# Digital inclusion evidence review

## Contents

# 1 Digital inclusion of older people in the UK

## Background

This review covers only the aspects of digital inclusion connected with internet use, and the term "digital exclusion" refers throughout only to those not using the internet. The research quoted has been selected from a wide-ranging review of the evidence sources, but only those results which the authors consider generally reliable and timely enough to use. Some findings which were interesting have been excluded due to low statistical significance.

The topic of digital inclusion is a fast-changing one on which there is a lot of opinion and information available, but where the robust research evidence is scarce and hard to access. More specifically, evidence on the digital inclusion landscape in the UK is subject to rapid change, and statistics can quickly become meaningless. Likewise, the characteristics of the digitally excluded is likely to be changing in its composition as the less resistant are starting to the use the internet, probably leaving the more impervious or unable.

Owing to the links to other forms of exclusion such as social and financial exclusion (see section 3 below), understanding and addressing digital exclusion is relevant to key areas of Age UK activity and the Charity's strategic goals.

## Introduction

It is possible that a "tipping point" has now been reached. For the first time, the number of people aged 65+ who have used the internet has overtaken those who have never used it. The quarterly Labour Force Statistics survey (Q1, 2013)[1] shows that 5,489,000 are in the "ever used" category and 5,030,000 have never used the internet. In addition, web enabled TV and web access devices designed specifically for older people may soon be available and affordable.

If the 55-64 age category is included (i.e. 55+), the picture is very different, rapidly approaching a position where twice the number of 55+ will have used the internet

than have never used it. Currently, the numbers are 11,560,000 ever used against 6,104,000 who have never used the internet.

The latest quarterly figures for lapsed users (people who have used the internet but not in the last 3 months) show this as a relatively small group: 807,000 aged 55+, of whom 557,000 are 65 or over.[2]

This comes at a time when the internet is becoming ever more part of the fabric of society and where those who are not included are missing out on an increasing number of advantages, particularly financial. For instance, a 2009 estimate by Price, Waterhouse Coopers[3] assessed the households offline (all age) are missing out on savings of £560 per year from shopping and paying bills online, and that the total benefit to the UK economy of all households being online was over £22 billion.

## Access to the internet

In the last reported year (2012), ONS estimate that 36% of single 65+ households and 69% of older couples (where at least one person is aged 65+) have internet access[4].

Most of the older users of the internet who have ever used the internet are "recent" users. Almost 90% of people aged 65+ in the UK have ever used the internet have used it in the last 3 months (4,933,000 out of 5,489,000). This proportion appears to be consistent over time.[5]

## Number of older people not using the internet

The headline measure often used for digital exclusion is the ONS estimate of those who have never used the internet.  However, the best proxy measure for digital exclusion is the population currently offline, which is derived by adding together the ONS estimates for those who have never used the internet and the lapsed users.

This gives an estimate of 8.37 million adults (aged 16+, UK), of whom 6.91 million are aged 55+, with 5.59 million aged 65+.

By this measure, over two thirds of all digital exclusion is among those aged 65 and over (66.79%) and over 82 per cent are aged 55+.[6]

Conversely, about 42 million adults (16+) are currently online in the UK, 10.7 million of whom are aged 55+ and 4.7 million aged 65+.[7]

The latest OFCOM figures are for people lacking access to the internet at home and are broadly in line with ONS estimates, with around 6 million people aged 65+ not having the internet at home, 3.7 million of whom are aged 75+.[8]

**Figure 1: Not using the internet, by age, UK 2012**



Prevalence of those who have never used the internet or have not used it within the last three months by age group
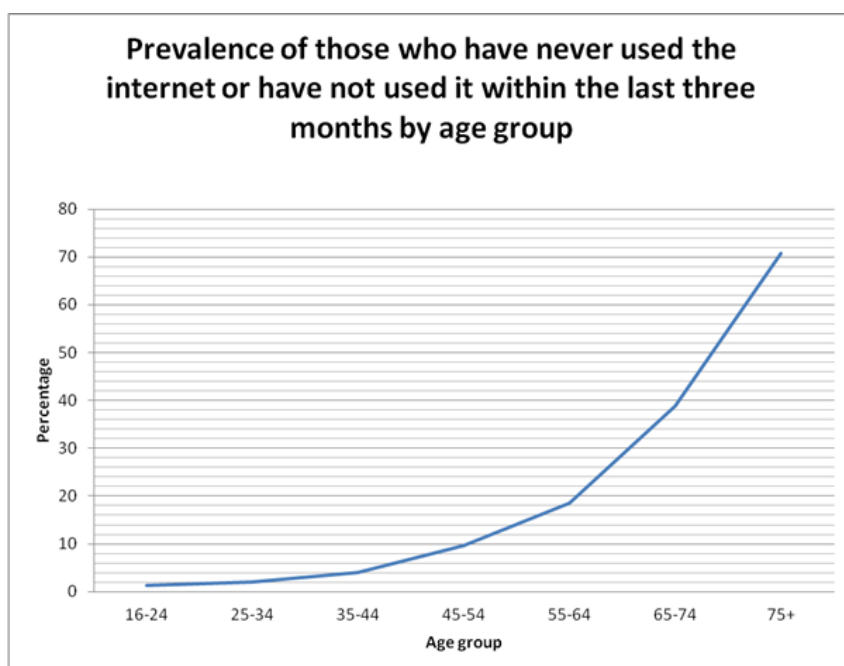
## 2    Who are the older digitally excluded?

### Factors associated with digital exclusion

The most useful concepts for understanding reasons for digital exclusion and for targeting interventions effectively is that of relative risk and multiple risks.

Different ages, levels of income and self-perceived health statuses for example, exemplify different relationships with the likelihood of internet use at older ages. The section below details these correlations. The 'r' signifies the reference category. All odds ratios display the likelihood of an older person not using the internet compared to the reference category.

Factors that most strongly explain the likelihood of an individual aged 55+ using the internet or not in rank order of contribution:

- Age
- Income
- Household composition
- Self-perceived health status
- Sex
- Mobility
- Asian ethnicity
- Memory or ability to concentrate (self-rated)

*Note: standardised coefficients logistic regression analysis*
*Source: variables derived from Understanding Society dataset (wave one: 2009-11)[9]*

Educational attainment has also been mentioned in the literature, but this factor did not prove to be significant here and it seems highly unlikely that it pays as large a role as claimed by some. [10] These findings are potentially important not just for formulating policy and targeting appropriate services and interventions, but the detailed study of the results should help us understand what might be driving non-use of the internet at older ages.

The ranking of factors in their contribution to the likelihood of using or not using the internet can also be used to compile an index of relative risk of being digitally excluded at older ages.

