Digital Buddies, Learners and Living Smart Homes: Evaluation report

Broome|Gekoski

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About

This evaluation report was produce by Steve Broome, Director of Broome|Gekoski, and Visiting Professor and Co-Director of the Centre for Citizenship and Community at the University of Central Lancashire (UCLan). The work was funded by the Department for Digital, Culture, Media and Sport's Digital Inclusion Fund (managed by Citizens Online) as part of the grant allocated to the Council for Voluntary Services Uttlesford the Digital Learners and Living Smart Homes Project. The author can be contacted by email at steve@broomegekoski.co.uk.

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1. Introduction

Overview of the project

In 2018 ReThink Partners, the Council for Voluntary Services Uttlesford (CVSU), Voluntary Action Epping Forest (VAEF), and Rainbow Services Harlow came together to submit a bid to the Department for Digital, Culture, Media and Sport's (DCMS) Digital Inclusion Fund (managed by Citizens Online) to run a one year Digital Learner and Living Smart Home pilot. The consortium also partnered with Alcove Ltd and Acticheck Ltd to supply and install digital technology in Living Smart Homes and wearable digital technology respectively.

The pilot was branded as a 'Digital Boomers'[1] initiative as the rationale for the bid built on insight work undertaken for the wider Essex Digital Boomers programme and the Digital Boomers theory of change which was developed as a result.[2] The insight work revealed a strong desire among older people to use their existing technology in more socially productive ways, and to develop their knowledge, skills and confidence in using new digital technologies in ways that could increase their social connectivity and independence. The insight work also pointed to a large unmet need among local older people to harness the benefits of digital technology.

The bid documentation set out the project's aims as supporting older people and people with disabilities in West Essex communities to understand, develop skills, and make greater use of digital technologies. It aimed to deliver this through two key strands. Firstly, the project sought to develop and test 'living smart home labs' by recruiting and training local people. These smart home 'hosts' received a digital assessment and subsequent 'kitting out' of their own homes with digital technologies, and were supported to use, talk about and demonstrate the impact of their new technology to local professionals and citizens who could visit the homes and see the technology and speak to the hosts in situ.

Secondly, volunteer Digital Buddies were recruited from the local population to support Digital Learners within the target group in building digital technology skills and confidence. Digital learning sessions were carried out on a one-to-one basis or in groups in local places such as libraries, community centres, cafes and other local venues. The project trained Digital Buddies in engaging learners through the Learn My Way approach developed by The Good Things Foundation.[3]

The project patch was organised into three districts, with a dedicated project worker in each of Uttlesford, Epping and Harlow providing project management, coordination and support for both strands of the project in their respective geography.

Based on the bid documentation, the project sought to achieve the following outcomes for older people and people with disabilities in West Essex:

- proficiency at using digital technology as part of daily living, particularly in ways that supports independent living and the reduction of service demand;

- confidence in 'having a go' at new technology and exploring the functionality of technology they already have;

[1] See https://digitalboomers.org.uk
[2] Morris, C., and Carson, I. (2018) *A theory of change for older people, technology & independent living*. [Available at: http://rethinkpartners.co.uk/wp-content/uploads/2019/09/digital-boomers-full-report-final-1.pdf]
[3] See https://www.goodthingsfoundation.org/learn-my-way

- people know when, where and how to ask for help;
- people are savvy – but not fearful – of online risks; and
- people are familiar with the options and possibilities technology offers them.

Method

The evaluation adopted a mixed method approach, comprised of the following elements:

- a reflective workshop with the project delivery team, considering the project's own theory of change, and the critical success factors and challenges in the project;
- review of key project documentation and monitoring reports;
- a survey of Digital Learners to understand the range and impact of their experience of digital learning sessions;
- case studies of Digital Learners and Digital Buddies to understand participants' experience in depth;
- analysis of survey data collected by the project team on the experiences of professionals and local residents who visited Living Smart Homes;
- case studies of Living Smart Home hosts to understand their experience in depth;
- a case study analysing monitoring data captured by digital technology placed in a Living Smart Home; and
- stakeholder interviews with people delivering, managing, commissioning and participating in the project in different ways to understand the processes, successes, lessons and challenges involved in the project.

This paper

This paper begins with summary analysis of administrative data and project reports, before providing analysis of the Living Smart Home visitor survey and presenting case studies of Living Smart Homes across the project area, including a case study of monitoring data automatically recorded by digital technology in a Living Smart Home.

It then gives an analysis of a survey of Digital Learners, and follows with case studies of Digital Learners and Digital Buddies from each area of the project.

The report ends with a discussion of the main findings, summarising the benefits delivered by the project, reflecting on the project's theory of change, and drawing out key learning points to consider as part of determining the future of digital learning and Living Smart Homes. This final section incorporates discussion from the project team's reflective workshop and feedback from key stakeholders interviewed as part of the evaluation.

2. Monitoring data

This section summarises the monitoring data collected by the project to the end of the 2019 calendar year, and key aspects of monitoring reports provided to Citizens Online, the organisation managing the fund on behalf of the DCMS.

Key performance indicators

The project was set five key performance indicators (KPIs) as part of its funding agreement, shown in the table below. These cover the number of Living Smart Homes established; the number of visitors to Living Smart Homes (or 'learner sessions' in Living Smart Homes); the numbers of Digital Buddies and Learners participating in the project; and the number of digital learning sessions delivered.

The project achieved or exceeded all its targets, and in particular delivered twice as many Living Smart Homes as expected, and three times the number of target digital learning sessions.

KPI	Target	Actual	% achieved
Operational Living Smart Homes	4	8	200
Learner sessions in Living Smart Homes	60	60	100
Digital Buddies recruited	60	64	107
Digital Learners engaged	1080	1094	101
Digital Learner workshop sessions	108	325	301

Communicating the project

The monthly monitoring reports show a wide range of activities were undertaken to raise awareness and promote the project to local organisations, services, groups and residents. This included:

- flyers distributed to a wide range of local shops, cafes, community facilities, and services;
- online promotion through a range of websites and social media (Facebook and Twitter);
- videos posted on YouTube and Vimeo explaining some of the digital technologies involved in Living Smart Homes, and illustrating how hosts experience the technology in their homes;
- meetings with a range of people and organisations, including district councils, social care managers, Primary Care Network, Action for Family Carers, health and wellbeing groups, housing associations, relevant local projects, a local library, and local charities/groups; and
- events to explain and demonstrate digital technology, including the Digital Innovation Zone Forum, Essex Assembly, and GP service providers AGM, and 'Safe and Social' and pop-up events in local business and community premises.

Despite the wide range of promotional activities aimed at different audiences, the project initially struggled to gain traction in some areas. In some respects, this is to be expected as any new project takes time to get up to speed and build local networks and awareness. However, by definition, the project sought to work with people who are some distance from using technology, and with services who do not have digital technology integrated into support they provide. The project therefore broke and prepared new ground, particularly over the first half of the initiative, before fully capitalising on this work in the last six months. For example, 40% of the learner sessions in Living Smart Homes came in the last quarter of the project, and almost 70% of the learners engaged occurred in the last three months of the monitoring period. This curve of the project was recognised by CVSU and Citizens Online part way through the scheme and additional resources were dedicated to enhancing the marketing and communication of the project.

Delivery challenges

In preparing the funding submission, and in reflecting on the project through monthly reports, the project team identified a number of challenges to successfully delivering the project. The team recognised that safeguarding participants and attending to cyber security were important foundations for the project. Volunteer Digital Buddies were recruited through a bespoke 'safe recruiting process' to ensure those signing up were fit for the role, and induction training included building awareness and capacity to respond to safeguarding issues.

The project also recognised the challenge of recruiting a sufficient number of high calibre volunteers to provide a big enough platform and reach into different parts of west Essex. The project team worked through their well-established local networks to mitigate this risk, and built awareness and commitment to the project ahead of time through their prior Digital Boomers involvement. This was particularly important in getting Living Smart Homes up and running as quickly as possible in the project: three homes were established by the end of April 2019, and the target of four was met in the second quarter, allowing the project team time to generate interest and learning through these local assets over the remainder of the project period.

On the demand side, the project recognised that there may be fluctuating participation in the project, for example in terms of variable number of local people attending digital learning sessions, and tasked district project workers with coordinating sessions with local interest and availability. On the Living Smart Home strand, the team recognised that some participants, for example those with disabilities, may require technology to be adapted for use, and provision for this was made in the project budget. The project paid further attention to inclusion by making a provision for caring support for carers who wished to participate in the initiative but would not be able to do so without support with their caring responsibilities.

3. Living Smart Homes

Living Smart Home visitor survey

In order to showcase the benefits and potential of Living Smart Homes (LSH), local older people and people with disabilities, and professionals who work with them, were encouraged and invited to visit LSH demonstrator homes. This would allow them to see various digital technology in situ and to speak with LSH hosts and hear about their experience of the scheme and of using the technology.

Participants

Surveys were completed with 37(62%) of the 60 visitors to Living Smart Homes, two thirds (24) of which were local professionals working in the health, social care, and community development sector, while the remaining third (13) were local older people and/or their family members. Survey findings are based on visits to LSHs between June and October 2019. Almost half of these visitors (18) went to a LSH in Uttlesford, and a third (12) went to one in Harlow, meaning that over 80% of the survey results reflect experience of visiting these two homes. One professional visited three different homes across the project area.

Experience – local people

The majority of local people attending LSHs typically found their visits to be 'interesting', 'useful', and 'informative'. Three people in particular reported positive experiences:

> *"Impressive – a lot of practical applications brought together in a user-friendly form."*
>
> *"The amount of items that can significantly improve my mother's access to her home is amazing."*
>
> *"Very reassuring for people if they need to be independent in their own home."*

Two local people were less convinced by what they saw, describing the benefits of the digital technologies in a qualified way as "very basic" and "fine for some users". This perhaps reflects the target population of the project as being people who were largely unfamiliar with digital technology and the aim to familiarise them easily accessible and usable solutions. The survey did not explore what these two people expected or wanted from a Living Smart Home.

Four local people reported that they could see themselves using the digital technologies they had seen on their visit, with the remaining nine saying that they would "maybe" use them. Four people said they would like more information about what they had seen, three of which were 'maybes' in using the tech themselves.

Experience – professionals

Feedback from professionals on their LSH visits was uniformly positive. Many professionals described their demonstrator home experience as "very informative".

> *"I thought the visit was very informative and a great eye opener as to how technology can assist those who require extra support. It was interesting to hear from [the LSH host] how [they are] benefitting from the smart technology."*
>
> *"Innovative and invaluable in view of promoting patients safety and confidence in their own home. Also increasing independence of course."*

> *"Very informative and simply explained so all of us could understand the technology."*

All but one of the 24 visiting professionals said they were likely to recommend what they had seen to their own clients, with the remaining professional saying they would perhaps recommend what they had seen.

When asked for any final comments on their experience of the LSHs, two professional visitors raised important points. Firstly, one reflected on the process through which the digital technology is identified, installed and used in people's homes, and highlighted the importance of a personalised approach that requires professionals to have good inter-personal skills and time to work with and understand individuals.

> *"I think the real added value that the project is providing is the personalised service which is able to spend the time with the client listening to their requirements, finding bespoke solutions but more importantly the time supporting and training the client with the tech and responding to any issues as they arise. I wonder if clients would have such a positive experience if the tech was supplied without the time from such caring people who spend time reassuring and fixing issues. I am sure that lessons are being learnt from the project that will help ensure that some tech can be installed effectively and help clients see real results quickly. The trouble is that most services have limited time with clients."*

Secondly, the issue of upfront and ongoing costs of some of the digital technologies used in LSHs was raised by another professional.

