testing and evaluation of software and product concepts developed on the project.

Key findings from our research
The Sus-IT digital engagement survey has involved approximately 750 participants aged over 50 from across the UK. Findings show that many older people are frequent users of a range of digital devices, including the computer/laptop, mobile phone, tablets and eBook readers. A large proportion of respondents report using a computer every day or several times a week. Survey results also show that although small numbers of participants use a tablet or a mobile phone to access the internet, a very high percentage of those that do use their device every day or several times a week to access the internet.

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The most frequent challenges reported by older computer users were:

- a lack of technical skills/knowledge to do specific tasks or to solve problems when they occur;
- understanding technical 'jargon';
- remembering things – for example passwords, or all the steps in a process;
- physical difficulties – for example using the mouse or keyboard, or seeing the screen;
- not knowing how to deal with computer security, especially how to deal with/prevent unwanted content such as viruses, pop-ups and spam.

We found that older people value very highly the benefits and independence that computer use gives them, and they are often exceptionally tenacious in trying to remain digitally connected – persisting in the face of many obstacles such as those listed above, and often without awareness or use of existing aids to accessibility. When disengagement occurs it is often a gradual process, rather than a single event, and usually results from a combination of factors – particularly changes in physical ability, memory, support, and/or technology problems/changes. The availability of help and support is of paramount importance to sustaining connection. More than a quarter of respondents said that support from other people was the most important thing helping them to use computers effectively. Help and support is mostly gained informally from family and friends - formal learning and support provision is very varied and 'patchy' across the UK.

Outputs from our research
Our research has generated new understanding of the needs of and challenges faced by older computer users, and of potential solutions. Key outputs include:

- a conceptual model of the risks to sustaining digital engagement for older people (see Briefing Paper 1 for more details);
- an innovative suite of tools, methods and guidance for working collaboratively, participatively and ethically with older people in research and in the design and development of ICT-based products and services (see Briefing Papers 2 and 3 for more details) ;
- an 'adaptivity framework' which has been applied to develop prototype software that helps to address problems encountered by people experiencing age-related changes in vision, dexterity and memory (see Briefing Paper 4 for more details);
- a design catalogue of 40 product concepts aimed at the ICT industry to stimulate new product development for the older market (see Briefing Paper 4 for more details);
- a user-generated strategy for provision of sustainable, community-based ICT learning and support for older people and a blueprint for design and implementation of such centres, with exemplars (see Briefing Paper 5 for more details).

Over 50 publications have been produced by the project team which document these outputs.

Policy implications and future impact
The issues surrounding sustaining digital inclusion in older age are multi-faceted and complex – however addressing these will have significant benefits not only for older people but also for the economy and society. The range of potential solutions is diverse, with implications for ICT policy and strategies, as well as the design and delivery of ICT based services and products. Adoption of the solutions requires a coordinated change management approach involving a wide range of stakeholders. To promulgate the outcomes from Sus-IT and to achieve their implementation, project members are working with key players responsible for the delivery of government services and policy, commercial and third sector organisations and developers of software, equipment and ICT based products and services. A forward programme is underway as part of KT-EQUAL (a programme which aims to ensure that the results of extensive research are translated into real, tangible benefits for older people themselves).

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Older people and digital engagement

Older people not only represent a growing proportion of society, they are also the fastest growing group of internet users. This trend will be reinforced with new retirees who have ICT skills acquired in the workplace, and because initiatives by Government and other organisations (e.g. Age UK's 'Silver Surfers') are successfully converting older non-users into users.