An initial analysis of the factors is outlined in the next section.

## The relative importance of the factors

Analysis of the data in Figure 2 below (which presents a model of all significant factors towards digital exclusion) tells us that:

- There is a decreasing likelihood of using the internet as age increases. Those at older ages (75+) are over five times more likely not to be using the internet than individuals aged 55 to 64.

- Older individuals with a lower monthly income are less likely to use the internet than those with a higher monthly income with a very apparent gradient.

- People with the lowest monthly income (£0-249) were over five times less likely to be using the internet than those with a monthly income of £3,000 or more.

- The likelihood of not using the internet is higher (between 6.5 to 8 times more likely) amongst those with an income of between £250 and £999 a month than it is for the lowest income category. Further research would be needed to explain this apparent anomaly.

- Older individuals living on their own are 1.75 times less likely to be using the internet than households consisting of two or more people.

- Poorer self-perceived general health is more associated with non-use of the internet than good health. Those with very poor health are 2.15 times more likely to not use the internet than individuals with excellent health.

- The relationship between self-perceived health status and internet use is not straight forward as older people with very good health were the most likely to use the internet not individuals with excellent health.

- Females are 1.25 times less likely to be using the internet than males.

- Those with mobility problems are 1.14 times less likely to be using the internet than those without problems.

- Older individuals of Asian ethnicity are 1.79 times more likely to be using the internet.

- People with memory problems are 1.45 times more likely to be using the internet than individuals without problems. This is an interesting finding, which will need further unpicking.
- Older individuals who do not deal with problems well are less likely to be using the internet.

- Struggling to speak/read/write/understand the English language was not significant and therefore was not entered into the model.

**Figure 2: Likelihood of being digitally excluded, Understanding Society survey, UK 2009-11**

| Factor | Odds ratio - likelihood of not using the internet in relation to the reference category (r) |
|---|---|
| **Age group** | |
| 55-64 (r) | 1.00 |
| 65-74 | 1.94 |
| 75+ | 5.3 |
| **Monthly income (from all sources)** | |
| £0-249 | 5.74 |
| £250-449 | 8.06 |
| £500-749 | 6.59 |
| £750-999 | 6.81 |
| £1,000-1,499 | 4.11 |
| £1,500-1,999 | 2.78 |
| £2,000-2,999 | 1.68 |
| £3,000+ (r) | 1.00 |
| **Household composition** | |
| 1 adult | 1.75 |
| 2+ adults (r) | 1.00 |
| **Self-perceived general health status** | |
| Excellent (r) | 1.00 |
| Very good | 0.79 |
| Good | 1.31 |
| Poor | 1.97 |
| Very poor | 2.15 |
| **Sex** | |
| Male | 0.8 |
| Female (r) | 1.00 |
| **Problems with mobility (moving around and walking)** | |
| Not mentioned (r) | 1.00 |
| Mentioned | 1.14 |
| **Asian ethnicity** | |
| Not Asian (r) | 1.00 |

| | |
|---|---|
| Asian | 1.79 |
| **Problems with memory or ability to concentrate, learn or understand** | |
| Not mentioned (r) | 1.00 |
| Mentioned | 0.69 |
| **Deals with problems well** | |
| None of the time | 1.31 |
| Rarely | 0.68 |
| Some of the time | 0.78 |
| Often | 0.61 |
| All of the time (r) | 1.00 |

*Note: all findings are statistically significant to at least the 5 per cent level (p<=0.05)*
*Sample: Understanding Society data[11] (UK sample of individuals in households aged 55+)*

The data from other ONS reports gives additional clues about the groups at most risk of digital exclusion. As 1.8 million women aged 75+ live alone[12], and nearly 30% of all "never users" are women aged 75 or over (1,958,000 million), it is reasonable to assume that a large proportion of the 64% of households without internet access are occupied by single women aged 75+.

Single women are also at greater risk of poverty than almost any other sub-group and the risk increases with age[13]. Prevalence of widowhood is also highest among this age group.[14] Loneliness (feeling always or often lonely) is highest amongst those living on their own (12%), people over 75 years old (9%) and females (7%), compared to a 6% average for the UK[15], so it is probable that widows aged 75+ would benefit most from the communications possibilities presented by the internet. There are also regional variations in reported loneliness (Northern Ireland, Wales and the East of England having the highest rates in the latest survey). In addition, some ethnic groups are also at greater than average risk of loneliness (for instance, Afro-Caribbean and Chinese people aged 65+).[16] Therefore, there may be scope for targeting specific previously excluded groups of older people.


## Geographical variation


Digital exclusion statistics at regional and local level are only available for the "never used" category. There is considerable fluctuation between quarterly results, so it would be wise not to put too much stress on individual figures. The ten most digitally excluded areas[17] on this measure are:

**Figure 3: Never used the internet by low level geographical location (England and Wales)**

|  | 2013 Q1 |
|---|---|
| County of Herefordshire | 26.5 |
| Gwent Valleys | 23.6 |
| Stoke-on-Trent | 23.4 |
| Walsall and Wolverhampton | 22.3 |
| Central Valleys | 22.1 |
| Peterborough | 22.0 |
| Sefton | 21.1 |
| South West Wales | 20.8 |
| West Cumbria | 20.0 |
| North and North East Lincolnshire | 19.9 |

This gives some initial evidence - although the local data should be treated with caution - that the most excluded areas in England and Wales are likely to fall into one or more than one of these categories:

- predominantly rural
- high proportion of widows and widowers[18]
- above average proportion of ethnic minorities
- disability/ poor health
- high prevalence of pensioner poverty [19]

This follows the same pattern as the evidence above from Figure 2, with the addition of the geographical element and this is a topic which would benefit from further analysis.

# 3    Older people using the internet

## What do older internet users use it for?

Of those on the internet[20], 79% of 65+ in the UK can (with confidence) communicate using e-mail, but this drops to 20% for using social networking and 13% for Skype and similar systems. This pattern for the 65+ group looks likely to change in the next few years as far as e-mail and social networking is concerned (the combined 55+ figures for which are 92% and 60% respectively) but not for Skype, where the 55+ figure is only 22%.

When it comes to searching for local commercial services (e.g. cinemas, restaurants), 61% of 65+ do so with confidence (79% of 55+).

69% of 65+ (80% of 55+) use the internet to find holiday information.

Regarding searching for local government services online, however, only 59% of 65+ (66% of 55+) do so, and only 54% of 65+ (72% of 55+) share pictures etc. online.