> *"It's obvious that the devices have been a big improvement with regard to safety and quality of life as well as peace of mind for relatives. I think that a lot of patients may also benefit from some of the devices but I wonder if cost could be an issue in some cases.*

Living Smart Home case studies

Case studies of seven Living Smart Homes established by the project are given below. Names of Living Smart Home hosts have been changed throughout the case studies.

Sarah

'Sarah' is in her nineties and lives by herself. Sarah has had two strokes, which have affected her memory, and has had some heart problems that have affected her balance. Sarah describes herself as strongly independent and as someone who does not like asking for help. While Sarah has a cleaner, she has refused some help from the local authority, fearing this will be a "slippery slope" to becoming more dependent and to losing the ability and motivation to live independently in her own home. Sarah has also felt "mothered and smothered" by some help offered through the local community, although she acknowledges their points and concern for her safety.

The interview was undertaken with two of Sarah's children present, who also contributed their perspectives about the LSH initiative. Sarah's children live a considerable distance away from her, meaning visiting or dropping in on Sarah regularly and/or at short notice is difficult.

Sarah was referred to the scheme via a local community organisation who thought Sarah would both benefit from the scheme and appreciate being involved in an innovative project. Sarah was then

visited by the project team and Alcove, who supply some of the technologies deployed in the project. Sarah indicated her wariness at some of the available technologies to help and support her in her home: Sarah was reluctant to have a key safe as this may indicate "vulnerability" to anyone seeing it outside, and was not keen on having smart bulbs as this would act as a disincentive to getting up and encourage her to be more sedentary.

Sarah was equipped with an Alcove care tablet which allows her to call her daughters at the touch of a button and to use the concierge service to order her food shopping. She also has motion sensors in all the rooms.

Both Sarah and Sarah's children have noticed that Sarah finds it very easy to call her children via the care tablet, and as a result calls more frequently and spontaneously if she wants to chat or is worried about something. The technology has increased the contact between Sarah and her children, which is particularly important given the geographical distance between them.

> *"It is absolutely wonderful that I don't have to leave my sofa to speak to my family and I don't have to worry about dialling the wrong number, I just need to press a button and it will call them."*

Sarah describes her ability to order food remotely via the tablet as "a big help, as I can't walk so well now", particularly when the weather is bad, and appreciates the "lovely people" who facilitate her order through the concierge service. The service knows her preferences for what types of food Sarah needs and likes, and what supermarket she prefers, meaning that Sarah can retain her choice and control in what food she has. Sarah's children also appreciate the service – they can become concerned that Sarah does not have enough food in the house, and this service provides an accessible and quick way of addressing this problem.

On the flipside, Sarah reflected that ordering her shopping remotely removes the need to go to the shops in person, and consequently the enjoyable experience of shopping and interacting with people that brings. Sarah's children pointed out that Sarah can sometimes struggle to recall what food she needs and intends to order, meaning that smaller and more frequent orders can be placed, making the service more expensive (the concierge service charges £4 for administering a shopping order).

Sarah's children also find the presence of sensors around Sarah's home reassuring. They know that if there is no movement in the house (for example in the corridor outside Sarah's bedroom by the time Sarah usually is up and about), then they can be alerted and check in that all is well and take action if not. Sarah finds the presence of the sensors to be "unobtrusive" as "they just blend in" and only detect motion (they do not record/stream video), which is important to Sarah's sense that she is not being observed.

This reflects some tensions between the desire of the wider family to maximise safety and reassurance, and Sarah's privacy. Sarah's children would like a video camera (or cameras) installed in Sarah's home so they can check in on Sarah at any time, while Sarah is strongly against this proposal as she sees it as an invasion of her privacy. Similarly, Sarah is reluctant to use online banking as she does not want "people involved in her bank account". Sarah prefers to have friends take out cash for her and for the Alcove care tablet account (which covers the costs of the shopping service) to be topped up with the help of her children.

Sarah enjoys the presence of her Alexa in her home, and finds it "reassuring – it's like company." She also finds it fun as she can ask it to play her classical music and tell her jokes.

Sarah highlighted the important role the project worker had played in helping her to identify ways in which digital technology could support her and how to use it. Sarah also appreciated the "lovely" regular visits from the project worker – part of the benefit to Sarah in participating in this project has been the regular face to face connection that taking part has brought.

As the interview provided the opportunity to reflect on how things were going with the digital technology, new ideas and questions emerged. For example, Sarah's children wondered if there was a newspaper/magazine audio reader that could provide Sarah with lighter, shorter content than books, and wondered how they could access monitoring data collected by Alcove technologies to help them better understand Sarah's needs and use of her kit.

In reflecting on her role as a LSH host, Sarah has enjoyed and valued the opportunity to help demonstrate the digital technologies she has in her home. Sarah has a long history of active citizenship and volunteering in her community and saw the scheme in part as a way of continuing to be active in this way. However, Sarah also reflected that in participating in promotion and publicity materials for the project, she felt vulnerable and somewhat fearful in thinking that local people knew of her involvement in the scheme and might perceive the house to be full of valuable technology.

Looking ahead, Sarah acknowledged that her attitude to digital technology is changing. While she has "never been afraid" of the devices, she is beginning to feel more positively towards things like smart bulbs.

> *"I'm conscious of ageing, of not having ten good years to look forward to. I don't want to go into a home so I'm becoming more open to how technology can support me."*

In recognising this, Sarah believes that the LSH project would be "marvellous" for other people in her position and can become "the reason I can stay independent."

Mavis and Bernard

Mavis and Bernard were introduced to the LSH scheme through their participation at a community coffee morning aimed at reducing loneliness. Through this connection they heard about another local LSH and stepped forward to host their own LSH. Bernard has had knee replacements and would find it difficult to get up if he fell, while Mavis has multiple sclerosis (MS) and also fears falling and can have limited dexterity.

Mavis and Bernard were assessed for a LSH in the summer of 2019 and described the conversation with Alcove and the project worker, and looking through the Alcove brochure, as "mind-blowing, exciting, and fun". The couple have a Ring doorbell, sensors on external doors, a fridge sensor, trigger help buttons in multiple locations, smart bulbs and plugs, and several Alexas. Bernard also has what he describes as a 'safe motion' watch through which he can raise the alarm if he requires help. They were also appreciative of the support they had been given in setting up and becoming familiar with their new technology, and felt assured in using it in the knowledge that they can call on the project worker if there is a problem.

Mavis and Bernard described a range of impacts the technology had brought. The Ring doorbell provides them with a sense of security: they have experienced 'intruders' in the area and knowing that the doorbell will video record motion and allow them to see who is at the door before opening

it helps them to feel safer. Similarly, their external door sensors, and lights that can be turned on and off on a timer if they are away, also provide a feeling of security. Use of their Ring doorbell has required an upgrade to their broadband connection as the video requires a higher connection speed. This has added an extra small monthly cost to the household.

Their fridge sensor means that they will not leave the fridge open unintentionally and risk losing the contents of their fridge – something that has happened several times in the past. Both Mavis and Bernard feel reassured by the trigger help buttons around the house: for example, Mavis feels reassured that if she were to fall in the bathroom she can send an alert that will go through to Bernard's phone. Bernard feels very reassured by his watch, which increases his independence: with the watch, he feels able to go to the allotment by himself, something he would not do otherwise. Bernard explains that because the watch is on his wrist, he will not forget it and it is easy to access in an emergency, whereas a phone can be easily forgotten or difficult to access and use after a fall.

The Alexas mean that smart bulbs and things like their electric blanket can be turned on and off remotely (although Mavis wonders if this functionality can "make you lazy" and reduce physical activity that would have been undertaken otherwise). Both Mavis and Bernard enjoy interacting with the Alexas: Mavis accesses recipes, music, and radio and appreciates the sense of security the 'company' of the Alexa provides, as well as finding it fun. Bernard enjoys putting questions to 'the lady', and both their smart lights have nicknames, indicating the sense that the technology feels like an additional presence and personality in the house.

Bernard describes himself as having gone "from zero to six out of ten in confidence in using the technology", and while Mavis was slightly more comfortable at the outset, she has also experienced an increase in confidence. This confidence has grown partly as a result of the couple's interaction with the other strand of the project – the Digital Buddies scheme. Mavis and Bernard have been regularly supported by a Digital Buddy, which has helped them to get more out of their kit.

Both Mavis and Bernard think the LSH project has helped them to be and feel more independent in their home and wider lives. They reflected that if the technology had to be self-funded (as will be the case after 12 months), they would retain Bernard's watch and the Ring doorbell as these provide the greatest sense of security. They think it is "debatable" whether they would keep the remaining technology, describing it as more for convenience than necessity at the moment.

Rebecca

Rebecca is in her 80s and lives alone in what has been her long-time family home. Rebecca's children live nearby and are a regular and supportive part of her life. Rebecca has some regular help around the house but prefers to do things for herself as much as she can, and other than age-related symptoms, she is mobile and healthy.

Rebecca was equipped with an Acticheck wristband, which provides "peace of mind". Rebecca knows that she can alert her nearest child if she had to without having to be close to a phone. Rebecca also appreciates the daily safety checks: she is called at 9am and responds with a simple press of a button if all is well. If Rebecca fails to respond, the call is repeated in 15 minutes and if there is no response again, the base alarm is sounded and her children are alerted. Rebecca has had cause to use her Acticheck wristband when she experienced palpitations last summer (having had heart problems previously). The alert prompted her children to immediately call and come round, and this 'real life' test has increased the whole family's trust in the system and the feeling of

reassurance that brings. In reflecting on this incident, Rebecca says that she was very grateful for the wristband as in this high-stress moment she doubts whether she would have had the cognitive and physical capacity to find her phone, unlock it, find and dial the number, and ask for help – the press of a single button on her wrist was a much more appropriate mechanism. Rebecca likes the modern design of the watch (it doesn't seem like something associated with assisted living), and "forgets" she's wearing it, particularly as it is waterproof and so does not require removal when showering, for example – it has become "a normal part of life".

Rebecca has also had a key safe fitted: as her home is "somewhat secluded" and behind gates, the key safe allows access to trusted parties if required. Rebecca also has a Ring doorbell, which allows her to see who is calling and so decide whether to make the effort to let them in, and also to feel safer in her home.

Despite not wanting one initially, Rebecca also has an Alexa, which she uses to listen to music and hear the news, and to programme reminders. Rebecca described her evening ritual of saying "goodnight, Alexa" as an example of the technology feeling "like a person, it's company".

Rebecca's positive experience of the technology has also been a catalyst for exploring other technologies: she has a "project" to use email on her phone, and has been introduced to Whatsapp by one of her children (who is also a Digital Buddy for the project), first joining a family group and then using the app more widely. Rebecca can still feel somewhat afraid of the technology but feels supported through her family and the project: "I'm fearful of breaking it [the technology] or messing it up, but I know [one of her children] is there as a back-up. It can be hard to remember how to do something so I write down the steps involved."

As well as feeling safer in her home, and less vulnerable in living with a worry about her future health, Rebecca describes several other impacts of participating in the project. Using the technology has helped Rebecca to "feel more modern, younger, in time with contemporary life and not left behind". She is also in touch with her family more, and more easily, and feels "they're closer because they're more accessible".

Similarly, one of Rebecca's children also described positive impacts: knowing Rebecca has the technology, and can use it, is a "huge relief", particularly as recent family events had "sharpened worries about Mum" and the project had played a part in reassuring and settling the whole family.

Rebecca would definitely recommend the project and the digital technologies to friends and peers, and has already done so. The technology in her home can be a "talking point" with friends and Rebecca has "shown friends how to use it", assuming the role of a digital buddy herself in doing so. Rebecca does not think the ongoing costs of keeping the technology running after the end of the project is a barrier to her continuing to use them.