In the course of the Sus-IT project we have surveyed around 750 older people (aged 50+) to explore the nature and extent of their digital engagement, and to understand the benefits and challenges that they have experienced with their use of digital technologies. The majority of participants in the survey were recruited from existing groups and panels of older people. Sus-It has worked collaboratively with 24 groups/panels of older people across the UK, in particular from the East and West Midlands, London, Surrey, Teesside and Dundee. We have sought to reach older adults in all their 'diversity', in terms of health and wellbeing, socially, economically, culturally and in terms of race and ethnicity. Two 'waves' of data collection were undertaken with different selection criteria for participants. In the first 'wave' there were no exclusion criteria other than being aged 50+. In the second 'wave' we focused on older experienced computer users. In addition to being aged 50+, participants were required to have used a computer for two years or more. Both surveys were questionnaire based and included both closed and open ended questions; a modified version of the questionnaire was developed to use with participants with low literacy levels.

The first survey was carried out during 2009-2010. This survey focused on the use of technology by older people in their everyday lives. Our findings showed that older people were using a wide range of digital devices. Almost everyone was using at least one digital technology, with around a third using between 2-5 technologies each and two thirds using 6-10 different technologies. The most frequently used digital technology was the mobile phone (used by almost 90% of respondents). Nearly 70% of respondents reported using a computer. Participants varied however in their confidence levels in using digital technologies. While nearly all were confident users of technologies such as CD players and digital television, and with the basic functions of the mobile phone, confidence levels tended to be lower for 'advanced' functions of the phone e.g. internet access. Most computer users said they were confident when surfing the internet or using features such as word processing to create documents but were less so when they used functions such as Skype and iPlayer. Some users said that they had difficulties operating the newer technologies or found it hard to remember how to use them.

Despite varying confidence levels, many respondents were not only enjoying the benefits of being online, but saw computers and internet access as a central, important or even essential part of their lives.

Data from the second 'wave' of the survey, focusing on established computer users, enabled us to investigate in more detail the ways in which older people are using computers and the internet and the challenges that they face.

Findings from this second survey show that a large proportion of respondents report using a desktop computer every day or several times a week (71%). Survey results also show

that although small numbers of participants use a tablet or a mobile phone to access the internet, over half of those who do use these devices do so every day or several times a week. For instance 9% of participants reported using a tablet device, of these 57% report using it every day or several times a week and 9% of participants report using a mobile phone to access the internet, of these 76% report using it every day or several times a week.

Many older respondents described graphically the benefits of 'digital connection' that they perceive in their lives and often stress the social benefits of staying in touch with family and friends over the internet – especially when faced with reduced mobility or geographical separation from them. That they perceive the computer to be a key determinant of the quality of their lives is evidenced by their responses to the question 'How would you feel if you had to stop using the computer. Many respondents replied in emotive terms such as 'devastated', 'alone', 'isolated', powerless and 'loss of independence'.

Some of the most commonly-faced challenges reported are associated with changes in physical capabilities (e.g. dexterity), cognitive capabilities (most commonly impaired memory), support and technology changes and technical difficulties.

There are differences between the reality and the perceived causes of loss of capacity to use ICTs. While statistics show that muscular-skeletal problems are the most likely disability to cause people to stop using their computers (Young et al., 2012), the perception of most older ICT users is that losing their eyesight is the most probable cause of cessation of use of computers. Almost a third of survey respondents stated deteriorating eyesight as the reason which they **believe** is most likely to lead to them to abandon use of the computer.

Important points/conclusions
In relation to sustaining digital engagement by older users, our data lead us to conclude that:

1. Some older people reveal *exceptional tenacity in attempts to remain digitally connected.* often persisting in the face of many obstacles posed by age-related changes (e.g. changes in physical ability, memory, support, and/or technology problems/changes). Awareness of the interrelationship between social inclusion and digital inclusion from the perspective of personal experience may be an important part of the explanation for this.

2. There appears to be a strong consensus among many older ICT users that they prefer their *use of ICTs to be a social process* in which knowledge and experience are shared, relationships nurtured, communication enjoyed – often intergenerational, hobbies and interests pursued, technical problems are resolved – and ICT purchasing options are debated and discussed. This consensus has informed the development of a blue–print for sustainable, community-based ICT learning and support provision.