The table below shows the results for older people from the ONS Internet Access Module on internet use, ranked by the preferences of the 65+ age group (GB). [21] Although the ranking is similar to younger age groups, those aged 65+ who are online appear to place a relatively higher emphasis on communication and information-finding, and less on transactions, particularly goods and services. The 55-64 results indicate a possible shift in this pattern, particularly for commercial transactions and services. The table below refers to percentages of the total GB population.

The full table with all age groups is available [here](#).

**Figure 4: Internet activities by age group and sex, ONS GB 2012**

|  | 55-64 | 65+ |
|---|---|---|
| Sending/receiving emails | 69 | 41 |
| Finding information about goods and services | 66 | 34 |
| Buying goods or services over the Internet | 61 | 32 |
| Using services related to travel or travel related accommodation | 42 | 22 |
| Reading or downloading online news, newspapers or news magazines | 38 | 20 |
| Internet banking | 43 | 18 |
| Playing or downloading games, images, films, or music | 27 | 12 |
| Listening to web radio or watching web television | 27 | 12 |
| Uploading self-created content  for example text, photos, music, videos, etc. | 22 | 11 |

| | | |
|---|---|---|
| Telephoning or making video calls over the Internet | 23 | 11 |
| Social networking, for example Facebook or Twitter | 24 | 10 |
| Posting messages to chat sites, blogs, forums, or instant messaging | 18 | 7 |
| Selling goods or services, for example eBay | 15 | 5 |
| Making a medical appointment | 11 | 4 |
| Creating websites or blogs | 1 | 1 |

# 4    The benefits of internet use for older people

## Alleviating loneliness and social isolation

Until recently, there was insufficient clear-cut evidence of the effectiveness of internet use for alleviating social isolation in older people. It can now be said that the weight of evidence shows that internet use helps older people combat social isolation and there is some good evidence of its positive effects on loneliness.

A new review of the evidence from peer-reviewed journals (Lelkes, 2013) summarises the benefits derived by older people in terms of reduced social isolation and loneliness from a wide range of studies from several countries.[22]

Another recent report (2012) from the International Longevity Centre UK indicates a similar pattern of effectiveness of internet use for combating loneliness in older people in the community in this country.  It also found that people who reported not using the internet were more likely to say that they 'often' felt isolated from others and that people who said they did use the internet were more likely to respond that they 'hardly ever or never' felt isolated. [23]

A 2008 study based on regression analysis of quantitative data found that using the internet as a communication tool is associated with lower levels of social loneliness among older people.[24]

In contrast, another 2008 report by the Department of Communities and Local Government[25] found that,  "beyond cost of devices and services, those who suffer specific social disadvantages (social isolation and economic disadvantage) are least likely to benefit from the very applications of technology that could help them tackle their disadvantage."

There is also some evidence that people who care for older people, many older themselves, felt they derived similar benefit. In a recent study (2011), 42% of online carers say that the internet helps to reduce their feelings of isolation.[26] Increased social contact was also noted in an evaluation of an intervention in Kirklees, West Yorkshire.[27]

However, Lelkes also points out that there are limits to the efficacy of internet use in combatting loneliness, in "neutralising the negative psychological impacts for those who are isolated." But she concludes, albeit cautiously, that "the positive effects of internet access and internet use (including its likely impact on reducing social isolation) outweigh its potential negative effects (internet overuse, attention deficit, deterioration of cognitive skills)." [28]

## Educational attainment and lifelong learning

There is good, if rather old evidence of the educational benefit of internet use, for instance in New Dynamics of Ageing studies and evaluation of the Care Online project.[29]

## Health and well-being

The Care Online evaluation study found that there were some benefits for the health and well-being of older participants of the project[30], but recent evidence is scant. A more recent summary of the evidence by the Gulbenkian Foundation and Independent Age[31] fails to give much conclusive health benefit of internet use for older people, and even the stronger evidence on disability is not specific to older people. The Care Online evidence on disability only suggests its role as "an excellent source for hobby and interest - especially for users with mobility problems".[32]

Cotten[33] (2010) noted increased motivation for internet users who live alone. In a 2012 article in an online journal[34], Cotten also described the internet as a lifeline and a reason to carry out daily activities. She also suggests that internet use has a positive effect on depression. However, these observations were based on studies of the 50+ population.

Other studies from the United States[35] have come to the conclusion that older people without internet access and skills are at risk of becoming "increasingly disenfranchised and disadvantaged", particularly in health care. This is relevant here, as not only research on internet use by older people but also initiatives such as telehealth are further advanced in the US than in the UK.

Another US research paper (Luo et al, 2013)[36] attempted to assess the effectiveness of tablet computer use by patients in hospitals, coming to the conclusion that, while the use of tablets such as the iPad was generally well received by patients (all age), high initial expectations of implementing new technologies were not necessarily met and that further education on the realistic expectations of iPad benefits may be warranted.

## Accessing public services

There is a lot of detailed evidence of the advantages for government, local and national, in putting service information and transactions online, but no firm research evidence that their enthusiasm is shared by many older people. A recent (2012)

Policy Exchange report[37] found that "For most people, the prospect of interacting with government online may not be the most compelling reason to get online. Indeed, in research previously published by Policy Exchange, we found that for older people the primary attraction of getting online was highly personal, and included drivers such as communicating with dispersed family or seeing photographs of loved ones."

The 2011 Fujitsu report on online services for older people [38]is no more positive on this topic: "More than 70% of older people say that if more services were provided on the internet, they would still visit or phone their local council to receive services." For an overview of the issues raised by the government's plans for "Digital by Default", please see section 5 below.

# 5    Reasons for not using the internet

## Attitudes: perceived lack of need

There is a reasonable body of evidence on negative attitudes towards using the internet. Davis's Technology Adoption Model [39] emphasises the importance of 'perceived usefulness' and 'perceived ease of use' in creating the intention to adopt technology.  These are obviously slightly different for different age groups and may require different interventions (see Section 7).

However, there is little research which puts this into the context of all reasons, for instance, not having internet access at home. The ONS Internet Access Module from 2011 does, however, provide a little more detail[40]:

For the full survey group (aged 55+ GB), 57% gave their main reason for not having access at home in terms of not needing the internet, and 43% cited other reasons. This "not needed" response increases slightly with age, but even for the 75+, this reason accounted for under two thirds of non-users (62%) and, for the "younger old" (the 55-64s), not needing the internet still accounted for over half of all non-use (51%).

Internet use and attitudes are evidenced in the latest Ofcom survey[41], in which 64% of 65-74 year-olds without internet at home (61% of those aged 55-64, and 45% of 75+) said lack of interest was the main reason they did not have it.