Sue

Sue lives by herself and has multiple health issues: she is visually impaired and has undergone chemotherapy. Sue uses oxygen at night and has mobility issues due to arthritis, and also suffers from depression and agoraphobia.

Sue came into the project through meeting a trustee of a local organisation. Through Sue's initial meeting with the project team and Alcove (the technology provider), and through meeting other Living Smart Home hosts, Sue was provided with a range of technologies: A Ring doorbell, smart light

bulbs, two Alexas, smart plugs (attached to her fan and oxygen), sensors on her fridge door, a magnifying lamp, and a smartmotion watch.

Sue describes a range of benefits of having the technology in her home. Her watch, which can alert her carer and child, allows her to "feel more confident in going out and being independent". The doorbell and smart lights help Sue to feel safer in her home, while the Alexas "feel like a companion", providing "conversation, jokes, music", as well as reminders for appointments and help in timing things when Sue is cooking.

Sue initially felt that the prospect of engaging with new technology and of becoming a Living Smart Home host was "daunting" – the new equipment was "scary" and Sue's social phobia meant that she was anxious about having new people in her home and having to talk to them about her experience. However, both of these anxieties have since turned into positives: Sue's experience of hosting visits has improved her social confidence and helped her to access additional support and information through the professionals that have come round. Sue has also appreciated the opportunity to become comfortable and familiarise herself with technology before her eyesight deteriorates further. Sue thinks the positive experience of learning about digital technology is something she can draw on in the future when she needs to overcome new challenges: it has helped her to develop a positive, hopeful curiosity and a problem-solving mindset and openness. Before engaging in the project, Sue was on a waiting list for sheltered housing, but now feels safer and more confident in her own home and more capable of sustaining independent living with the help of technology.

These changes have also led to Sue's family feeling less anxious and concerned about Sue, and have resulted in Sue feeling less lonely: she is in easier contact with her family through the technology, and feels more connected as a result of being a host and feeling more confident to go out in the local area.

Sue's carer, Lisa, has also noticed positive benefits stemming from the project. Lisa describes Sue as "brighter and uplifted" as a result of feeling supported and distracted by the technology (taking her away from feelings of depression and loneliness). Lisa has noticed that Sue is more likely to put the radio or music on because she does so through the Alexa – this seems more like an activity done with a companion (the Alexa), rather than turning the radio on independently, which somewhat paradoxically can serve to draw attention to a feeling of loneliness. Lisa also feels that her job is "emotionally easier" – she does not feel like she is "leaving Sue alone" at the end of her visit. Lisa also monitors the Alcove dashboard remotely to make sure Sue is okay and thinks that the technology adds value to her role. However, Lisa thinks that other carers may be cautious and apprehensive about the role of technology in their work and feel reluctant to engage with it.

Sue has had a very "rewarding" experience of the scheme, viewing it as "a way to help other people" by being a host, as well as finding out about and being supported by digital technology. Sue is also sharing her knowledge and experience with people in her own social network: for example, she has helped her wider family to think about the role technology could play in adding value to their lives.

Sue describes the role of the project worker as pivotal in her positive experience of the scheme. The worker has been "lovely, so efficient, always does what's agreed and I feel relaxed and reassured by [the project worker] – it feels like we're a team".

Sue describes the prospect of meeting the costs of the technology herself once the project ends as a potential barrier to keeping the kit in her home. Monthly costs for her watch and fridge sensors, for example, would be challenging to meet on her income through benefits payments.

Belinda and Dave

Belinda and Dave live in sheltered housing and were referred into the project by a local council housing officer. This case study was undertaken with Belinda (Dave was not present), their daughter Liz, and the project worker who supported the couple. Their home was fitted with smart plugs, smart lamps, Alexas in the front room and bedroom, and an Alcove tablet. The process of establishing what technologies would be helpful was described as a "collective decision" between the couple, Alcove (the technology provider), and the project worker.

Belinda described the main benefits of the technologies as "making life easier": Dave, for example, appreciates being able to adjust the brightness of lights to create a more comfortable environment. However, much of the kit was not being utilised to its potential for a number of reasons. Belinda had not used the care tablet: it was not in easy reach, was difficult to use due to Belinda's painful fingers, and she was unsure how it worked or who it could call. Belinda was also worried about the costs of using the device and did not realise costs would be covered by the project. Belinda reflected that "there weren't any instructions" left with the couple that "would have helped" in trying to use the kit.

Belinda also reported a number of needs that were explored in the assessment, but that were not able to be met through the project. The home has large windows covered by blinds, which Belinda finds difficult to operate, but unfortunately a remote control solution to opening and closing the blinds could not be found. Belinda often felt uncomfortable turning the lights on without the blinds drawn, which limited the help provided by the smart lights technology. In addition, Belinda cannot get in or out of her home without someone holding the large, heavy front door to the property open. Again, a solution was sought to remote control the opening and closing of the door but this was prohibitively expensive for the project (costing several thousand pounds), and also raised challenges to do with the physical design of the property. On the social side, Belinda would like to find a way to get more social interaction (by going shopping, for example), rather than having social contact remotely through technology.

While Liz could see the potential of the technology to support her parents more effectively, she reflected that the kit was currently being under-utilised and that they were unsure about how to use some of it. All parties thought that a review of the current set up was needed, and that the housing warden should be involved, as well as local Digital Learners/Buddies (digital learning sessions run by the project were put on in the day centre next to the sheltered housing accommodation, but these strands had not been joined up as yet in this case).

Fay and Sam

Fay and Sam have lived in their home for some 35 years. Sam suffers from severe arthritis and has significant mobility issues as a consequence. He also has diabetes. Fay is Sam's main carer and feels worried about going out and leaving Sam at home in case he has a fall.

Sam came into the initiative through his attendance at a local Men's Shed project. He and Fay then met with the local project worker and Alcove (technology provider) to reflect on how they used each room in the house and how digital technology could provide "help and reassurance". Sam described his initial knowledge of and comfort with technology as "abysmal", made worse by the difficulty in using some technology due to his arthritis and eyesight problems, while Fay felt "OK with technology" at the outset of the project.

The couple have an array of digital technologies provided through the project: A Ring doorbell, Alexas upstairs and downstairs, smart bulbs, a care tablet, and emergency call buttons and motion and temperature sensors around the house. At one point, Sam also had an Acticheck wristband, but this prevented Sam from getting his wrists through the cuff on his crutches, so this was discontinued.

Fay and Sam describe the Ring doorbell as being "the most useful". Sam cannot get to the front door quickly and the technology allows him to see who is at the door and engage them remotely. They also both feel the doorbell provides them with a sense of safety in their home. Sam also describes the smart lights as being "very helpful" as they mean he can control the lighting without having to get up or remove his hands from his crutches if he is on his feet. For Fay, the 'Push Me' call buttons are the most important piece of technology as they provide her with reassurance that Sam is safe in the house if she is out. These buttons are placed throughout the house in areas that present a risk of falling, including the bathroom and bedroom. Three of the four buttons throughout the house are at ground level, meaning they can be pressed without having to get up following a fall.

Sam points to several teething problems in using the digital technology. He describes himself as "not too confident" in using the Alexa show screen and has a 'prompt sheet' but thinks this needs updating. While Sam's phone is connected to the Alexa, he is not sure how some of his contacts are listed (e.g. by first name or surname), which means it can be difficult to find them through the Alexa. Sam also found the care tablet screen "quite sensitive" and "tricky" to use as a result. Sam reflected that the 'Push Me' button in the bedroom might be "hard to reach" and activate after a fall as it was not located near the ground (meaning he would have to lift himself up to reach it). The couple also wondered whether they would be able to use any of the technology in the result of a power cut, as this is something they had recently experienced – did any of the technologies work independently through their own batteries/ability to send signals without relying on mains power?

Despite the teething problems the couple have a positive view of the project and Sam wishes to learn more about the technology he has and build his confidence in using it, and in particular learn how to do more through the Alexa as he enjoys asking it general knowledge questions and getting the latest news through it. No links were made to the Digital Buddy side of the project, although the project worker had given advice and support to the couple throughout the initiative.

Both Fay and Sam would "definitely recommend" the project and their digital technologies to both other carers and other people cared for (particularly those who live alone). In reflecting on their experience, and the practical and psychological impact of the technology they have, the couple think that they would keep all of the technology going after 12 months (when the project ceases to cover the costs of the technology), apart from the sensors.

Wendy and Robert

The couple have lived in their neighbourhood for some 20 years, which they describe as a "very friendly area", and have had a range of connections to local groups and organisations that have become hard to sustain as their health has deteriorated. Wendy has a range of health problems and associated mobility issues, while Robert is registered blind and has recently had a number of health problems.

Wendy and Robert were introduced to the Living Smart Homes scheme through the local project worker (also their friend and neighbour). Both described themselves as "knowing nothing" about

digital technologies at the outset of their involvement, and Wendy initially felt somewhat "dubious" about what the project might be able to do for them. They were "not familiar and not confident with tech before the project – we didn't grow up with technology so everything in the project was new". On the flipside, they describe themselves as people who "like finding out about things" and who have a "positive, can-do attitude", which alongside a trusted, supportive relationship with the project worker, has helped them assimilate the new technology.

Their home was fitted with a Ring doorbell, smart bulbs, two Alexas, two emergency 'Push Me' buttons, and a care tablet. Wendy mainly sleeps downstairs and being able to control lights remotely and call Robert upstairs via the care tablet if she needs him during the night is a "big help". The care tablet is also used to call family and the project worker. While the care tablet has the concierge service included, this has not been used so far. Robert says "I like to know what I'm buying and go to the shops myself – it keeps me alert, mobile, and fit and I get to meet other people".

The couple enjoy interacting with their Alexas, asking it questions, playing music and the radio. It is "fun, entertaining and informative". Alexa is "company for people who are lonely or who are finding it difficult to connect to the outside world."

Wendy and Robert both think the project has improved their quality of life. The technology has "made things easier that could have been problems, it's made them a part of our routine, like using the lights". Robert reflects that as he often has to attend hospital appointments, Wendy is alone in the house and the technology helps "supports Wendy to cope" and gives them both reassurance while he is away.

Overall, Wendy and Robert now think the technology is "fantastic" and feel "very grateful" for their involvement in the project. They would both "100% recommend the project to other people, especially disabled people. It's been an unexpected bonus – it offers a lot that we can't do in other ways. It's a lifeline, especially for people who live alone". The couple have also enjoyed the experience of being a host and talking to people about the technology, which itself increases their confidence in using it.

Looking ahead, being able to keep the technology that has ongoing running costs would be an issue for them, and the costs would have to be a key consideration in making decisions about how and whether digital technology can support them in the way it is currently doing.

Living Smart Home monitoring data

Consent was gained from one Living Smart Home host to access the monitoring data automatically captured by Alcove, the care technology company that provided the equipment for the Home in question.[4] Data for the evaluation was collected from the online monitoring dashboard from each piece of technology present in the Home over a nine month period from June 2019 to the end of February 2020.

The charts below show the data over this period. It includes a period in December 2019 and January 2020 (a total of 42 days) when no data was collected on any of the technology as the host was away from their property.