3. Key determinants of 'the ICT user experience' – and of the likelihood of older people being able to continue using technologies in the face of age-related capability changes are *access to help and support* and the *adequacy of design* of hardware and software.

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Risks and challenges to digital engagement

The rewards and benefits of digital engagement for older people are well established. Participants in the Sus-IT project highlight the prominent role that computers and the internet play in their lives. For example:

"*The computer is my lifeline. Access to the world and contact with my family, online banking, expenditure, spreadsheets, research….. the list is endless.*" (Julie, aged 67)

"*The computer is one of the 5 C's in my life – the others being children, car, church and cat.*" (Howard, aged 78)

Many high-profile initiatives and programmes have succeeded in bringing more of this age group online in recent years. Research into the dynamics of ageing is making clear the range of physical, psychological and social changes that take place with increasing age, and for some people these affect their capacity to sustain digital engagement. As a result, it has been predicted that, just as more older people are becoming digitally engaged, others will be obliged to give up using their computers and become 'digitally disengaged' as a consequence of such changes. Evidence from previous studies suggests that between 5-10% of computer users may be judged to have given up or 'disengaged' at some point. Yet, in comparison to the interest and investment in promoting digital engagement amongst older people, to date there has been little research aimed at understanding the dynamics of usage for this group of users and how these are affected by changes in capabilities, circumstances and technology.

Consequences of digital disengagement by older people
If disengagement does occur, the implications are potentially serious both at the individual and at the socio-economic level. As individuals, current users expressed strong negative feelings about how they would feel if they had to give up using their computers. For example:

"*Very upset - it's my window on the world. It helps me with my interests and hobbies. I'd be giving up much more than just a computer.*" (Marcia, aged 76)

"*If I had to give up using a computer I would be devastated, completely cut off from the world.*" (Alun, aged 81)

Not only may the well-being and independence of older people be affected if they become unable to sustain their use of computers, but their participation and inclusion in society is also threatened. This is especially the case as service delivery increasingly migrates to online channels and government services in the UK are aiming to become 'digital by default'. Savings that are anticipated from such moves are likely to be seriously over-estimated and equally, there is likely to be under-estimation of the substantial costs and resources needed to support those who cannot access services online. In view of the significance for individuals and society, there is a compelling case to improve understanding of the phenomenon of digital disengagement by older people. This has been the central focus of the Sus-IT project.

Risk factors for digital disengagement
Previous research has found that the key reasons for giving up include disability, complexity of the technology, and social isolation (lower income and lower educational levels are also factors). While such problems can of course affect people of any age in society, they are more prevalent in the older population, suggesting that older computer users may be more likely to face challenges that will make them give up using their computers. Data collected in the Sus-IT Digital Engagement

study confirms that many older computer users experience problems, and that often a combination of problems is reported.

The most common factor which participants reported to hamper their use of the computer is a lack of comprehension and/or sufficient ICT skills to understand the task being undertaken or to understand what went wrong when a problem was encountered (18.3%).
A sizeable proportion of participants (12.5%) reported problems in using either the mouse, keyboard or seeing the screen - making their use of the computer difficult.

A tenth of participants reported problems in using specific software programs (10.5%) and around a further tenth of participants (8.5%) reported understanding technical terminology as making their use of the computer difficult. Other problems reported included problems in using hardware (6.5%), a lack of support available when something goes wrong (6%) along with using security/spyware software and dealing with viruses (5.2%), navigating the computer's operating system (5.2%) and dealing with pop-ups and spam (4.6%).

Despite experiencing challenges and problems, it is evident that older people are often exceptionally tenacious in trying to remain digitally connected – persisting in the face of many obstacles, and often without making use of the existing aids to accessibility. It appears that older users who are enjoying the benefits of being online are not only very reluctant to give up, but also to acknowledge when they are struggling. Disengagement is often a gradual process rather than an event, influenced by a combination of factors; age-related changes in physical or cognitive capacity are compounded by inadequate skills or support, and technological complexity.