Of those households without broadband in 2012 [42], 54% said they did not have a connection because they felt they didn't need one, compared to 22% who cited a lack of internet skills, 15% who reported equipment costs were too high and 14% who said that the cost of connection was too high. Less than 1% reported a lack of broadband availability in their area as a reason.

However, as with many surveys, there is a suspicion that the responses may not reflect the true reasons, attitudes and behaviour of respondents. In surveys such as the 2011 ONS Internet Access Module, it is impossible to discount the possibility that some were reluctant to admit personal failings and lack of knowledge and opted instead to say they did not need the internet at home. It is difficult to quantify barriers to internet use, which is why qualitative research such as the 2013 Qa report[43], based on in-depth interviews, is such a valuable source for analysis.

## Lack of awareness

Qa Research (2013)[44] found that all new users of the internet who were interviewed reported not knowing much about it and its perceived benefits before attending a training course. ONS statistics show that 50 per cent of those offline say that they don't want or don't need the internet. We suppose that many of these individuals are not aware of what the potential benefits to using the internet may be.

The Fujitsu report cited a lack of knowledge of what is possible and what is available on the internet as a reason behind the low numbers accessing local government services online.[45]

## Previous experience

Previously negative experiences with computers or the internet put people, particularly the older old, off using the internet. The 2012 report by UK Online Centres and ICM[46] reported that 43% of 75+ found the internet "too confusing" and 29% of this group said they found it difficult to "find opportunities online". It also found that 54% of current non-users described the internet as "frustrating", a finding backed up by the 2011 Oxford Internet Survey.[47]

In the Qa research[48], some respondents mentioned struggling to use computers in the workplace to carry out activities that they could previously have done competently. One respondent said that they were told not to touch the computers where they worked in case they lost everything on it.

## Fear

Many older people in the Qa qualitative research[49] quoted fear of computers and learning at older ages as significant barriers to using the internet. Others cited a fear that they may 'break' or 'bust' a computer as they are expensive. There were worries about 'pressing the wrong button' and accidentally signing up or paying for something. Many previously had fears about feeling or looking stupid. Some mentioned major fears about learning something in the later years. Some respondents said that they felt 'left behind' and that technology was moving too fast for them.

The 2011 quantitative Oxford Internet Survey bears out these findings. It cites retirees as being much more likely to get nervous about using technologies because

they might break something (45%, compared to 16% of employed respondents and only 6% of students.[50]

## Reliability

The Oxford survey[51] found that retirees are much more likely to get nervous about using technologies because they believe that technologies cannot be trusted because they fail in times of need (43%, compared with 15% of employed respondents and 5% of students).

## Lacking social networks

Small or non-existent social networks were not mentioned in the Qa research[52] as barriers to using the internet. However, some mentioned that children and grandchildren were 'busy' and did not have the time or patience to help them in using the internet. One respondent mentioned pride as an issue where their grandchildren knew how to access and use the internet and they did not.

## Cost

The ONS survey found that concerns about the costs (equipment and access costs) accounted for 10% of the 55+ total of non-users of the internet in GB. However, there was a clearer age pattern, with the proportion citing cost falling with age from a high of 18% for 55-64 to 6% for 75+.[53]

The 2012 Ofcom study of use and attitudes found a very similar pattern, with 14% of people aged 55-64 mentioning cost as a barrier to internet use, falling to 7% of 65-74s, and 4% of 75+. [54]

## Skills and training

Lack of skills was mentioned as the main reason for non-participation by 9% of the ONS respondents aged 65 or over in GB [55]. Even for the over 75s, this category was responsible for 11% of total.

However, our analysis of the latest OFCOM figures[56] - which allows us to estimate lack of skills in the total (older) UK population rather than just non-users, as in the ONS survey - reveals that the figures for those lacking basic internet skills is likely to be much higher. An estimated 6 million people aged 65+ in the UK (59%) lack the skills necessary for basic communication, 6.8 million (66% of 65+ UK) are not able to

search for information on the internet, 9.2 million (89%) do not know how to share (photos etc.) and 8.2 million (79%) do not know how to keep safe on the internet.

More than half the people lacking these four basic internet skills above are aged 75+.

Even for the 55+ population, the majority of the population lacks all these basic skills except communicating (47%).

## Practicality

The ONS Internet Access Module[57] found that, even in the 55-64 age group, only one in ten in GB gave having access elsewhere as their main reason for not having the internet at home. For the 55+ group as a whole, the figure was 5%. Even in 2011, the trend towards working past 65 may be reflected in the fact that 5% of the 65—74s also had access elsewhere, presumably mostly at work.

Physical disability was cited by one in fifty (2%) of the ONS 55+ group and this proportion changed little with age[58]. According to the Oxford Internet Survey (OXIS)[59], disability remains a key source of digital exclusion. Internet use by people with a disability remained steady from 2009 to 2011, at 41%, and is about half that of non-disabled (78%).

## Concerns about privacy and security

Concerns about privacy and security were hardly cited by any of the ONS respondents as a reason for non-participation.[60] Only 1% of the ONS sample group gave concerns about privacy and security as their main reason and these concerns accounted for 6% of those not submitting forms over the internet, a figure which also showed no age pattern. It seems unlikely that reluctance to admit this as a reason would account for large numbers, so it seems reasonable to view this group as a minority.

The Qa research also had only limited evidence of safety concerns being a barrier to using the internet, particularly for banking and shopping online, but recommended training on how to stay safe online was recommended by some participants.[61]

## Other issues

There may be other factors in play which have not been adequately explored yet. For instance, cognitive ageing and device design are highlighted by Czaja et al.[62]: "Generally, the existing literature shows that, although older adults are willing to use technology, many report usability problems with existing systems and these

problems may in part be due to the cognitive and perceptual demands placed on the user."

There is a need for more robust, peer-reviewed research, particularly into the design of internet devices and user interfaces.

## Digital by default

A recent opinion poll "Digital by Default" for Age UK[63] found that older people in general (55+, GB) were divided equally on whether everyone should learn to use the internet. Around 42% thought that they should, and 43% disagreed, with 14% neither agreeing nor disagreeing. Within the 55+ group, however, there was not a clear age distinction. Although the proportion of those agreeing fell with age, 40% of the 75-84s and 39% of the 85+ still felt that everyone should learn to use the internet, whatever their age.

However, there was a strong feeling that older people who did not want to go online, for whatever reason, should be able to access essential services by alternative means (phone, post or in person). Around 94% of the total (55+) agreed with this proposition, with 83% of them agreeing strongly. Interestingly, this also fell slightly with age, with 91% of 75-84 and 86% of 85+ feeling that alternatives should be in place. The premise that future older generations would gradually accept digital-only services seems to be contradicted at least for the next few years by the result for the 55-64 age group, which had the highest scores in favour of keeping alternatives (95% in favour, 85% strongly agreeing).