[4] See https://www.youralcove.com

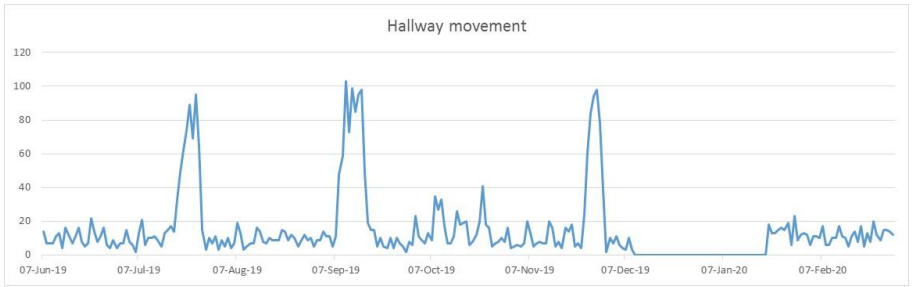
The charts show that the lounge is the place where the host is most active, with an average of 96 movements per day, indicating that this room is the centre of their home life. Such information, for example, could act as a guide as to integrating care and support mechanisms into the home, by knowing where an individual feels most comfortable and when they spend time in particular parts of the house.

Data on the front door shows that on average, the door was opened three times each day, with a maximum of 19 uses on a single day during the nine month period. Discounting the days in which the host was not at home for the extended period of time, the front door was not used on 13% of days in the period, equal to around one day a week, which gives an indication of the volume and regularity of visits and departures from the home. Spikes in the data beyond typical daily activity also provide an indication of the frequency of non-typical days for the host, for example, if family members came to stay.

Alcove monitoring data was also collected on reminders programmed for the host. This data showed that no reminders were missed over the nine month period.

The monitoring data is available to the host and to family members (with the host's consent). Family members report having access to monitoring data on each piece of equipment as reassuring: knowing that their parent is staying active in their house and regularly using the kitchen, bathroom and shower room means they know that their parent is looking after themselves on a day to day basis.

In examining the data by itself (not in the context of what is going on in the person's life), there is no indication that the host's behaviour has changed over the nine months covered by the project (although there is no baseline to describe use of the home before the technology was fitted). This could imply that the technology has been well-integrated into the host's life, and that this person has not changed their behaviour as a result of digital monitoring of their actions around the house.


Hallway movement
120
100
80
60
40
20
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07-Jun-19
07-Jul-19
07-Aug-19
07-Sep-19
07-Oct-19
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07-Dec-19
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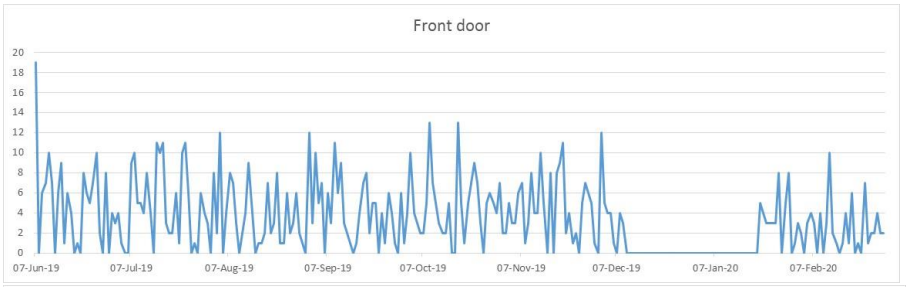
Front door
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18
16
14
12
10
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6
4
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07-Jun-19
07-Jul-19
07-Aug-19
07-Sep-19
07-Oct-19
07-Nov-19
07-Dec-19
07-Jan-20
07-Feb-20


Bedroom movement
60
50
40
30
20
10
0
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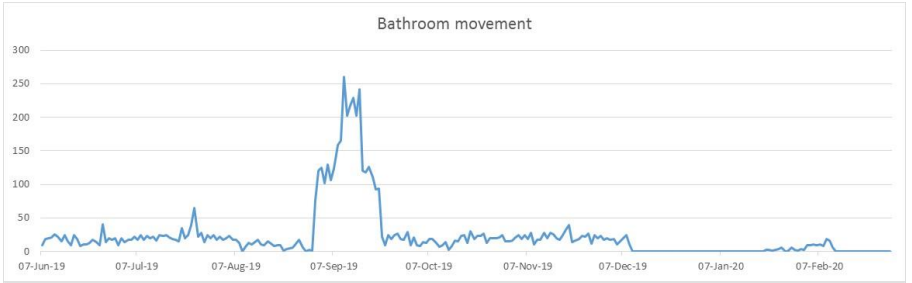
Bathroom movement
300
250
200
150
100
50
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07-Jun-19
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07-Oct-19
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07-Dec-19
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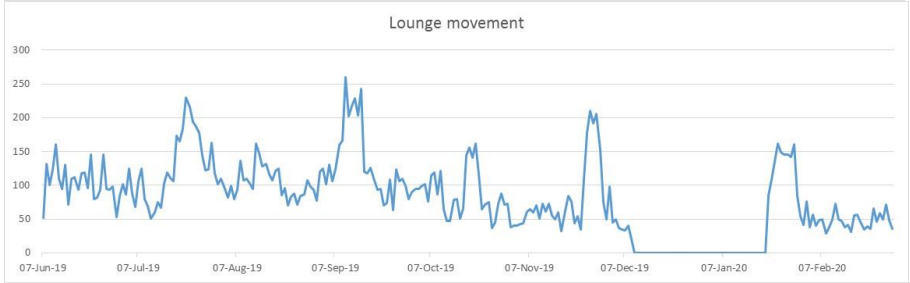
07-Feb-20


Lounge movement
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250
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07-Jun-19
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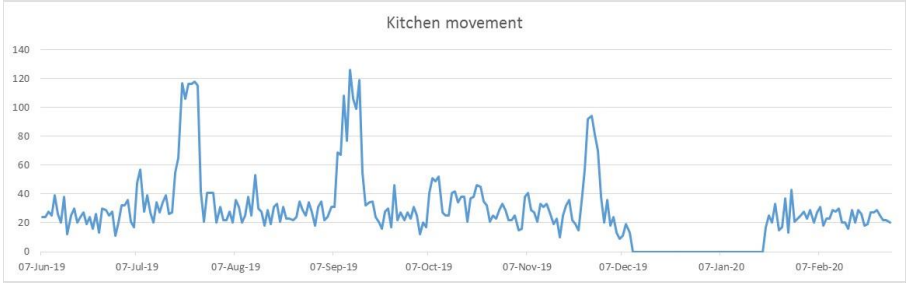
07-Jan-20
07-Feb-20


Kitchen movement
140
120
100
80
60
40
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07-Jun-19
07-Jul-19
07-Aug-19
07-Sep-19
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07-Nov-19
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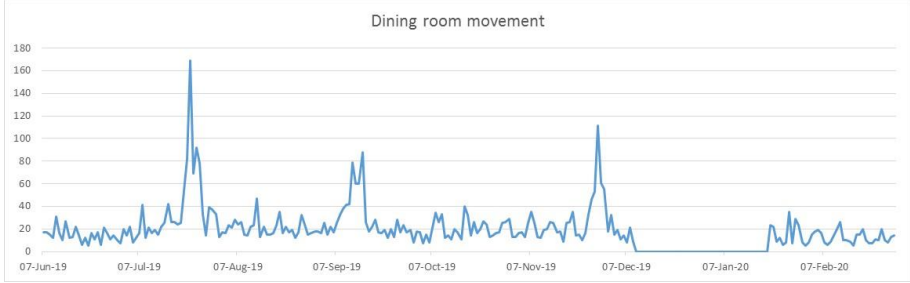
07-Jan-20
07-Feb-20


Dining room movement
180
160
140
120
100
80
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07-Jun-19
07-Jul-19
07-Aug-19
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07-Oct-19
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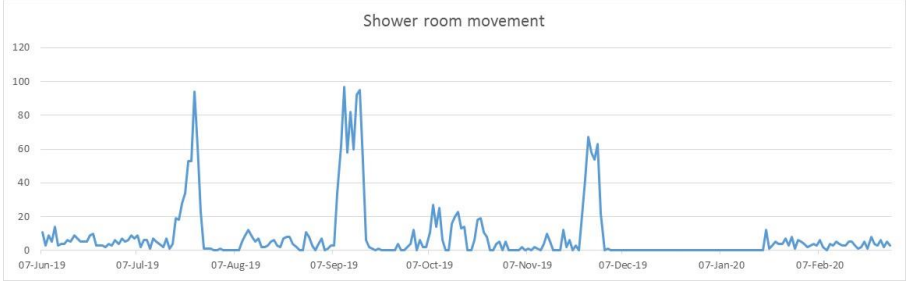
07-Dec-19
07-Jan-20
07-Feb-20


Shower room movement
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07-Jun-19
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07-Sep-19
07-Oct-19
07-Nov-19
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07-Jan-20
07-Feb-20

4. Digital Learners and Digital Buddies

Digital Learner survey

Participants

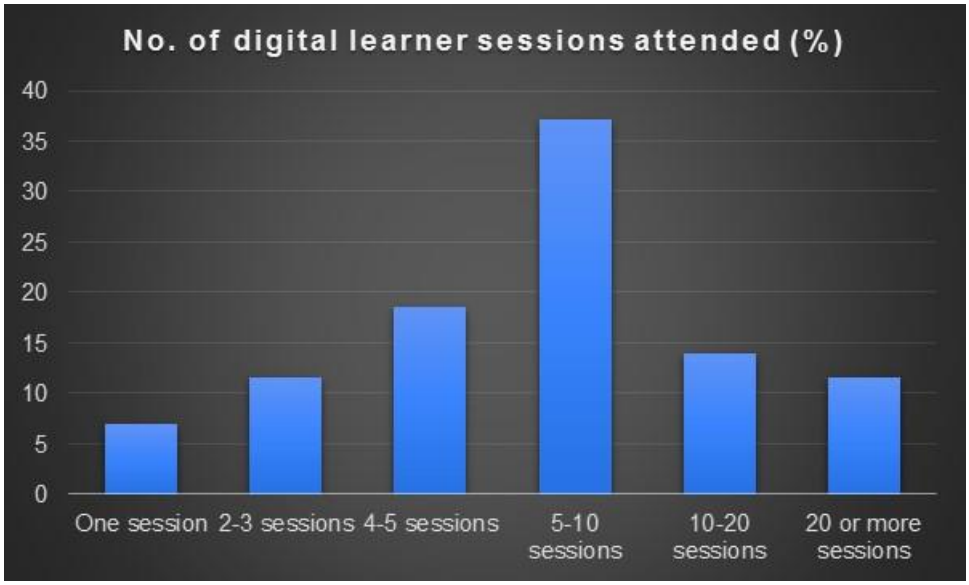
A survey of Digital Learners was undertaken to help understand the experience and impact of the project on participants. A total of 43 Digital Learners completed the survey out of 1,094 learners engaged in the project (a response rate of 4%), meaning the findings should be treated with caution. While they came from all local areas covered by the project, over half (25 people or 58%) attended digital learning sessions in Uttlesford, while 12 (28%) participated in Epping and six (14%) in Harlow.

Three quarters (31) were female and all but one were of White British ethnicity. All respondents were aged 55 or over: 10% were aged 55-64, almost two fifths (38%) were 65-74, and a third were 75-84. Half of the respondents lived alone, and half lived with other people. Almost a fifth (19%) were aged 85 and above. The majority (60%) were not limited in their day to day activities by long-term health conditions or disabilities. Of those who were limited, the vast majority described themselves as limited 'a little' in their day to day activities, while two people were limited 'a lot'.

