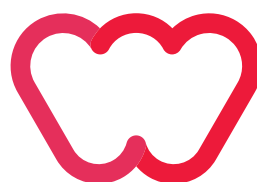


**Barriers and
'What works'
solutions to
Digital Participation
For All**

**by
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WaveLength
Fighting loneliness

Barriers and 'What works' solutions to Digital Participation For All

Across the globe, almost half of the world's population is digitally disadvantaged or digitally excluded. Many of these people are the world's oldest and poorest citizens. Table 1 below shows that the number of people world-wide who are still not online remains high, despite many efforts and interventions intended to promote digital engagement since the 1990s. The consequence is that the advantages and benefits of digital technologies are still not experienced by everyone.

TABLE 1: WORLDWIDE INTERNET USERS

<u>Worldwide Internet users</u>				
	2005	2010	2017	2019 ^a
World population ^[6]	6.5	6.9	7.4	7.75
	billion	billion	billion	billion
Users worldwide	16%	30%	48%	53.6%
Users in the developing world	8%	21%	41.3%	47%
Users in the developed world	51%	67%	81%	86.6%

^a Estimate.

Source: International Telecommunications Union
<https://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx>

DIGITAL PARTICIPATION IN THE UK

In the UK 10% of the UK adult population (5.3 million) are non-internet users and 4.8 million of these are over the age of 55 (91%) and 40% of these are aged over 75 according to the Office for National Statistics. Older people; low-income groups and asylum seekers are amongst the groups most likely to suffer digital exclusion.

¹ Defined as people who have never used the internet or not used it in the last three months.

² Office for National Statistics (2019) Exploring the UK's digital divide, London: ONS

³ Lloyds Bank (2019) UK Digital Consumer Index:

https://www.lloydsbank.com/assets/media/pdfs/banking_with_us/whats-happening/LB-Consumer-Digital-Index-2018-Report.pdf

Improving the levels of digital inclusion has long been a focus of attention for nations and organisations globally seeking to increase the uptake of digital technologies and the internet amongst its citizens. With the onset of the COVID19 pandemic and the ensuing lockdown, the reliance on digital technologies and the internet for communication, entertainment, information, essential shopping and access to services such as healthcare has brought the pre-existing digital divide into an even starker focus. For those with good internet broadband at home and the skills to use it, doing most of the things that support us in our daily lives remained possible, if different and with many difficulties. But for those without access or digital skills, isolation and inequality became more acute.

There are over 11.8 million people aged 65 and over in the UK and this number is projected to reach 20 million by 2030.

The number of older people still not online remains high. Currently, 4.8 million British people over the age of 55 do not use the internet -this group makes up 91% of 5.3 million British residents who do not use the internet.

Older people are more likely to live in rural areas. Between 2011 and 2021, the number of older people living in rural areas is projected to increase to 29% in contrast with 20% in urban areas.

Recent surveys in the UK show that while around 90% of the total population regularly use the internet, these figures decline to 78% for the 64-75 age group and to less than 40% for those over 75. Significantly, UK adults aged 75 years and over had the highest rate of lapsed internet users at 4.8%, (compared with only 0.2% of adults aged 16 to 24 years).