Even the premise that "older people should move with the times and use the internet as part of their lives" fails to show a change of attitudes with increasing age. Fewer than a third (32%) of the total 55+ group agreed with this statement and half (50%) disagreed, but there was little variation within the reported age groups, the 65-74 group having the most positive response (35% agreeing and 48% disagreeing).

# 6    Interventions to reduce digital exclusion of older people

## What has worked in the past?

There is little direct and credible evidence of the impact of interventions designed to address digital exclusion. Evaluated interventions are few and far between and even fewer evaluations provide robust and useable results.

The quarterly internet figures from ONS do show a very slow progression towards inclusion. However, the question remains: why are current efforts to address the digital exclusion of older people in particular not having more effect? The Age Action Alliance summary[64] admits: "We are failing to progress enough people from messaging about the benefits of digital literacy into action, and this includes older people. We need to rethink the engagement to action route and we suggest that the focus moving forward should be to capacity build others, including the targeting of specific groups, to deliver digital inclusion and digital skills rather than mass message the intended beneficiaries directly".

With a topic as fast-moving and technologically based as digital inclusion, only more recent interventions are relevant. The direct benefits achieved by UK interventions in the last 5 years are summed up best by Mathers[65]:

## Get Digital, Digital Unite (2010-2012)

**Programme focus:**

- Digital inclusion through comprehensive, structured learning programme for residents in sheltered housing, working with staff, landlords and wider community.

**Evaluation measurement:**

- Mixed method: *quantitative* (online and paper surveys, *baseline, progression, outcome*), plus *qualitative data* from 12 case study sites.

**Impact:**

- *Skills and confidence:* 57% of staff have increased confidence in use of ICT, 83% of residents have a more positive attitude towards computers and the

internet, 88% likely to use a computer/the internet for email, phone calls, search for information, access public services and use social networking sites.

- *Reduced isolation and loneliness:* 50% find it easier to keep in touch, 42% easier to meet new people, 42% contact with family and friends

- *Enhanced health and wellbeing:* Almost 20% of residents now look after themselves better and know more about their health.

**Evaluators:** NIACE (2012)

## UK Online Centres

- National coverage through a network of 5,000 centres

- Longitudinal daily DI data collection + daily surveys

- Products, support, advocacy, research

- 4 specialist networks:

    – Disabled people

    – Carers

    – Older people

    – Into work

- 1m people to be "shifted" online

- 430,000 shift (43%)

- 1.634m contacts shifted per month
  (3.8 per person per month)

- £157m saved in a year based on £8 saved per contact shifted online

**Evaluators:** Department for Education and Skills (2003)

## Social Impact Demonstrator Project (2007-8)

**Programme focus:**

- Partnership working through UK online centres to reach socially disadvantaged people and engage them in ICT activities.

**Evaluation measurement:**

- 3 stages of data collection: *baseline*, *progression* and *outcomes*.

- 4 focus groups and 8 individual semi-structured interviews

- 20 individual project evaluations

**Impact:**

- *Cost efficiency:* 12,234 people were engaged at a cost of £163 per person.

- *Skills & confidence:* 60% now happy using computers and internet, 70% now confident.

- *Employability:* 40% progressed in terms of training and employment etc.

- *Social capital:* 39% met up with new friends and 32% volunteered.

**Evaluators:** Ipsos MORI (2011)

## Care online (2003)

The educational value to older people of the Care Online project has been assessed and summarised by Loughborough University.[66]

Two-year pilot project: introduced computers and the internet into the homes of 50 older and vulnerable volunteers and provided shared internet access at five schemes housing older people across the Market Harbrorough district of Leicestershire.

Evaluator: ESRI Loughborough (2005) [67]

## Reach for IT, Age UK (2010-2011)

**Programme focus:**

- Tackling the digital exclusion of older people in residential care homes through partnership working with five community-based organisations.

**Evaluation measurement:**

- Qualitative practice reporting

- Social Return on Investment (intended)

- **Sus-IT: Loughborough University**

    - Participative research into older people in the digital world

- **University of London, Imperial College, evaluation of NHS Choices**

    - Measurement of financial benefits to Government of digital interventions

## Intergenerational programmes

Intergenerational interventions such as Age UK London's MiCommunity Project have been shown to have tangible benefits for combatting digital exclusion in older people, but its effects were by no means limited to this. Its primary aim was to use intergenerational volunteering to build a stronger sense of community and connectedness between young volunteers and older people, bridging differences in age, ethnicity and culture and challenging negative stereotypes.

The programme aimed to help young people (aged 16-19) to share their IT skills with older people (aged 60+). It was intended that the project would establish important links and understanding between the two age groups, whilst enabling older people to use digital technology more confidently and promoting volunteering among young people".

The evaluation report found:
"MiCommunity has the potential to create significant and lasting change in communities through improving community cohesion, reducing social isolation in older people and improving their ability to remain independent for longer, improving younger people's employment prospects and reducing poverty in both generations."

There is also some evidence of practical benefits derived from digital exclusion interventions, such as the online falls advice evaluated by Yardley and Nyman (2007).[68]

Overall, there is not enough clearly evaluated and robust evidence on the general theme of what works in combatting digital exclusion to draw many conclusion from this body of work, and some of the evaluations are now too old to be of relevance. The main conclusion which comes out of these studies is that better evaluation, built into the project plan at the beginning, is now urgently needed.