Mitigating the risk factors for disengagement

Promoting awareness and uptake of existing aids to accessibility may help older users to sustain their use of computers or to use them more effectively, as will improvements in the design of ICT-based products and services to make them easier to use, more accessible and avoiding unnecessary complexity. Older people themselves cite support related factors as the most important thing to help them to use technology successfully. More specifically, human help and encouragement (i.e. friends, family, and tutors) is found to be the most preferred method of support, followed by the availability and provision of help in classes/drop in centres.

Role of older people in identifying and developing solutions

Older people have been core participants throughout the research process to identify solutions to prevent or postpone disengagement. They have actively participated in sandpits to shape design of future ICTs, evaluation and testing of software, and problem solving workshops to specify their requirements for provision of ICT learning and support.

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Engaging older people in research and design

An underpinning principle in the philosophy of the NDA is the engagement of older people as active participants in research – in contrast to being passive research 'subjects'. In Sus-IT they have been a core part of our research community. More than 1000 older people from diverse backgrounds across the UK have participated in our project in some way. To engage and empower them – and thus build capacity in this community – a range of different methods of engagement have been developed and applied. Collectively these comprise a tool kit for engaging older people in research. The components are described below.

Working collaboratively with older people in established groups and communities of older people.

In order to reach older adults in all their 'diversity', in terms of health and wellbeing, socially, economically, culturally and in terms of race and ethnicity, Sus-IT researchers have worked collaboratively with 24 established groups and communities of older people in the Midlands, Dundee, London, Surrey and Newcastle. A range of different activities and events have been undertaken with the different groups, depending on their interests. The aim has been to inform and engage older people with the Sus-IT research topic, to encourage their active participation. User engagement has been achieved in many cases through 'gate-keepers' responsible for provision of computer support or formal computer classes. Regular updates about project progress have been given to participants, e.g. through a periodic newsletter, along with sessions to present emerging findings and the outcomes of the project and to invite feedback from participants. Participants have found engagement with these events and activities rewarding. For example, one said:

"It is great to be involved in something that will make a difference to older people's lives."

(Mark, aged 67)

In March 2010, Sus-IT hosted an ESRC Festival of Social Sciences event for older adults and representatives from statutory and non-statutory organisations. The festival event 'Improving everyday life: getting connected to public services' was organized for residents from across the borough of Erewash over the age of 50 to come along to find out about the benefits of engaging with digital technologies. Case studies of the personal journeys of the digital engagement of five older people were collated and presented at the event and are also captured in a brochure produced for the event. Local Government and businesses were provided with an opportunity to demonstrate their services and show people how to access them online. Feedback about the event, both from older people themselves and from the organisations involved, was very positive.

Digital Engagement Study

A Digital Engagement Study of approximately 750 older people has been undertaken. This has generated new knowledge and understanding of the dynamics of ageing in relation to changing of ICT use and development. The focus is on how older people use digital technologies in everyday life, rather than on the technology itself. It proved necessary to devise a number of survey instruments to accommodate varying levels of literacy and wellbeing. The questionnaire was administered interactively in a supported process. Older people from the 24 groups identified above have completed the questionnaire.

Co-design workshops ('sandpits')

'Sandpits' were used to encourage effective engagement of older people in ICT design. These provided opportunities to explore current and emerging technologies in a playful and creative context

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through the use of technology demonstrators. The objectives were: to create awareness among older people of emerging ICT; to provide a supportive and empowering approach to participation; to help them envisage potential implications of these technologies in their lives; and identify key issues and user requirements for the older market to inform the development work of ICT designers.

A series of four linked sandpits were developed and hosted to enable older people to experience 'hands on' use of demonstrators, dramatic enactment of scenarios of demonstrator use and the redesign of the demonstrators through co-design sessions. The themes of the sandpits included 'Supporting memory and identity in later life' and 'Combating social isolation with new technology'.