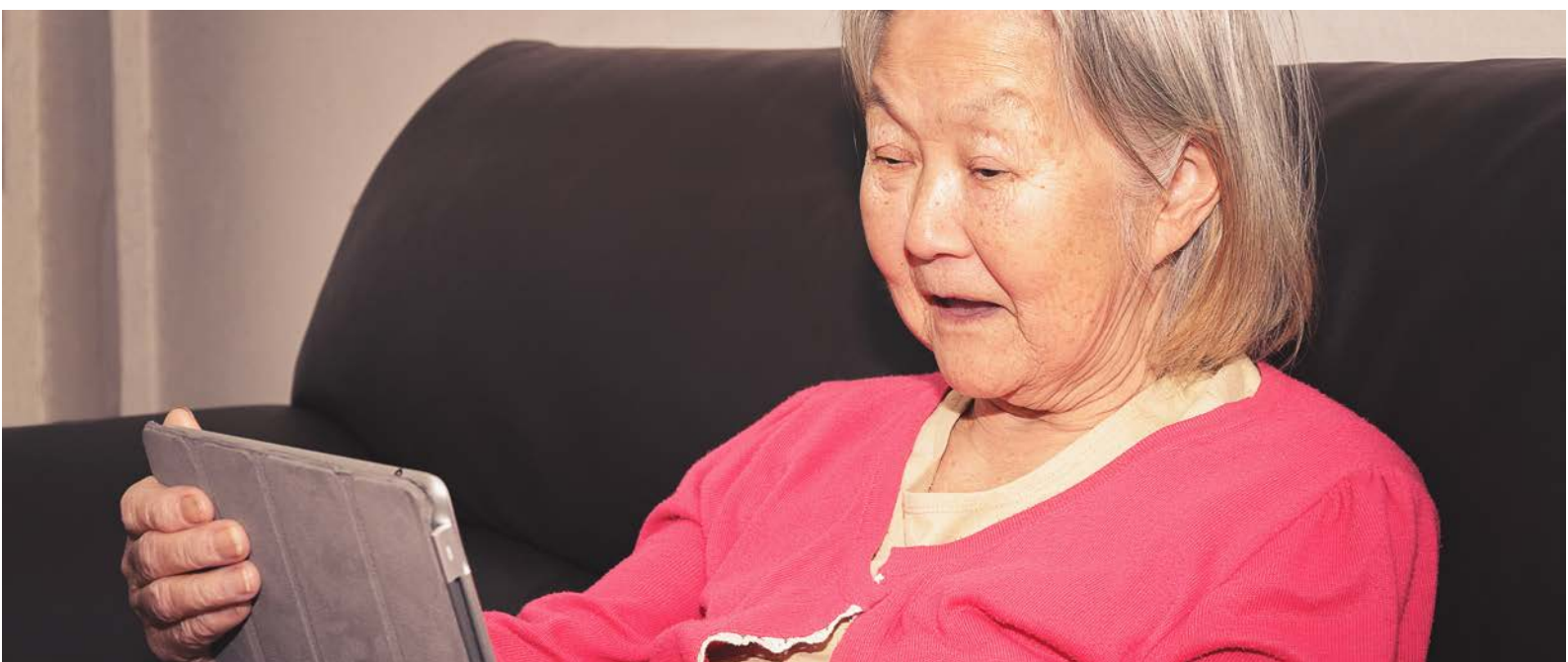
They are also more likely to be social housing residents, and/or be disabled (at 65, men have a 47 per cent chance of remaining disability free, compared to 42 per cent for women). Older people will therefore share many of the needs and characteristics of these other groups of digitally-disadvantaged people and this reality needs to be factored into the planning and provision of ICT learning support.

Many attempts to increase digital Inclusion have been made across the world over the past two decades. Although the approach and methodology vary considerably, surveys and studies of the outcomes show common themes emerge in both the barriers and in the facilitators/solutions found to successfully overcome or at least reduce the barriers in practice, as shown in the table below.

TABLE 2: SUMMARY OF COMMON BARRIERS AND FACILITATORS

COMMON BARRIERS	FACILITATORS: WHAT WORKS
<ul style="list-style-type: none"> • Access issues/problems; • Low confidence; • Support void; • Stress & fear; • Poor design; • Perceptual-motor and cognitive challenges. 	<ul style="list-style-type: none"> •Ease of access; •Empowering users; •Appropriate design; •Light-touch administration; •Supportive human facilitation of learning •Building confidence.

Each of the above barriers and facilitators to digital participation will be considered below.



BARRIERS TO DIGITAL PARTICIPATION

1. ACCESS ISSUES/PROBLEMS

- The common barriers relating to access are:

Ownership of and access to a digital device:

- Lack of ownership of a digital device curtails access considerably
- Where individuals can only afford one digital device, this may often be a smartphone. This may limit access as not all functions are readily available on a smartphone and therefore require access to a computer.
- Reliance on access to a computer at a public library or other location can incur costs, and involve difficulties caused by inadequate public transport or by inaccessible physical spaces.
- Public access to digital technology is subject to time-limited free sessions and scheduling restrictions.