# 7    The future of digital inclusion

## What are the future trends?

**Figure 3: Non-use of the internet by age group, 2002-2013, GB**
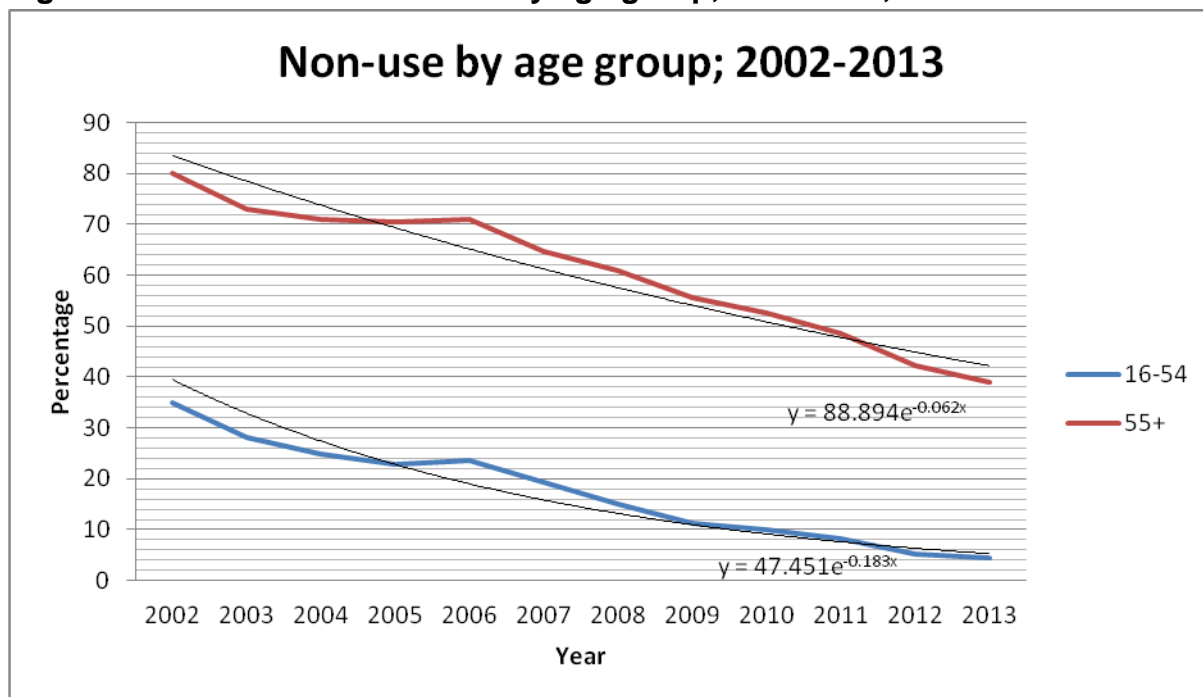


*Exponential (annual) percentage change in non-use between 2002 and 2013*

The percentage of those who do not use the internet has steadily declined between 2002 and 2013. The rate of annual percentage change in the prevalence of non-use amongst those aged under 55 years is on average **-16.7%**. The rate of annual percentage change in non-use amongst those aged 55+ is on average **-6%** a year.

The average annual percentage point change is also greater. Each year on average the portion of non-users aged 55+ has decreased by 3.7 percentage points compared to a slightly lower rate of 2.8 points percentage points amongst those aged 16 to 54.

The decline in the number of non-users has slowly tailed off in both age groups hence the need to capture the change with an exponential curve. It looks as if the rate of decline has tailed off more greatly for those non-users aged 16 to 54.

**Figure 4: Exponential projections of internet non-use by group, GB**
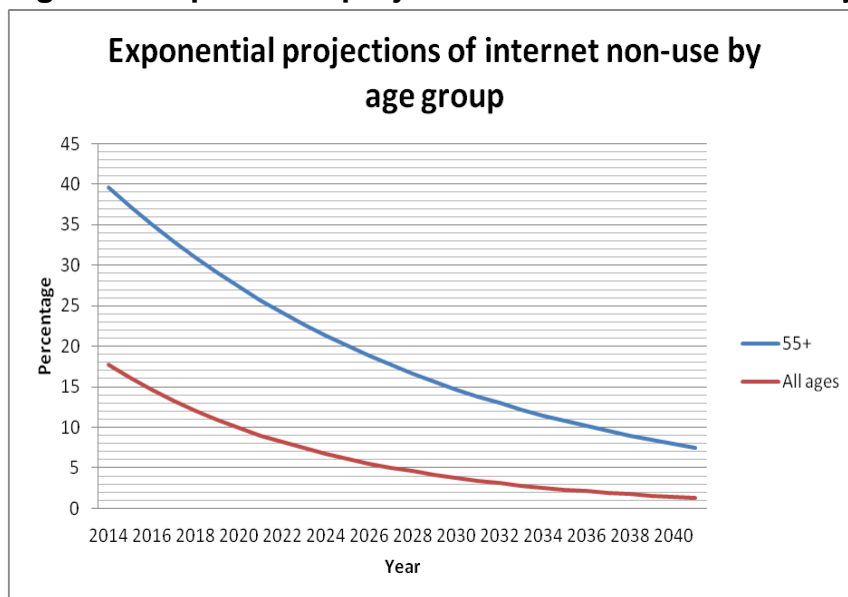


Non-age related non-use of the internet will represent 10 per cent of the population by 2020. Exponential trend projections illustrate that by 2037, 10 per cent of those aged 55+ will not currently be using the internet (defined as having used in the last three months) down from 39.1 per cent in 2013. A more complex analysis is required to discern the contributions of mortality rates at older ages and new users of the internet towards the downward trend in internet non-use.

For the foreseeable future, a considerable number of older people will not be using the internet. Go ON UK has ambitious plans to make the UK the world's most digitally connected nation. Despite the fact that the UK has the largest number of internet users, as the statistics show with current rates of progress, achieving the goal of getting the vast majority of the population online is unlikely to happen in the first half of the 21st Century.

## Trends in Use

Whereas there is some evidence of the effectiveness of the internet on reducing loneliness, and a small amount to indicate the potential of social networking for older people, if only so far Skype and e mail, no recent research has been found in this review about the likely effects of the rise of internet shopping and of the possible consequences of a likely rise in the scale by older people of sites such as Amazon, e-Bay and particularly supermarket food delivery services. There is little evidence to support speculation about possible effects on traditional forms of shopping, high streets, mobility of older people, social isolation etc.

## Technology

Similarly, the topic of new technology, and the potential of initiatives in the pipeline, is not one covered by published research. What evidence there is will be closely guarded by manufacturers.

Some recent trends, such as internet on the go, are also sparsely researched, although the Ofcom media literacy[69] survey shows the older population lagging behind younger counterparts, with only 7% of people aged 65+ using any "alternative device" to access the internet (mobile phone, games console, portable media player or tablet), compared to the all-adult figure of 48%.

There are unanswered questions raised by these topline statistics. Is the phenomenon of an "age-lag" standard in the adoption of all new digital technologies – a theory made plausible by the late adoption of devices such as tablet computers, which are now regarded by many as age-friendly, at least in comparison to others – or are there special factors such as screen size and legibility at play here?

## Gaps in the evidence base

The following topics have come up so far from this review, which we feel have not been adequately addressed:

- More consistent and robust evaluation of DI interventions is needed as a matter of urgency, so that we can have a clear picture of benefit, including cost-effectiveness, quality of life and health improvements. Current evaluations generally fail to give the evidence necessary to prove the benefits of prevention and social engagement claimed
- What new technologies are in the pipeline? Are there, for example, any user- and age-friendly devices which will soon be available to potential internet users which will produce a step-change in the number of older people online?
- There is still not enough evidence of the positive health effects (direct or via addressing social isolation, loneliness or depression) of internet use.
- Overcoming attitudinal barriers to internet use, for instance by giving clear evidence of the benefits, particularly financial, of being online and transferring that knowledge effectively to the right target audience.