Participation

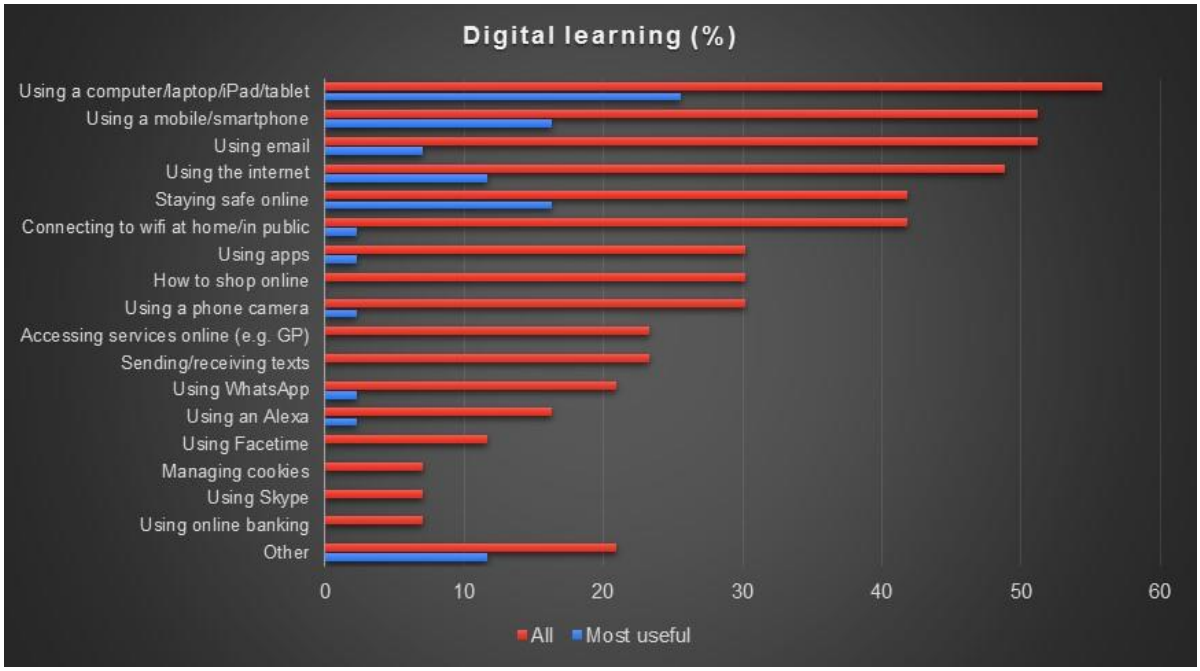
The majority (84%) had digital learning sessions in a group, and 44% had one to one sessions, meaning 28% had both group and individual sessions. Of those that had both types of session, the large majority preferred one to one sessions. The majority (88%) attended sessions in the community, while 23% had sessions at home (12% had both community and home based sessions). People who attended community-based sessions generally found the venues to be appropriate – just over half found them fully suited to their needs, with the remainder describing them as 'somewhat suited' to their individual needs. Those who only had sessions in their home may not or would have not participated in the project if home sessions had not been offered (none of this group said they would have definitely participated if only community-based sessions were available). This was due to health conditions, a strong preference for personal, one to one sessions, and help with technology that was based in their home. Similarly, those that attended both home and community-based sessions had a strong preference for one to one support.

Survey respondents attended a wide ranging number of digital learning sessions, from a single session to over 20. The average number of sessions attended was nine. Two thirds of people thought the number of sessions they had was 'about right', with the remaining third thinking that they had had too few sessions. People who had fewer sessions were slightly more likely to think they had had too few sessions, but some people who had over ten sessions still thought this was the case.



Three quarters of people thought their digital learning tutor/digital buddy was 'very knowledgeable and helpful', with the remainder describing them as 'adequately knowledgeable and helpful'.

Learners covered a range of digital technologies in their sessions – over 20 different aspects of using technology were covered in the sessions. The most commonly covered topics concerned the basics of using kit, getting connected, and staying safe. These topics also reflected what learners found to be most useful from their digital learning sessions.



Impact

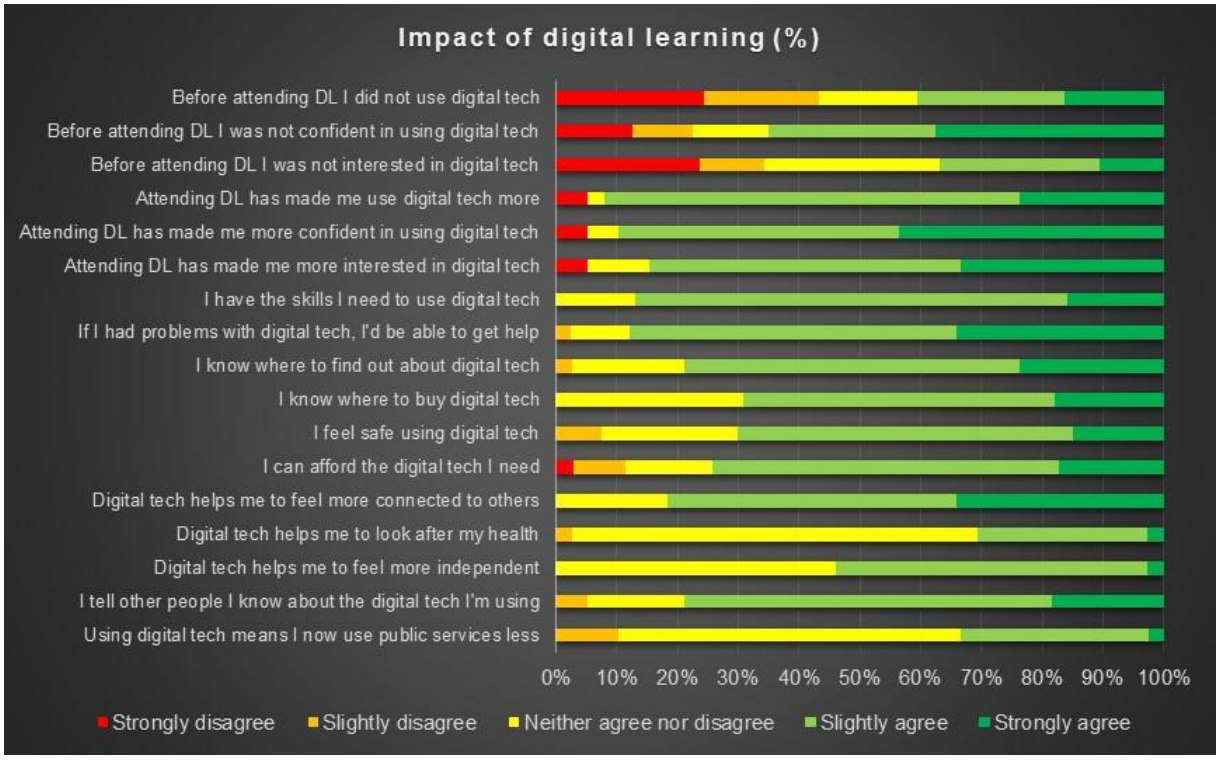
On the whole, learners experienced their sessions positively: over half (53%) described their experience as 'very good' and 37% as 'good'. Only one person described their experience as 'poor'. Respondents identified several key reasons for experiencing sessions positively, including feeling like they were in a safe space to be able to learn and have questions answered through knowledgeable tutors/buddies with the time and patience to answer them, increasing their confidence, and providing a positive social environment.

> *"Gave me great help by not being afraid."*
>
> *"It has given me confidence and allows me to communicate more with my family [abroad]."*
>
> *"I joined with a list of questions/actions for my new laptop. Each one was answered and explained to my level of need. The leader(s) used language I understood at a pace which I was able to follow (unlike my very knowledgeable grandchildren!)."*
>
> *"I am aware I only use a small proportion of the capacity of digital anything so the additional learning has been very helpful, and I've never been made to feel inadequate."*
>
> *"I have really enjoyed the social side too."*

Survey respondents were asked about the extent to which they agreed or disagreed with a series of statements linked to the aims of the project. The chart below shows that the digital learning (DL) sessions engaged people with a range of prior experience of using digital technology, although two thirds of people were not confident in using digital technologies prior to engaging in the project and over a third were not interested in digital technology at this point. As a result of attending sessions, the large majority of learners feel more confident, skilled and interested in digital technologies, and use them more.

A significant majority of respondents now know where to find out about digital technology, where to access help with any problems they have, and where to buy it (three quarters can also afford the technology they need). The majority (70%) feel safe using digital technology, while eight percent were still left feeling unsafe in using digital technology.

The strongest impact seems to be in feeling more connected to other people – 82% feel more connected through their digital technology. Almost a third think that using digital technology now helps them to look after their health, although two thirds were not persuaded one way or the other on this issue. Over half feel more independent through their digital technologies (although just under half are unsure). A third of respondents think they use public services less as a result of their use of digital technology, while ten percent think they are slightly more likely to use services – over half (56%) remain neutral on this question.



In offering final comments about the scheme, respondents touched on potential ideas for continuing digital learning support that included a drop-in service and paid for digital learning support.

> *"An extremely useful service where older people are able to learn at their own pace from knowledgeable (local) people they are able to trust. I shall miss the sessions as I am continuing to learn things I didn't know would help. A pop in help service (or appointment system) would be so useful as many older people are not of the digital age and struggle to find help at their level."*
>
> *"I hope the classes can continue and we would pay if they did. Thank you."*

Digital learner case studies

Three Digital Learner case studies are given below, drawn from across the three districts covered by the project. Names have been changed throughout the case studies.

Lena

Lena was given a leaflet about the project on her local high street by the project worker, who she described as "very nice, very calm, he put me at ease – that's important because I'm nervous around technology, my generation didn't learn about it". Lena added that if she had just seen the leaflet, and not engaged with the project worker personally, she would not have started as a Digital Learner.

Lena initially felt "ashamed that I couldn't use the internet" and was "very apprehensive about starting" as a digital learner, but had "no-one else to ask – my husband doesn't know about computers either". The sessions helped Lena to build her confidence, "starting from scratch, nothing was assumed".

Lena followed the Learn My Way process, appreciating the pace of the structured approach until her confidence and skill grew and her learning became more flexible. After initially finding it difficult to get to grips with using a keyboard, Lena learnt how to use email to communicate with friends and family, and to search for various things and access music online.

Lena has recently bought an iPad, and feels "a bit afraid of it at the moment", but is learning how to take and send pictures and videos on her new device, which is a "novel experience, lovely and it doesn't cost me to develop the pictures to send to [my relatives abroad]". Lena also feels nervous about shopping on the internet and is reluctant to enter her bank details online, citing friends who warn of "getting into difficulties and losing money by being scammed".

Lena has "enjoyed the learning" and is "not a stranger to technology now – I understand the language of technology. I feel part of the modern world". Lena also enjoyed being a part of the digital learning group: "they are nice people, it's nice to chat and learn about their experience and have a coffee together". The group has met in the local library (although the introduction of room hire charges and insurance requirements now make this difficult), as well as a local coffee shop and pub, and all locations have been convenient and facilitated a social connection between learners, who have begun to help each other with their learning as their skills, confidence, and relationships have grown.

Lena strongly recommends the initiative to other local people who have no experience or skills in technology: "I would say to people 'just go, don't be afraid'. I've become more hopeful through the project. I can learn new things, I've grown in confidence, and confidence breeds confidence". Lena hopes the group continues, and while she feels she can sustain what she has learnt so far, she anticipates that it would be "difficult to carry on learning about new technology" without the support of the project.

Claire

Claire "didn't know anything about computers – my husband did all that", before being introduced to the project by the local project worker. Claire had initially rejected the idea of learning to use technology when suggested by her family, but was "eventually persuaded" and now thinks that "older people can come to learn about technology".

Claire had "tried and tested ways of doing things with paper and a filing system", and it was "daunting" to begin as a Digital Learner. Claire also found the idea of learning about new technology in a mixed ability class "daunting – I don't want to seem stupid" and preferred a one to one experience so she can go at her own pace.