Data and Connection:

- The confusing complexity of phone and broadband packages poses a problem for many users. The jargon and consumer choices wrongly assume the user has considerable prior knowledge. Some users may be confused or even frightened by the complex options (for example, whether to 'pay-as-you-go'; purchase a contract - and for what duration; whether to prioritise price or speed, and in the case of mobile broadband how much data they are likely to need (e.g. 5GB, 100GB etc). Most home broadband suppliers require financial commitment to a contract of at least 12 months which will not be affordable for many users.
- Low-cost options have a number of disadvantages and can leave people without internet access (e.g. when they use up all their mobile data allowance) and slow internet speeds.

Ability to use device:

- While access and connectivity are clearly necessary prerequisites for digital engagement, they are clearly not sufficient: the user has to know how to make use of a digital device to use the internet. What needs to be addressed is that many of those not currently engaged in the digital world often lack the psychological resource to do this - and may not even know how to switch it on.



2. LOW CONFIDENCE

Low confidence characterises many digitally-disadvantaged people. For some, lack of confidence and a sense of inadequacy permeates many aspects of their lives, not only their use of digital technologies, and reflects the long-term impact of multiple disadvantages of low income, low educational attainment, poor housing, and poor health and wellbeing.

For others, a lack of confidence in their ability to embrace digital technologies stems from awareness that they lack the digital skills possessed by most of the population. Such individuals may have no experience of using a computer either in their work or in their personal life and may struggle to understand even the basics of how to turn on a device.

Frequent causes of low confidence in using digital devices:

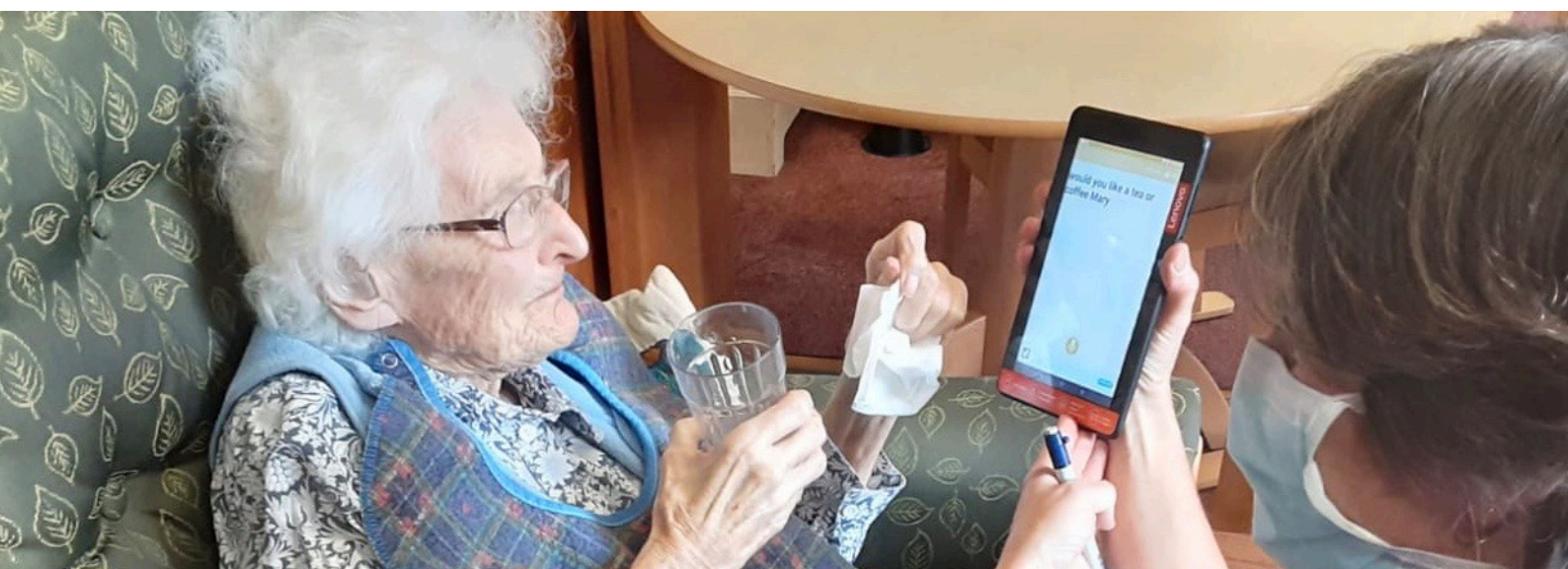
- Infrequent use can give rise to difficulties remembering sequences of operation (and details such as passwords);
- IT helpers who explain procedures too quickly;
- Performance of the problem task for someone (rather than helping the person to learn to do the task);
- Being taught on an IT device/software that is different to the device/software used at home;
- Learners feeling the need to seek frequent reassurance that they are using a digital device/system correctly, and the embarrassment that comes from this.