There is also a need to know more about:

- The Digital Champion approach to proactively seeking out older people who are offline.
- The oldest-old; their levels of use, reasons for non-use, geography.

- Identifying measures of general non-ICT based capabilities that help individuals participate in an ICT-based activity i.e. numeracy, literacy and problem solving skills.
- Digital inequities relating to socioeconomic status, income, level of education, ethnicity, sex, age, connectivity and geography.
- Outcomes of inclusion-related initiatives/opportunities (this social action would provide evidence towards this). Learning from existing individual and collective digital inclusion practices to help understand why technology-related opportunities are not taken up or inclusion outcomes are not as intended (what works?/learn from what didn't).

## Better interventions

The design of future interventions to address digital exclusion should, according to Hill et al.[70], take into account all the relevant issues connected with this topic. The authors show how previous interventions have failed to meet some or all of their stated goals because they did not cover all the necessary aspects of personal perception, culture, interpersonal relationships and operational skills outlined in Figure 5.

**Figure 5: What needs to be "in place" for successful digital inclusion of older people to take place (from Hill et al 2008)**
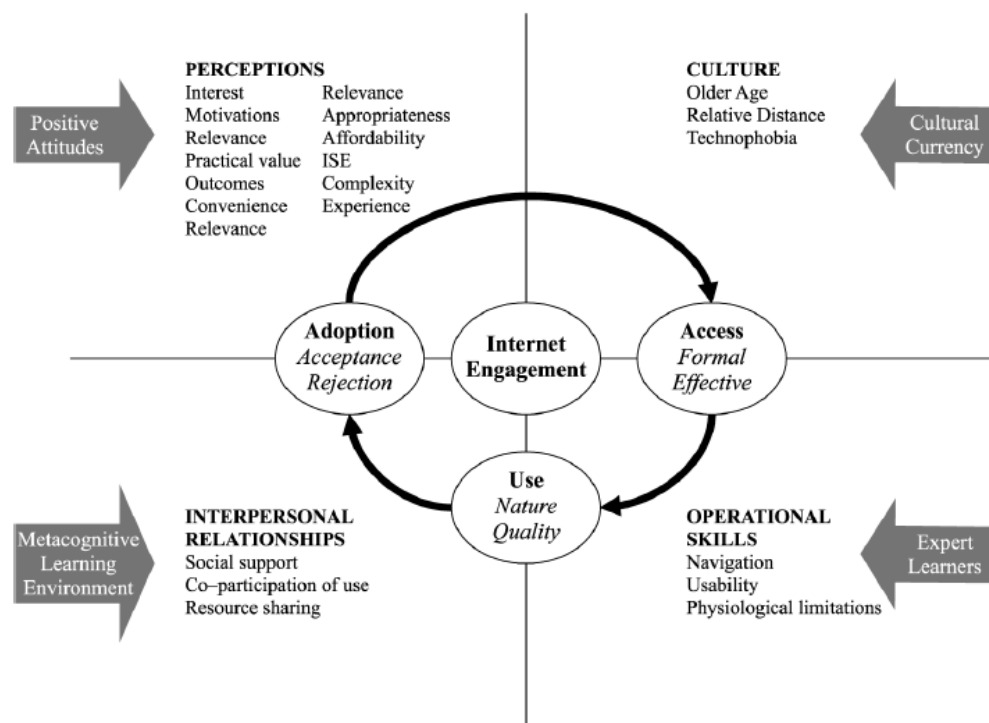
Older people may learn to use technology in different ways to those still at school. Perhaps older people expect the traditional format of teaching by an expert rather than the trial and error approach which is quicker for IT that follows industry standards. This could be an argument for age appropriate and/or intergenerational training.[71]

A handy list of "provocations" (Nominet Trust 2013) can also help to focus attention on the factors to be considered and the breadth needed in designing interventions to tackle digital exclusion:[72]

**1 Look at personal needs and interests as well as common motivations - one digital size won't fit all.**
While there are general benefits at any time of life in using digital technology - whether for entertainment, shopping, learning, information - everyone has different priorities and these will be shaped by life experience and current circumstances. The best way to engage people is to start where they are, the particular interests they have developed, and the personal challenges they face.

**2 Build on past experience with familiar technology as well as offering new devices - they may do the job.**
New devices can be challenging, and recent developments of familiar equipment may offer an easier route for some. Smart TVs and smartphones may provide what's needed without learning to use a computer.

**3 Consider the new life skills and access people will need as technology changes our world - using technology is ceasing to be optional.**
Public services are becoming digital by default, and new opportunities for employment require at least an email address. It will be important to make the use of digital technology as accessible and easy as possible - or encourage people to act as "proxies" in helping make the connection with the online world.

**4 Turn the challenge of learning about technology into a new social opportunity - and make it fun.**
Learning how to use digital technology can challenging. It takes time, and having someone to help can be important. Loneliness and isolation are a big challenge for some later in life. By getting together so learning becomes a social experience we can achieve benefits on both fronts, and enjoy the experience as well.

**5 See digital technology for later in life as a major market - co-designing with users could offer wider relevance.**

On the one hand people are living and remaining active longer, and on the other hand facing a wide range of health and social challenges for longer. This will provide a growing market among older people, and an opportunity to design and test technologies for relevance and usability with any users than have diverse interests and capabilities.

**6 Address social isolation and other challenges through a blend of online and offline - they don't need to be different worlds.**
Digital technology can enable virtual friendships that lead to meetings, support social learning, and underpin projects for new forms of sharing both on the physical world and online. The greatest benefits may come from blending face-to-face and online activities.

**7 Enable carers and care services - both for direct use of technology and to act as proxies.**
More could be achieved by integrating digital technology into services, and supporting carers in their use of technology. This will be increasingly important as older people who are not connected may require "proxy" helpers to use online public services.

**8 Use digital technologies to enhance existing connections of family and friends - and help each other learn.**
Free video calls, photo-sharing, email, texting and the use of social networking sites are part of day-to-day communications with family and friends for many people later in life. Family members can help each other learn about digital technologies.

**9 Value the role that older people may have in acting as digital technology champions - and providing long term support**.
Older people know the challenges of using technology later in life, and may be best at providing the continuing support needed for its adoption. Demonstrations and short courses are seldom enough.

**10 Look for ideas among those providing digital training and support - and help them realise them.**
Those working directly with users of digital technology will have insights into what works, and where development would be valuable. With some support they could turn ideas into projects.