Claire now has an iPad, which she uses to take and share photos, and has recently made her first purchase online. However, receiving "some recent scams" has undermined her confidence in shopping online and Claire has not bought anything over the internet since. Claire added that she also likes the "physical, social, familiar" experience of going to the shops, which acts as a further disincentive to shop online.

Looking ahead, Claire would like an Alexa "to talk to and to play music through it". She also has some interest in an Acticheck wristband and wondered what would happen if she had a fall, but reflects: "I don't think about falling very much, it's not a concern". Claire wondered whether being introduced to the technology could have the perverse outcome of "creating an anxiety about something that wasn't there before".

Sheila

Sheila found out about the project by happenstance: she saw a leaflet and got in touch with the project worker as "you have to go and find out about things and be proactive. Everyone I know is online, doing banking and shopping, and I needed to know how to do that."

Sheila is supported by her Digital Buddy, Brian (see below), who she describes as "very patient". Sheila described herself as "a complete novice" before her digital learning began, and first wanted to "sort out online banking so I can keep tabs on my money, it's much more convenient". Sheila has subsequently set up a particular shopping app by herself and felt "very proud" of making her first online purchase, and has learnt to use a Kindle Fire.

Sheila described the relationship with her Digital Buddy as "very important – it means what we do is tailored to me and I can go at my own pace and feel confident in being able to ask for help. I might have been reluctant to go to a group and not have that one to one relationship". Sheila and her Digital Buddy have met once a week for several months and the relationship is now self-sustaining and does not require coordination by the project worker. Sheila says she has "become friends [with her Digital Buddy] and have fun together when we meet, I enjoy it. It's good for older people to learn, it keeps your mind active and it can be so easy to become withdrawn and isolated in older age, so this project guards against that". Sheila thinks she is building a foundation of familiarity with technology and transferrable skills that apply across a range of technologies, and feels "confident to give things a go, and I have [my Digital Buddy] as a safety net, he's always there at the end of a phone" to provide reassurance and technical support if Sheila gets stuck.

Sheila now describes her ability to use technology as "a basic life skill, it's essential for getting value and being able to do things. I had to do [a probate process] online – how else would I have done that, it would have cost a fortune for a solicitor to do it".

Digital buddy case studies

Three Digital Buddy case studies are given below, drawn from across the three districts covered by the project. Names have been changed throughout the case studies.

Katy

Katy started as a Digital Buddy towards the beginning of the project, having come to it through another local initiative supported by CVS Uttlesford. She has a background in IT and wanted to use her skills to participate in and feel connected to local community life, and to help people with digital learning needs. The chance to be a Digital Buddy was also "something new" for Katy and appealed to her on that basis, and the flexible, light-touch commitment also facilitated her involvement (Katy volunteers for two digital learning sessions per week, each of which is two hours long).

Katy has run digital learning groups, rather than working with people in one to one sessions (although she supports individuals within each group session). Katy's experience illustrates that Digital Learners come with a range of needs and interests – such as the basics of using a keyboard, specific programmes such as Excel, and how to use email – and have a range of kit, from new products (often "bought and set up for them by their kids, but they can't use it themselves") to technology that is "out of date".

Katy offered several key reflections about her experience. Firstly, the safeguarding and Digital Buddy training she received at the beginning of her participation emphasised the importance of good boundaries around the volunteering role. In supporting Digital Learners, Katy has gotten to know about their personal circumstances and wider family issues, and the tensions that can emerge between what a Digital Learner wants, and what pressure they feel from family members. Further, Katy can recognise when a Digital Learner's technology is outdated for the tasks they want to be able to perform, and can be asked to advise what products should be purchased to meet the person's need. Additionally, working with email can also present the risk of Digital Buddies seeing personal communications. Katy takes care to maintain the boundaries of the role in facilitating learning and building agency to help the individual learner make decisions for themselves through a coaching approach, rather than by giving direct advice. For example, Katy shows people how to use technology review and price comparison websites, explaining that the role is to "build the capacity, but don't do the shopping and decision-making for them".

Secondly, Katy suggests a number of amendments to the way digital learning sessions are run. The Learn My Way materials are "not simple enough" and need to be made more accessible for some people. For some sessions, it is not known in advance who is turning up, which can mean "too broad a spectrum of Digital Learners" in any one group, meaning it can be difficult to manage a coherent session that works for all learners. In response, Katy suggests improving sign-up protocols (which includes "making sure people remember to bring their kit and their passwords!"), and having targeted sessions on common issues such as using email or Alexas, alongside general/drop-in sessions, both of which might be only be an hour long ("an hour session is long enough"). Katy also suggests expanding local advertising of the Digital Learning scheme, particularly through local groups and by encouraging Digital Learners to recruit others through word of mouth networks.

Katy thinks Digital Learners have benefitted from the scheme in different ways: "it reduces isolation because people are more able to be in contact with their family and friends"; builds confidence in technology that expands their view of what they think is possible, and builds their "confidence and a sense of choice and independence" more generally; helps people "feel more connected to the local area and community by being online" and able to find out about local issues and what's on or available; and is a "fun, social time" that helps people to connect, relax and enjoy each other's company, reducing isolation in itself. However, Katy also thinks that regular, systematic feedback from Digital Learners should be sought at each session to improve the project team's and Digital Buddies' understanding of what works for whom.

The scheme has also impacted positively on Katy herself. The role is "satisfying and rewarding to see the progress in Digital Learners", and is "fun for me too". Katy has also developed her own technical knowledge and skills, for example in learning about Apple products that she was previously unfamiliar with, and using her smart phone and the suite of Google applications in new ways. Katy has gained most of this new knowledge through support offered by another Digital Buddy (also a project worker on the scheme), which illustrates the potential for networks of Digital Buddies to learn from and support each other in facilitating digital learning.

Katy believes there is an ongoing need for the scheme, and that the capacity that has been built up in Digital Buddies can continue to be utilised by offering paid for sessions (low cost or donations) to cover the costs of venues and volunteer support.

John

John is the youngest Digital Buddy in the scheme and combines volunteering with his full-time education. John became a Digital Buddy after seeing a poster at a local library and contacting the project worker to find out more about the role and how this could sit alongside his studies. John has a keen interest in technology and was studying computer science at the time of his enrolment in the project – he was keen to put his interests and skills to use, and was also keen to gain experience and skills in engaging and communicating with people.

John volunteered alongside two other Digital Buddies, running digital learning drop-in sessions in a local library to help people build their skills and confidence and achieve specific tasks. Often, people came to drop-in sessions "for help with how to use their devices – they'd been shown quickly how to use them or do something by their family or kids, but not had a chance to practise or experiment" so had no independent capability to use them. John gave an example of a Digital Learner who came wanting to learn how to work with PDFs, and who "came over several weeks and repeated it until she got it and felt confident – until she was independently capable".

While it can be important to teach specific skills, John points to the importance of generic and transferrable skills and confidence in technology. For example, one Digital Learner wanted to improve her English speaking skills online. Helping her find the best option was more a collaborative discussion and problem-solving exercise than instructing someone on a particular technological skill, and the confidence and skills gained in searching and appraising options, setting up her kit, going through an online registration processes, and linking up different bits of technology all helped to achieve her goal and to give her experience and skills for many other technological and online tasks. John also notes that from time to time there are more complex, one-off forms of support that Digital Buddies can solve as "tech support people", and this kind of support – helping people when they are stuck – keeps people using technology and deepening the value of it to them.

John reflects that the key qualities needed to support Digital Learners are "being patient, communicating clearly, and growing people's confidence – it's not just knowing about tech". Through the project, John thinks he has improved his communications skills: "I'm learning to communicate with different types of people with different styles and needs, and working out how to communicate clearly both as myself and to fit a person's own needs. You have to avoid the 'teacher-student' dynamic as a Digital Buddy, it's more supportive than that". John has "come across people and bits of tech I wouldn't have come across otherwise, so that's increased my learning and helped me to think on the spot under pressure – you need to quickly develop trust and rapport with a Digital Learner so they feel confident".

John described the Digital Learners he supports as comprised of "people 55+, but a mixed group, with some in their 80s. The majority of Digital Learners seem to be female, and a few couples come together". John is unsure about why this particular cohort tend to come to sessions, but wonders about potential gender differences within a broader digital divide, and around seeking help. He also reflected on the intergenerational aspects of his work: "Digital Learners seem to want to come to me – there's a perception that young people know about tech, and if you can communicate clearly as a young person, you can benefit from that perception as a young Digital Buddy".

John described his experience as a very rewarding and enjoyable one: "it's been nice to hear about people's stories and situations and to see technology improve their lives in some way. It's so important that people are online – the internet is a huge, vital resource you have to be tapped into".

Consequently, John thinks there is a continuing need for the project and that it requires "constant promotion" to reach people in the community who need digital skills.

He would "definitely" recommend the experience to other (young) people as it is a "rewarding opportunity to develop skills and put them into action". It has also helped John to reflect on what he enjoys – through the scheme he has realised he is "more interested in the applied side of tech and communications, rather than coding", and has refocused his studies accordingly.

Brian

Brian is retired and has previous experience of volunteering. He saw an advert for the project on Facebook and thought that being a Digital Buddy would fit his skills and interests: he is experienced in using different technologies, likes to keep his "brain active", enjoys social interaction, and finds it "rewarding to help people directly". Brian supports three Digital Learners, all with different circumstances and needs, and appreciates the care the project worker takes in matching Digital Buddies to Digital Learners. The project worker considers the personalities involved, and not just the technical needs and availability during the week in putting people together, and also attends initial meetings to explain how the relationship works, provide support if needed, and answer questions. This helps to create the right foundation and relationship for the work.

Brian has helped Digital Learners to get to know a range of technologies, from online banking and shopping, using specific devices such as a Kindle, to using smart phones for a range of everyday tasks. In reflecting on his role he thinks that "one to one sessions are far better than groups, it's more relaxed and you can be more flexible than in a class".

Brian describes "a real sense of achievement" when he sees the Digital Learners he supports make progress and become more comfortable and confident with technology. In particular, he thinks "being online is now so important for being able to find out what's on in your community – there's no local paper – and to being able to access services. The project is great, but the Government needs to help and encourage more people online by providing free broadband for everyone. And as more services go online, like booking a GP appointment, there has to be a parallel commitment to getting people online and that can be a steep learning curve for some".

Brian has also learnt about new technologies through his role as a Digital Buddy and feels proud of his knowledge, and has also gone to see a Living Smart Home to find out how they work. From this visit to a Living Smart Home he has shared his knowledge with the Digital Learners he supports and with his "local elderly neighbours", for example by explaining how Ring doorbells can work for people. He has enjoyed his Digital Buddy role and feels he has "developed a friend in Sheila [a Digital Learner – see above]".

5. Discussion

This section summarises the benefits delivered through the project for different stakeholders, and then discusses the processes and impacts of the project, drawing on the evaluation data described in the previous sections of this paper, the reflective workshop held with the project delivery team, and stakeholder interviews. Interviews were held with members of the project team, Citizens Online, companies providing the technologies used in Living Smart Homes, and stakeholders in local councils and organisations within the project catchment area. The discussion is organised around the main themes and learning points to emerge from these different data sources within the evaluation.

While it is not the place of this evaluation to prescribe the shape of any future work, this section includes some key learning points to consider around digital inclusion and its role in enabling fulfilling, independent living in West Essex and beyond. These learning points cover aspects of the project that were an important part of its success, as well as suggested adjustments or expansions to the project's delivery model based on the experience of the pilot.