The causes of low confidence identified above combine to create a barrier to engagement with digital technologies.

3. SUPPORT VOID

There is a widespread void in the availability of ICT support for those not in education or employment. In contrast with the established provision of digital skills training and IT support most work organisations offer, the only available learning support tends to be provided in the context of job search and benefit claims. Such support is patchy in availability, quality and ethos. It is often short-term, delivered 'top down' and by 'fast-churn' volunteers. None of these features are conducive to a consistent and supportive environment for digital engagement.

This lack of support is exacerbated by the often reduced nature of the informal social networks of the long-term unemployed, sick, disabled or retired. This means there is a pressing and urgent need for effective, sustainable and socially-embedded support for digital participation in the home and in the community. (Damodaran, L. and Sandhu, J., 2016)



4. STRESS AND FEAR

Stress and fear in many forms are very powerful barriers to digital engagement. Fears include worries about widely- publicised scams and identity theft. In addition, there is fear associated with the personal distress and deep frustration caused by trying to understand or use a (new or 'upgraded') digital technology without the relevant underpinning concepts and tools.

Common sources and causes of fear shared by many digitally- disadvantaged users include:

- Lack (or perceived lack) of own ability to learn new digital skills combined with daunting learning processes and experiences;
- Worry about frauds and scams and the risk of becoming a 'victim';
- Potential for serious negative consequences (e.g. major financial loss) from mishandling a digital transaction;
- Concerns about serious unintended consequences (e.g. being suspected of fraud) as a result of user error(s) in completing on-line claim forms and other transactions which have unfamiliar protocols;
- Uncertainty over online safety (e.g. protecting their privacy/identity and preventing hacking);
- Lack of knowledge and understanding of how to install updates or virus protection software;
- Fears of social media, (e.g. of being 'trolled');
- Embarrassment at having to repeatedly ask for help
- Feelings of humiliation as a result of negative assessments of digital skills;
- Stress and difficulty associated with 'digital by default' procedures (e.g.in completing complex and lengthy procedures to apply for Universal Credit);
- High financial cost of technical help when something goes wrong;
- Frustration and associated personal cost to the user of losing their data/access to a website (e.g. due to time constraints on public computers).

5. POOR DESIGN

Poor design is a major barrier to successful digital engagement for many. Going online whether using a smartphone, tablet or laptop may pose usability issues regarding the design of the hardware and/or software. Many devices are simply not designed with usability in mind. This means that many usability problems are common, including the following:

- Screens that are confusing and difficult to navigate (e.g. due to small font size and cluttered/complex displays)
- Unclear operating procedures.
- Inconsistent web experiences (as a result of websites appearing differently on different digital devices).

- Inconsistency across web browsers of shortcuts for common actions, such as bookmarking a website or replying to a message.

Usability challenges such as those listed above tend to 'block' and confuse many people, particularly those with disabilities. The design of a webpage should therefore give options for users to easily customise the page for their own needs.

6. PERCEPTUAL-MOTOR AND COGNITIVE CHALLENGES

Perceptual-motor and cognitive capabilities encompass mental processing speed; working memory; ability to read, process or abstract information; ability to learn new skills; and speed and accuracy of hand-eye coordination. Any or all of these capabilities can be compromised as a result of particular existing or acquired conditions and/or circumstances, including ageing. Such changes in capabilities have important implications that can impede use of digital technologies.

- Difficulty using a mouse or completing mouse-based tasks (e.g. to select items or drag and drop an item on screen);
- Difficulty using touchscreen devices that require accuracy (e.g. selecting keyboard characters or placing cursor for editing).