From the Qa research, the following guidance in offering DI initiatives for new and inexperienced older internet users comes out[73]:

Make the benefits of taking part clear from the outset (especially in adverts and promotional material). Focus on the activities which one can carry out including day-to-day activities which we know can often be performed more quickly and

cheaply online as well as less typical tasks which emphasise the endless possibilities of the internet. Distance from publicising such tasks as internet activities and detach the concept of technology as a conduit.

A named contact appears to work well on publicity material, people know who they need to talk to and a photograph of the individual is also considered beneficial.

On any larger pieces of marketing consider using case studies, for example giving an example of how one older person overcame barriers to accessing the internet to now become an active user. These could also be displayed at training provider and community settings to widen reach to current non-users.

On paper, all those interviewed were involved in courses enabling them to gain GO ON UK basic online skills competencies. However, recall of covering how to identify spam and confidence in which websites were trustworthy was sometimes low. There was also a continued unease around internet shopping, banking, and providing personal details over the internet which is a significant barrier to the expansion of internet use and 'digital by default'. Courses need to place more emphasis on internet security and safety by placing the risks in context and ensuring that older people are aware of the protection that is already in place from online retailers/banks, e.g. PayPal, paying by credit card, bank protection against internet fraud. More promotion of the Age UK website and links to trusted suppliers could be useful.

It may be that case studies, or the opportunity to meet people that have taken internet use a step further (online transactions, accessing services online etc.) could be particularly beneficial to give people confidence in maximising the internet to its full potential given that there is still a reluctance to provide personal information online by many.

It is not known to what extent digital inclusion providers maximise the enthusiasm generated by some learners in terms of encouraging them to become internet champions themselves. With word of mouth being an effective means of finding out about courses this could be a further step some providers could take. Individuals who were particularly anxious or reluctant learners pre-course may be most effective in this role.

This research has also highlighted that some individuals experience higher levels of computer and/or learning anxiety than others. For these individuals a pre-course assessment/one to one session may be useful in allaying any initial fears, offering reassurances that the computer will not break etc.

As illustrated by this study, the internet courses had considerable success in stimulating further interest in continued learning and internet use. However, it is also clear that older people can struggle to remain online once the course has finished as a result of getting 'stuck' – especially if they do not have a support network of family friends. Therefore, consideration should be given to setting up a drop-in or technical telephone support service at a minimal cost to ensure that those who get online can stay online.

Reduce perceptions of cost as a barrier through sharing any information on particular packages that people could access with free internet, any special packages for older people and any drop-in and after care services people can use so people do not feel they have to buy their own computers/have broadband to access the internet.

As people tended to only be aware of one particular course this raises the question of whether more could be done for providers to offer options for both group and one-to-one courses so that those that could potentially be put off by one format are not deterred and that there is something suitable for everyone.

As physical accessibility is a key influencing factor when considering a course it raises the question of whether some of the more isolated and hardest to reach older people are genuinely able to access courses, particularly if they do not live in any kind of social, sheltered or independent living accommodation and as such not necessarily coming into contact with services on a regular basis. Some interviewees suggested more individuals could be interested in taking part in courses if tuition took place in the home.

It also appears that older people are more likely to engage with the internet if courses are provided at the most localised level possible and are delivered within familiar surroundings. One particularly successful example of this included a course delivered with the help of the local Resident's Association in publicising and recruiting participants and delivering the course in the heart of the community.

Interviewees in this study were largely unaware of where they could find information on internet courses and had either stumbled upon the course by accident or had been alerted to it by family. It is evident that family play a key role in channelling this information and encouraging/persuading. Therefore, a campaign/information targeted at family members may be useful in communicating the message including emphasis on reducing the demands on family member's/carer's time e.g. online grocery delivery. Even if this does not

result in the older person being cared for going online, communicating this message to carers within the 55-64 age groups may still be of benefit.

## Better evaluation

There will be an ever-increasing flow of initiatives coming through to describe and model what works in interventions to assist older people in general, including probably in combating digital exclusion. The results from these will not come through for some time, but one example of an area to watch is:

**What Works Centres**

- *Launched:* March 2013.

- *Aim:* to improve the evidence used in decision making across a number of key policy areas.

- *Approach:* creation of specialist independent research centres

For a summary of the joint Cabinet Office and Treasury initiative (and how the promised £200 million will be spent, see the "What works" planning document.[74]

Overall, there is still considerable scope for improving the quality of evaluation of DI interventions and initiatives.

## Scope for future research

There is a need for further research, particularly in properly evaluated "model" interventions such as those likely to be funded by Big Lottery. Even if these include digital inclusion projects for older people and if they incorporate some form of "live" or interim assessment system, results will not be available in the next year or two, perhaps much longer. In the meantime, there is an opportunity to provide quicker "research wins" by interrogating the larger-scale national surveys, now that we have a clearer idea what to look for. Amongst these would be:

- An update of the Price Waterhouse Cooper (PWC) estimate of the financial benefits of internet use, especially for older people
- Analysis of Labour Force Survey (LFS) and Office for National Statistics (ONS) Internet Access Module to discern the profiles of the non-users

- Local-level analysis and neighbourhood analysis using Census 2011. Age UK could do this, using best proxies (see above)
- Cross referencing spending on energy, insurance etc. against internet use in Family Resources Survey (FRS)
- Cross referencing internet usage (ONS) with Subjective Well-Being Module
- Further analysis of the ONS regional and local authority-level figures to map digital exclusion within England and Wales
- Further analysis of Oxford Internet Study (OXIS), over time and cross referencing
- Using OXIS and ONS and LFS for cross-referencing and authentication
- Factors associated with: being offline, recently coming online and the effects of recent bereavement (widowhood) on DE
- Local statistics to target specific areas of expected high DE using Census 2011 (see next section)
- Research into design of devices for internet access appropriate to the older and particularly oldest sections of society (use of internet TV, controllers etc.)
- OXIS analysis to unearth benefits to using the internet
- Using younger cohorts as a predictor of future "older" digital exclusion (assumption re non-age related elements of DI). Use Oxford Internet Survey to predict "rump" (those not amenable to change or unreachable) and dates
- More detailed age-disaggregated analysis of latest technologies from the next set of Ofcom statistical publications

## What can Age UK do to digitally include older people?

**For discussion**

Amongst the themes and knowledge transfer opportunities arising from this research are:

- *Partnership working and accountability:* with the 'Alliance for Useful Evidence', a network of over 1,000 members who champion evidence, the opening up of government data for interrogation and use, alongside the sophistication in research methods and their applications. [75]

- Identify DI at local level and set up a Digital Exclusion Index to enable targeted intervention

If you have any questions or feedback on this evidence review, please contact
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