A total of 66 participants were involved across the four sandpits and participants varied in terms of their marital status, education and occupation etc. Participants reported the 'sandpit' experience to be rewarding and worthwhile. For example one said:

"I think it's good to have to think right through something instead of just saying "I would like"... it makes you think all round the problem, which is very good, lateral thinking."

(Amelia, aged 68)

Interactive Forum Theatre

This method gives older people opportunities to explore aspects of current and emerging technologies in an entertaining and engaging format. It uses drama techniques to elicit user requirements through a combination of dramatic enactment of future scenarios and 'hands-on' engagement with working demonstrations. This can be done in live theatre or, where a lower cost option is necessary, by use of DVDs instead. At the end of the theatre production actors enter (in character) and participate in a question and answer session. This is a powerful way of raising awareness of issues, eliciting requirements and generating feedback for developers, designers and manufacturers.

Problem-solving workshops

This approach has been used to address ICT learning and support issues identified by Sus-IT and other related research. A range of relevant stakeholders were brought together in workshops to share knowledge, engage in focused problem-solving and co-produce specific outputs. These workshops were structured to provide documented outcomes (statements of user requirements and a user-generated strategy for sustainable ICT learning and support for older users of new technologies and a plan to achieve implementation).

Testing/evaluating software and hardware

A small sample of older people has also been involved in testing and evaluating the software "adaptivity framework" developed by the project.

A toolkit for engaging older people in research and design

To assist researchers in providing a rewarding experience for participants while also gaining valid data, a guidance document has been developed which includes the following:

- approach and recruitment of research participants
- introducing and explaining the research task
- ethical aspects : participant rights, written consent, data protection and confidentiality issues
- the importance of (a) on-going support throughout the study (b) a de-briefing session and (c) feedback on outcomes/findings.

The set of techniques described above, together with this guidance document, represent a toolkit for engaging participatively, sensitively and ethically with older people in research and design.

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Designing ICTs for an ageing society

Human factors research conducted over more than two decades has shown that, to be successful, ICT based products and services should be:

- user friendly
- accessible and usable
- intuitive
- adaptive and 'personalisable'
- seamless
- embedded ("hidden") functionality where appropriate
- transparent and easy to upgrade and administer

These attributes become particularly important to older and disabled ICT users facing age-related changes in their capabilities. In recognition of this, the Sus-IT project has focused on two key design challenges:

- How can ICT innovators and developers be encouraged to take into account the circumstances and needs of older people in their designs?
- How can the impact of capability change be reduced for older users of ICTs?

Encouraging ICT innovators and developers to design for older people
To achieve this objective requires innovators, developers and designers to have:

- greater awareness of the potential market of older people
- better understanding of the needs and characteristics of older users
- clear specifications of requirements – informed by older users
- knowledge of the hopes and aspirations regarding the products older people would like to use.

To help to meet these needs, outputs from the 'sandpits' or co-design workshops (described in Briefing Paper 3) have been refined and documented in a Design Concept catalogue of 40 innovative product concepts. This catalogue, intended for ICT innovators, designers and developers, serves to stimulate new ideas for products aimed at the older market that are based on older peoples' interests and preferences, and also demonstrates the creativity of older people when provided with the chance to 'have their say' in design.

Reducing the Impact of Capability Change
This aspect of the Sus-IT research arises from the following evidence-based observations:

- as we age, we may experience a gradual change in our ability to access familiar technology or to learn new technologies, for example due to declining eyesight, dexterity or memory;
- technology and advice exists to help people who are experiencing difficulties arising from these changes, by making changes to the way information is presented on the screen, or how the mouse behaves. However, people who need this support may be unaware that they need it, or unaware that it exists, and so small frustrations build and may evolve from an annoyance to a very real access barrier.
- the result is that problems can go unaddressed for significantly longer than they need to, leading to reduced ability to use ICT, or even abandonment.