Cognitive challenges include:

- Losing their location on a screen;
- Becoming overwhelmed by features or large amounts of information;
- Difficulty remembering sequences or steps required to complete a digital task;
- Trouble recalling log-in details, such as usernames and passwords;
- Difficulty navigating websites and devices.
- Effects of taking medication are also known to negatively impact cognition and performance and can result in slower processing speeds and difficulties with concentration

FACILITATORS OF DIGITAL PARTICIPATION

1. EASE OF ACCESS

Ease of access to digital devices and to the internet is a crucial enabler of digital engagement. It is promoted through:

- Personal ownership of digital devices;
- Minimal use of technical language and jargon;
- Budget-friendly (but good quality) phone and broadband packages;
- Knowing what to do with the technology (or having access to someone who does and will help you).
- Appropriate design of hardware and software

Making digital technologies as accessible as possible – along with empathetic learning support - encourages even the most digitally-excluded to start exploring a new world of possibilities and helpful tools.

2. EMPOWERING USERS

Experience shows that entry into the digital world is achieved by empowering users to start to engage digitally by doing something online that motivates/interests them i.e. meeting their needs and pursuing their personal goals. The following approaches facilitate this process:

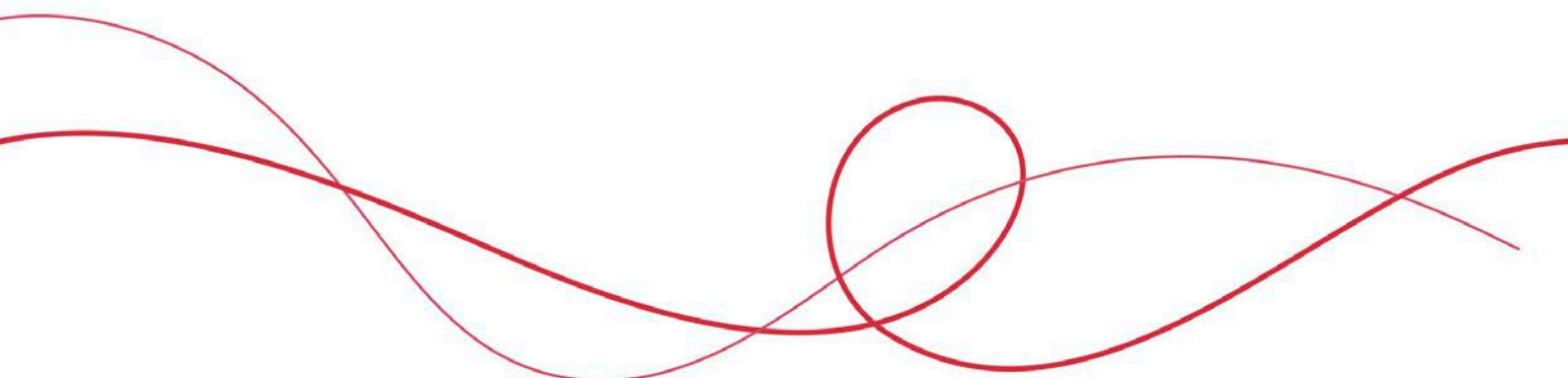
- Encouraging and enabling users to progress with learning and development at their own pace (guided/supported exploration) without imposed assessment or evaluation (though these are useful to have available as options to users who want these processes/procedures).
- Co-creating readily available, accessible and affordable opportunities for learning and development, whether as individuals or in social/communal settings.
- Enabling easy access to trustworthy information and support to help people make choices and maintain ongoing digital participation and engagement.

3. APPROPRIATE DESIGN

Research findings indicate that appropriate design of hardware and software interfaces is a critical success factor in achieving digital participation. (Damodaran, L. and Olphert, C. W. 2013). Yet in many cases, design is not appropriate for its intended users – especially older or disabled people. To achieve appropriate design begins with a sound understanding of the people for whom the solution is intended, not with the technology or cost. Understanding peoples' abilities, past experiences, current state of knowledge, hopes, desires and even dreams, enables designers to begin to craft appropriately designed solutions which:

- Are useful, useable and simple;
- Are meaningful and desirable;
- Require little or no learning;
- Assume no base-level of understanding;
- Have no-need for an instruction manual.