Benefits

The evaluation has demonstrated a wide range of benefits achieved by the project. At its most impactful, the project has the potential not to just enhance daily life and independence, but to save lives. Several case studies illustrated the fear of leaving vulnerable loved ones alones, and the reassurance people felt in knowing the technology provided an instant and simple way to raise the alarm if needed. One of the case studies confirmed the reassurance they felt through a 'real test' of the technology when it was used when the Living Smart Home host felt unwell.

The pilot also showed its potential to maintain independent living for Living Smart Home hosts. One of the case study hosts reported removing themselves from a waiting list for sheltered housing accommodation due to the support provided by the digital technology in their home. In addition, they now also feel much more confident about maintaining their life in their own home as their health deteriorates in future (as the host expects it to do). While a cost-benefit or cost-effectiveness analysis is beyond the resources available for this evaluation, the investment of several hundred pounds in technology and oncosts has clearly yielded a significant financial saving in this case. In addition, a third of Digital Learners responding to the survey reported using public services less as a result of learning how to use digital technology.

Participants across the project also reported a transformational shift in mindset. The survey of Digital Learners found a significant increase in people's confidence and interest in digital technology, as well as their use of it (and feeling safe while doing so), as a result of their digital learning sessions. The Living Smart Home case studies show how the experience of being a host has significantly changed their relationship with digital technology and changed their view and experience of themselves: hosts have shifted from feeling like a 'novice' around technology to developing a familiarity and curiosity of technology that has helped people to feel a greater sense of agency and hope. Several reported feeling like they had joined 'the modern world' through their experience.

These key points, as well as the evaluation evidence given in this report, show that the project has met its aims to develop proficiency and confidence in technology; to help people feel and stay safe; to be able to ask for and find help with technology; and to become familiar with the possibilities technology can pay in their lives.

A summary of the benefits generated by the project is described in the table below, and examples of all of them are found throughout the preceding sections of this report. The benefits described are

very wide-ranging and impact multiple stakeholder groups, underlining the value generated by the pilot. It should be noted that not all individuals in each group necessarily experienced all benefits, but rather that this table reflects the range of benefits the technology can generate when delivered through the particular means used in this project. The table does also not necessarily describe the total set of benefits possible, but rather describes the main benefits experienced to some degree in the pilot project.

Stakeholder group	Benefits
Living Smart Home hosts	• Living Smart Homes are capable of supporting people with a wide range of conditions, including multiple and complex conditions • Changed the perception of technology, from something unfamiliar and unwanted, to something integrated and valued • Increased confidence in and use of technology • Increased the level of contact and feeling of connectedness to family and friends • Promoted feeling purposeful and part of change-making and generated benefits for people in the community • Hosts benefited from visits, creating new connections and gaining new knowledge and support as a result • A felt sense of technology making life easier • Feeling significantly more secure in their home and reassured that help could be summoned if needed – a strong foundation to independent living • Enhanced/introduced fun and pleasurable interests (back) into people's lives • Feeling part of the modern world
Visitors to Living Smart Homes	• Professionals: consistently positive experiences of visits, with people finding them very informative • Professionals: realising and appreciating the value of strong personal relationships and trust between professionals and clients in helping people to meet their needs through technology • Public: positive experiences of visits, with people finding them interesting, useful, and informative • Public: Seeing the technology in situ resonated with their own experience – they can imagine and are interested in using the showcased technology themselves
Digital Learners	• Valued one to one and group sessions, and generally had the right number of sessions to learn what they wanted to • Valued their relationships with their Digital Buddies, and the social dimension to the project enhanced their wellbeing and made the project 'stickier' for learners • Digital learning increased social connectedness more widely • Learnt about and used a wide range of technology, felt more confident using it, and increased levels of skills and knowledge in technology • Felt safe and reconnected to learning, building confidence and a sense of inclusion and empowerment • Digital learning increased a sense of independence, improved health, and lowered reliance on public services for significant proportions of learners

Stakeholder group	Benefits
Digital Buddies	• Valued their relationships with their Digital Learners, and the social dimension to the project enhanced their wellbeing and made the project 'stickier' for Buddies • A rewarding experience, generating new skills, knowledge, and social confidence
Wider stakeholders	• Family of LSH hosts: strong sense of reassurance that older people in their family were safe, well, and supported; increased interaction with older people in their family; greater knowledge and use of technology through their direct and indirect experience of technology through the project • Carers: increased understanding and experience of how digital technology can augment care; job is 'emotionally easier' as the carer feels the person cared for is better supported outside of care visits • Voluntary sector: adds value to and helps to realise potential of technology through voluntary sector use of local networks and relationship-building skills; voluntary sector capacity developed on how to utilise technology to support independent living, reduce loneliness, and increase wellbeing • Technology companies: helps to create market and learning for developing assistive technologies; help to create relationships that can bring digital technologies into people's homes • Commissioners: provides additional ways of promoting wellbeing (in its different forms) and of meeting individual needs – therefore supports local authorities in meeting their obligations under the Care Act (2014)

In addition, the benefits delivered through the pilot support the first six dimensions of the Digital Boomer's theory of change, upon which this project was based.

First priority: Digital skills for all – citizens and professionals

In training Digital Buddies and enabling warm and constructive relationships between them and Digital Learners (and between the Digital Learners themselves), the project has shown that even those with no experience of technology can become curious and confident, and can change their relationship with technology. *Second priority: Create spaces and opportunities for people to explore and enjoy technology*

Living Smart Homes have created a space for citizens, alongside the professionals who visit and support them, to experience and learn about the role of digital technology in meeting individual needs. These real ('living labs') and safe environments have fostered experimentation and helped to develop new skills and confidence. Vlogs and other communications about Living Smart Homes have enabled other interested parties to virtually visit these spaces, expanding the awareness and benefits of the project.

Third priority: Technology is a First Line Response for health and care

Perceptions and attitudes towards technology shifted positively for both professionals visiting the Living Smart Homes and those working directly with the hosts.

Fourth priority: Essex is a Leading Destination for Technologists & Innovators and Independent Living Technology in Practice

The pilot's bid and supporting document established Essex as a place that contains high levels of need among older people and people with disabilities: the local older population is set to grow significantly over the next two decades, with corresponding increases in the number of people over 50 who are carers, and the numbers of people with dementia. In addition, the number of single older person households is expected to increase by almost 50%.[5] This pilot shows that Essex contains the potential to begin to respond to this need through the type of consortium brought together for this project, which blends community development with digital inclusion and innovation to illustrate how technology can help to meet the needs of the future older population in Essex.

Fifth priority: Our working and care environments support a Digital First Approach

While the Digital Boomers model seeks to position technology as the 'first response' to think about, it also recognises that it is not always appropriate to deploy 'tech first' solutions. The pilot supports this position: technology is under-utilised in supporting the needs of older people and people with disabilities, but should be used in a way that improves a person's experience and wellbeing.

Sixth priority: Invest in the community and voluntary sector so they can participate as equal partners

The pilot clearly demonstrates that investing in the community and voluntary sector not only enables the sector to participate equally in digital change-making, but adds significant skills, experience, and perspectives to this kind of digital inclusion work. The power of the technology was only realised through the reach and interpersonal skills of the voluntary sector organisations delivering the project.

The pilot does not yet seem in a position where it can offer evidence to support the latter stages of the theory of change: the seventh priority (*Create a Radical New Commissioning model for tech enabled service*) and eighth priority (*Develop and Sustain Digital Boomers as the system delivery vehicle for driving the change*). However, it seems clear that the findings from this evaluation can support further thinking on developing digital services that can commissioned and integrated into local health and social care systems. The evaluation also supports the prospect of scaling up Living Smart Homes (ideally with Digital Buddies integrated into supporting hosts and spreading interest and take up through their own networks). This might be taken forward, for example, by engaging with new developments, housing associations, commissioners, and through direct community engagement.

The remainder of this section addresses the main challenges and learning points to emerge from the evaluation.

Technological challenges

The great majority of technology deployed in the project worked well in the environment in which it was used. Most of the technology deployed in the pilot, particularly that which was used in Living Smart Homes, requires a high speed and strong Wi-Fi connection, and high grade fibre cabling and routers. Video Ring doorbells, for example, did not work well on low connection speeds/signals. Some of the Living Smart Homes and venues for digital learning sessions did not have this capacity and this foundation is a clear prerequisite, and the project team worked to put this in place wherever possible. In some cases this meant upgrading home broadband packages, and finding alternative public venues for digital learner sessions where the Wi-Fi connection met the needs of

[5] Morris, C., and Carson, I. (2018) *A theory of change for older people, technology & independent living*. [Available at: http://rethinkpartners.co.uk/wp-content/uploads/2019/09/digital-boomers-full-report-final-1.pdf]

learners and the devices. Looking ahead, digital inclusion work will need to ensure that this basic foundation is in place. This might involve being clear to future potential participants on the technical requirements for integrating digital technology in the home, building this capacity into health and social care institutions (such as sheltered housing), and continuing to advocate for universal high speed broadband coverage if digital technology is going to become part of the package of support that helps people to live well and independently.

There were some specific issues with some of the technology deployed. For example, in some cases, assumptions were made about the compatibility between new and existing technology in people's homes, such as televisions. Further, some of the technologies, such as sensors around the home, run on batteries, and while Alcove supply hosts with spare batteries, there is a need to make sure hosts have stored them in a memorable location and understand how to change them if required. This underlines the need for clear technical requirements being understood by all parties. There were also some examples of learners and Living Smart Home hosts not understanding the limitations of some of the technology. For example, one Living Smart Home host equipped with an Acticheck wristband believed this provided them with a means of alerting people if they needed help when at their allotment, and consequently would not necessarily make sure they had their phone with them. Acticheck confirmed that the wristband needs to be in range (approximately 200m) of the base unit for it to be able to send an alert, which meant that the individual could not use their wristband in the way they anticipated.[6]

➔ **Learning point 1:** An obvious but essential platform for the work is to check that digital technologies are adequately supported by good Wi-Fi and ensure people understand the requirements and limitations of the technology they have.

Reviewing and supporting use of technology

In the field of health, an important distinction is often made between the efficacy and the effectiveness of an intervention. Efficacy is concerned with whether an intervention yields the expected result under 'ideal' circumstances, whereas effectiveness is concerned with the degree of benefit achieved under 'real world' conditions. In the Digital Buddies and Living Smart Homes pilot, there were examples of digital technology deployed from an 'efficacy perspective' that did not produce the anticipated benefits. A simple example is given in Belinda's case study: her Living Smart Home was fitted with smart lights, but her inability to close her blinds meant that she would not turn on her lights when she needed to. Similarly, Belinda had not used her care tablet because it was not conveniently located and was painful to use given problems with her fingers. Effectiveness is "thus contingent on the context in which it is introduced. What works to produce an effect in one circumstance will not produce it in another".[7] Other examples include a reluctance to utilise online shopping due to a preference for maintaining the social and physical benefits of going out to shop, and the fear of entering banking details online – effectiveness of an intervention relies on the social norms and expectations associated with the context.[8]

[6] While the wristband can be paired with a smartphone and used away from home, it obviously requires the smartphone to be taken when leaving the home. One of the case studies in this evaluation highlighted the ease of forgetting to take a phone on an outing (and the perceived advantage of the wristband as it was permanently attached to the body).