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The research challenge that the Sus-IT project has explored is how to connect accessibility solutions to the people who need them, at the time they need then, thereby helping them to retain their independence and potentially prevent disengagement caused by capability change. The approach taken has been to develop a software "adaptivity framework" that can monitor and profile users' moment-by-moment interaction with a computer or other device, identify short-term or longer-term problems and suggest (or even apply) an appropriate adaptation based on those that the host device can already provide. For example, a machine could notice that a user is constantly changing the zoom level for text documents and will suggest to the user that the system could magnify not just the text, but the entire contents of the screen, including menus and buttons. The system and user can negotiate and balance the 'pros and cons' of any change. Taking the above example, a side-effect of enlarging screen contents is that the computer user will have to use their mouse more as they scroll/move around the document. As this could be a problem for people with difficulties using a mouse, the option exists for the user and the system to work together to find a best-fit compromise between mouse movement and screen enlargement or to choose a different adaptation altogether such as reading-aloud the screen contents.

The software is currently being trialled and evaluated by a sample of older people. Initial feedback suggests that it has helped users to become aware of accessibility features within their computers and the possibilities for adapting the interaction to meet their individual needs and preferences:

"It certainly opened my eyes to what can be done and what options there are."

(Elaine, aged 83)

In addition, users could be put in touch with remote mentors at particular moments in an interaction, either pre-recorded tutorials or voice or text conferencing links. The opportunity also exists to provide "cut-down" interfaces for people with difficulty learning the intricacies of a new technology. While this would initially prevent users from having access to advanced functions, it will allow them the chance to use the main functions of a technology without being overwhelmed by "bells and whistles" increasing the chance for a less intimidating learning experience.

In due course, a portable profile of individual accessibility needs should facilitate easier access to a wide range of technology based services, not just ICT in an individual's familiar environment. For instance, for someone experiencing a problem with readability of text, devices with the adaptivity framework could adapt to this need by resizing the text without the individual having to master finding and changing settings across multiple devices and with potentially different methods of accessing and utilising such settings.

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Older people's ICT learning and support needs

As part of a survey of older peoples' digital engagement carried out by the Sus-IT project, we asked participants to indicate which learning and support mechanisms they had used,   and how they would prefer ICT learning and support to be delivered. In addition, we carried out a small survey of existing ICT learning and support provision in a sample of UK towns and cities. Case studies of three different ICT learning models also allowed us to examine in more detail the learning opportunities and experiences of older people.

Current learning and support mechanisms

Respondents reported using a wide range of learning mechanisms, including self-directed learning (54%), inter-generational learning, peer-to-peer learning (40%) and taught classes (47%). Respondents reported heavy reliance on support from family members or friends both to learn and to solve problems. Around a quarter of respondents said that human support and encouragement was the most important thing to help them use technology successfully. Formalised, qualification-based learning provision is not what many older ICT users want. Respondents expressed a preference for learning that is:

- accessible

- timely

- affordable

- tailored

- local

- in a welcoming and safe environment.

Barriers to learning

Typically, these include lack of confidence and fear of using ICT's, the absence of adequate support, varied provision and quality of ICT training, the high cost of training, memory problems, problems with understanding technical jargon and dealing with pop-ups and spam. Some of these barriers reduce in impact with growing familiarity with ICT's but some persist, for example problems with updates, viruses, poorly designed software and hardware, inadequate support, and difficulties with finding on-going ICT learning provision (i.e. intermediate courses). In addition, physical and cognitive changes such as reduced manual dexterity or vision, and impaired short-term memory may pose older people with new barriers to sustaining ICT use over time.