To achieve this for inexperienced users of technology, there is an even greater need to understand and draw from their past experiences and knowledge (i.e. their mental model). This understanding then needs to be fully embedded within the design of the technology; specifically, the interactive features used to navigate the technology. Making such features accessible, and forgiving of error, provides the basis for us to create an inclusive and empowered technologically active society. Although these user needs have been known for many years, the technology companies have yet to address them appropriately. [Such change would be transformational in its benefits not only for the individuals personally affected but to the wider economy and society].



4. LIGHT-TOUCH ADMINISTRATION

A 'light-touch' approach to the administration associated with the learning and support of digital participation/engagement liberates users from unnecessary constraints, pressures and demands (some of which are cited as common barriers of 'stress and fear').

Key to a 'light-touch' approach are:

- Minimising paperwork and formal procedures;
- Flexible participation (e.g. no need for users to book appointments or commit to a fixed number of sessions);
- Limiting performance monitoring to those parameters of interest to the user e.g. progress towards his/her goals (assessments and evaluations are often demoralising and off-putting for many learners).

The above approach helps to create a relaxed atmosphere for all involved. This is crucial to creating an environment conducive to effective learning. It is also significant for boosting morale and cooperation in small local schemes, (which are usually staffed by volunteers, and therefore not well placed to cope with heavy demands on helpers and learners). A 'light-touch' approach enables digital engagement learning support sessions to be enjoyable and rewarding experiences – freeing all participants (including volunteers) to focus their time, energy and efforts on engaging in the digital world.

5. SUPPORTIVE FACILITATION OF LEARNING IN THE HOME/ COMMUNITY

What has been shown to work where other 'interventions' and approaches fail is compassionate, empathetic and non-judgemental one-to-one support from a trusted person. For the fortunate minority of people, this will be a role filled by a of the family or by a close friend. For many others in the community, the role of human intermediary will be taken by a volunteer who is part of a range of schemes set up to achieve digital engagement and funded by Government or charitable donations.

When recruited and assigned by providers, they are often given the title 'digital champion', but the title can be a disengaging factor for many people. (It is noticeable that where users themselves make the choice, they choose to their helpers by such titles as 'IT buddies', 'Skype Mates', community digital volunteers', 'digital companions' and 'IT tutors').

Readily available and continued availability of empathetic help and learning support in the context of community-based support is vital both for achieving and sustaining digital participation. Giving those who are digitally-excluded the opportunity to learn in sociable, enjoyable and rewarding activities which meet their own goals and objectives is one of the keys to success.

6. BUILDING CONFIDENCE

Building confidence is an essential pre-requisite to the proactive engagement of most, if not all, digitally-disadvantaged people. At the core of the building confidence process is first the need to allay the daunting array of perceived and actual threats, worries and fears frequently associated with attempts at digital engagement (see the sources and causes listed under 'Stress & Fear' in the list of Common Barriers).

Alleviating fears in most learning situations, and particularly in the challenging context of digital technologies is a pre- condition for effective learning. Particular care is needed regarding performance assessments and outcome evaluations in individual circumstances where these can only identify the absence of digital (and other) skills. It is highly likely that such demoralising experiences erode further (from an already low baseline) the self-respect and pride of users.

To build user confidence significantly will therefore require focus and effort beyond alleviating fear to carefully nurture positive user experiences and achievements. This is achieved through the tailored introduction of digital technologies which are relevant to individual interests and goals.

CONCLUSIONS

While there are many significant barriers to digital participation, there is also significant 'know-how' available to address the issues successfully. Rich detailed knowledge based upon extensive research and practice exists to inform changes which can achieve the digital participation not only of older people but of many other digitally-disadvantaged people in society. Applying this knowledge to policies and strategies relating to all areas of life can transform the lives of many people for the better – achieving the vision of digital inclusion anticipated at the World Summit on the Information Society, Geneva 2003. (Damodaran, L. Gilbertson, T. Olphert, W. Sandhu, J., 2015).

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