Motivation to remain digitally connected

Older adults value the role of ICTs in keeping them in touch with family and friends, using the internet for information searching, for hobbies and interests (such as researching family history), and to make the mechanics of daily life easier (such as online banking, shopping online, writing letters, and financial budgeting). Our research shows that once people are doing what matters to them, they begin to embrace learning, find the experience rewarding and are therefore likely to be motivated to continue.

Provision of ICT learning opportunities

A survey of ICT training and learning opportunities for older people in a sample of seven UK towns and cities showed that provision is very patchy. Findings indicate that the number of ICT training courses exclusively available for older adults is limited, and information about ICT training opportunities is generally poorly publicised. Added to this, most ICT learning and support initiatives are focussed on helping people to get online rather than providing on-going learning and support opportunities, yet Sus-IT research identifies that timely, accessible and appropriate support is a

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crucial factor in helping many older ICT users to stay connected. Government initiatives such as UK Online Centres do not always translate to ICT classes at a local level as intended. Funding cuts are affecting provision (for example, a key resource, the UK Online learning support site my.guide is being reduced to a tutorial repository).

Good practice in learning provision
From a literature review and analysis of 103 publications, and from empirical studies carried out on the Sus-IT project, a number of existing examples of good practice in models for learning have been identified. Good practice in meeting the vast diversity of learning needs of older people (reflecting the heterogeneity of the older population) is characterised by the capacity to offer a high degree of flexibility and tailoring the way support and learning opportunities are delivered to individual needs. Community settings such as drop-in centres/club houses appear to offer a wide variety of forms of provision. People come to these venues to get support and to work together.

A specification for improved learning and support provision
In two workshops hosted by KT-EQUAL, older people, academics and other key stakeholders documented the needs of older ICT users and how to meet them in a specification to inform nationwide provision. This specification has informed the development of a 'blueprint' which describes the essential operational elements that need to be in place to create and sustain community-based ICT learning and support services. This 'blueprint' is not a 'one size for all' approach. It does not prescribe how those essential elements should be achieved as it recognises the need for flexible approaches so that local needs can be addressed most effectively and that makes effective use of existing local opportunities. The "blueprint" considers the essential features under four headings:

1. Venues – the characteristics and infrastructure that locations should have
2. Services – the range and quality of services and the skills of workers
3. Affordability – the options for funding
4. Values – the defining the culture of the service.

Crucially, the 'blueprint' and delivery models are founded on the principle that if older people are to sustain successful use of ICTs as they age, learning to use ICTs should be a social process that is fun, relevant and tailored to their needs as older adults.

A fuller description of the workshop process and the 'blueprint' specification is available in the document 'Taming the Dragon: making technology work for us', available from the KT-EQUAL website: www.equal.ac.uk

Sus-IT Advisory Group Members

- Emeritus Professor Alan Newell (Chair) - School of Computing, University of Dundee;
- Professor Leela Damodaran (Sus-IT Principal Investigator) - Head of e-Society Research Group, Research School of Informatics, Department of Information Science, Loughborough University;
- Wendy Olphert (Sus-IT Lead Co-Investigator) - Senior Research Fellow, Research School of Informatics, Department of Information Science, Loughborough University;
- Angela Barnes - Northern Committees Co-ordinator, Age UK;
- Professor James Goodwin - Head of Research, Age UK;
- Harry Martin - Representing older people participating in the research, Sutton Bonington Community Groups, Leicestershire;
- Anthony Meehan - Senior Lecturer in Computing, The Open University;
- David Mortimer - Head of Digital Inclusion, Age UK;
- Steve Phipps - S & F Phipps Consultancy Services Ltd
- Ian Retson - Leicestershire CareOnLine Manager, Leicestershire County Council;
- Barbara Shillabeer - Member of NDA's OPRG (The Older People's Reference Group);
- John Williams - Age UK.

International members:

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- Professor Alan France - Department of Sociology, the University of Auckland, New Zealand;
- Dr Veeresh Gadag - Professor of Biostatistics, Memorial University of Newfoundland, Canada;
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