[7] Tilley, N. (2000) *Realistic Evaluation: An Overview*. Presented at the Founding Conference of the Danish Evaluation Society

[8] Sherman, L. (1992) *Policing Domestic Violence*. New York: Free Press

The project team recognised the need to avoid assumptions about the ways in which people will use digital technologies based on what others envisage, and sought to repeat training where needed, and to provide support for specific technical difficulties that arose even when technology was used in the way originally anticipated and discussed. As the project team found, repeat training, and helping people to overcome their fear and reluctance to adopt new technologies can be resource intensive and needs to be factored in as a cost of doing this work. Additionally, several people across the project expressed a desire for hard copy instruction manuals, while some had printed 'cheat sheets' with concise, easily understandable key instructions for using their technology. While many new digital devices do not come with printed guides (this information tends to be online), providing what works for the individual will help to ease adoption and integration of new technologies.

➔ **Learning point 2:** Adoption of new technology can be a slow and difficult process for some. Regularly review how people are using digital technologies in the context of their lives, and remove redundant technology where required. Reviews might include both informal conversations and more occasional structured reviews in which the use and impact of all technology can be considered.

The evaluation clearly found that Digital Buddies provided expert support for Digital Learners in ways that enabled them to build confidence and skills. However, the linkages between the project strands could be deepened and a similar model of digital buddying applied to Living Smart Home hosts (there are instances of digital learning sessions being held very close to Living Smart Homes where links could easily be made). A feature of Digital Buddies revealed in this evaluation is the high degree to which they are diligent, pro-active technology enthusiasts – they take time to find out about new technologies (or technologies they are unfamiliar with), are keen to solve people's problems, and share their experience and knowledge generously and widely through their social networks. Attaching Digital Buddies to Living Smart Homes would therefore not only provide a source of ongoing support and problem-solving, but help to disseminate the experience and possibilities of Living Smart Homes more widely.

➔ **Learning point 3:** Consider integrating a Digital Buddy model into the Living Smart Home programme.

The importance of a relational approach

Perhaps the key critical success factor in the pilot has been the quality of relationship the project workers and Digital Buddies have been able to form with the people they have supported. While knowing about digital technology and being able to communicate and creatively apply that knowledge to different individuals is a prerequisite for the roles, it is the relationship that is the transformational foundation upon which project outcomes have been achieved.

Many participants in the project had very low levels of digital skills and experience, and found the prospect of engaging with digital technology daunting. In addition, participants described finding it difficult to ask for help, and were often apprehensive about opening up aspects of their lives to technology (their homes, shopping and banking, relationships, and social interests), fearing a loss of control and the familiar and the possibility of being exploited (e.g. through phishing scams).

The project workers created direct, trusting relationships with project participants and provided safe spaces and reassurance throughout, enabling them to feel they could participate and benefit, and helping their confidence and curiosity in digital technology to grow. On the digital learning side, the project workers created this foundation for Digital Learners, meaning Digital Buddies could build on

this safe ground. Without this quality of personal relationship, many people engaging in the scheme would not have got over their barriers to participation, or would not have benefitted from the project to the extent they have.

The relational aspect of the project is also seen in the social interaction that has grown between participants, for example between Digital Learners and their Buddies, among Digital Learners attending the same group, between Living Smart Home hosts and the visitors to their homes, and between project participants and their family and friends through the use of digital technology. This social interaction and friendship is a beneficial outcome of the project in itself, but also serves to make the scheme 'stickier' – people's continued participation and growth in confidence and skills is oiled and maintained through the social interaction that is embedded within the digital learning.

➔ **Learning point 4:** Maintain a strong relational and social foundation to digital inclusion work.

Perhaps a more controversial relational aspect of the pilot has been the way Living Smart Hosts have interacted with their Alexas. Hosts describe their Alexas as 'companions', regularly having conversations with them and having fun through them and with them, and introducing social rituals with them such as saying 'good morning' and 'good night' to them. Anthropomorphising the technology in this way has resulted in them feeling like there is an additional 'presence' in their home, and some describe feeling less lonely as a result. While these benefits are welcome, they raise questions about how commissioners and service providers could and should support independent living. For example, the 'social care crisis' in the UK, and abroad, has led to the development and testing of the use of AI-equipped robots in delivering social care. 'Pepper the robot' was recently trialled in a social care pilot in Essex with a view to helping "transform the way the council [Southend-on-Sea Borough Council] delivers social care services to the local community".[9] This innovation sits in a wider context of expanding 'digital by default', shifting services online (such as video-conference GP appointments), and the growing online shopping market. On the one hand, Councils' social care budgets have almost halved since 2010, there are high numbers of vacancies in the social care workforce, and there is a need to innovate and meet the world where it is. On the other, removing the 'social' from social care and replacing it with 'robo-care' "privatises the issue of loneliness, concealing it within the home so that it is no longer a collective responsibility".[10] While these issues are outside the scope of this evaluation, pilots such as the Living Smart Home scheme bring them into sharp relief. In moving forward, local stakeholders need to take care and action to steward and bring into being the future people want. Stakeholder interviews revealed mixed perspectives on this future: one pointed to what they described as "stubbornness in thinking about what constitutes social interaction", which diminished the possibilities of digital technology. Another said "the need to rely on technology for basic interaction is depressing". A key aspect of the pilot seems to be the desire to help people *live independently*. Putting an emphasis on *living* rather than *independence* means emphasising human needs over the functional ability to survive alone (not that anyone interviewed as part of the evaluation expressed this as an acceptable outcome).

➔ **Learning point 5:** Care should be taken to deploy technology in a way that *augments* and supports social connection and support, rather than in ways that replace it.

[9] See https://opera-care.co.uk/blog/pepper-the-robot-joins-essex-social-care-team

[10] https://www.newstatesman.com/science-tech/technology/2019/08/social-care-robots-privatise-loneliness-and-erode-pleasure-being

To facilitate this, capacity needs to be built in social care institutions and the social care and community development workforce so that local service providers and organisations can better integrate the potential of digital technology into their care and support planning and provision.

Ageing

In different ways, participants, project workers, and stakeholders all spoke of the challenge of overcoming the 'resistance' of older people to engage with digital technology. While some of this resistance was connected to the fear of engaging with something new and unfamiliar, and in some cases around the process of learning itself (particularly in groups), it is important to reflect on the why this technology is being piloted. The project aimed to engage older people and to equip them with digital technology to support them to live independently. In doing so, the project is really about ageing, and part of the 'resistance' seems connected to the symbolic meaning of the technology – that people cannot do things they previously could do for themselves, and the need to prepare for and guard against health emergencies. This journey of adjustment can involve confronting significant losses, changes in identity and self-worth, and mortality. One of the Living Smart Home hosts reflected on her concern that assistive digital technologies could bring anxieties into consciousness that had previously been absent or avoided. Helping someone to integrate digital technology in this context, therefore requires empathy, emotional and psychological understanding and support, and feeling comfortable and equipped to talk about issues like ageing and loneliness. The project workers in this pilot all had these skills and this was part of the foundation of its success. Alongside this, a key message from interviewees is to position digital technology as something that empowers and enables independence, choice and control, rather than taking it away. Project workers and Digital Buddies also noticed the difficult space they can occupy when there are tensions between what an individual wants and is willing to adopt, and what family members want. While it is important to engage family and wider parties (such as carers) in conversations about how digital technologies can help, the focus should remain on being person-centred.

➔ **Learning point 6:** Recognise that a conversation about assistive digital technology is also a conversation about ageing, and develop capacity to understand and support ageing and loneliness among relevant people and organisations.

Participation

The project aimed to engage older people and people with disabilities with digital technology. The range of survey respondents and case studies shows that despite some early difficulties in recruitment, the project reached its target audience. Digital Learners were aged from 55 into their eighties, and 40% reported long-term health conditions and/or disabilities. The evaluation also showed the importance of a flexible format for digital learning: some learners reported that they would not have engaged without the possibility of one to one sessions and home visits. Living Smart Home hosts reached into their nineties, and described a wide range of disabilities and long-term health conditions that impacted on their daily lives.

One stakeholder highlighted the way in which the pilot reached 'active seniors': "people who don't need formal social care and who can lead busy lives, but who perhaps need some help to do that". Digital technologies can augment the resources 'active seniors' have and help to maintain their full lives, and contribute to the prevention or delay of service use.

Some stakeholders suggested that while the project has done well to achieve its targets, the challenge to engage those most in need remains significant. There was a sense that "older people who need technology the most are the least likely to ask for help" and are often socially isolated and

disconnected from community based support. Interviewees also reflected their sense that "engaging professionals is very hard – they are too busy and probably only 5-10% are interested in integrating technology into their work".

Relatedly, some interviewees emphasised that this was a pilot project and reflected on this as part of a potential wider model of change: "the project targeted older people and people with disabilities who are not using and not confident with digital technologies, but we need to think about this project as 'activation' rather than inclusion (but reaching excluded people if you can). Work with the technologically curious and create early adopters (Digital Boomers) and grow out from there. Local work on activation is generally missing, but this project is a great example. It's tapped into the latent appetite for technology among older people and learnt how to get people over the threshold".

Managing participation was also a challenge at times for the project. The number of Digital Learners attending sessions could often fluctuate, and the long-term health conditions experienced by Living Smart Home hosts sometimes meant that Homes were 'offline' to the project for periods of time. This means that there has to be sufficient capacity in the system to be able to tolerate these fluctuations and maintain an active presence in a local area.

A specific form of participation that is perhaps worth drawing attention to is the role of music. All Living Smart Home hosts used their technology (Alexas) to access and play music, and enjoyed and benefitted from this usage. Some Digital Learners similarly described a renewed relationship with music that was made possible by their digital technology. Music might therefore be seen as a potential hook to engage people in digital technology, with the emphasis being on music (personal interests and enjoying life) rather than the technology itself. There may also be other common interests and hooks that can facilitate digital engagement. More broadly, several stakeholders emphasised the need to focus on the person rather than the technology, particularly for those furthest from digital inclusion, with one interviewee suggesting changing the name of Living Smart Homes to 'Living Smart at Home' to underline this focus.

➔ **Learning point 7:** Activate existing and latent interest in digital technology, and grow and maintain a focus on inclusion through person-centred engagement and support.

Communications

These last points prompt a discussion of how the project has been communicated to local citizens, professionals and organisations across West Essex. The project team employed a diverse communications strategy to encourage participation in the pilot, as described in Section 2 of this report. Beyond the commentary provided in that section, several points were discussed in stakeholder and project team conversations. Firstly, the use of experiential learning to demonstrate the potential of digital technology was described as "innovative" and "key to turning people on". Being able to see technology in action in Living Smart Homes, speak to hosts, and experiment with talking to an Alexa or seeing a video doorbell in action brought the technology to life and "made it real for people". Digital Learners had the opportunity to safely experiment with their technology and to experience other learners' technology too.

➔ **Learning point 8:** Continue with an experiential approach as part of digital inclusion work.

The strategy to create spaces and opportunities for people to explore technology was also extended online. The project filmed a number of short videos showing the experience of Living Smart Home hosts and pushed them out on a range of platforms. The main channel for this promotion was Facebook: the project was seeking to reach children of older people and this target group of people

aged 40 plus are high frequency users of Facebook. These powerful first person video stories received some 20,000 views on Facebook, raising significant awareness of the project and the role of digital technology in supporting independent living. In addition, videos placed on Vimeo and YouTube and pushed to local stakeholders received modest views. Some interviewees made the point that given the key target audience are those people who are not online or who have low experience or interest in technology (and who are therefore unlikely to access these videos), the project's diverse methods of engaging local people were important. In terms of offline promotion, project workers reported that few people came into the initiative through flyers that were distributed locally. What seems to have been effective is the role of the individual project workers as communication tools: in working through their local networks, being able to build trusting relationships, and providing reassurance, they have helped people into the project who would otherwise have not engaged. This points to the possibility of building other 'digital inclusion champions' (perhaps drawing on the network of Digital Buddies) who can work in their networks, organisations and communities to start the journey of engagement and create a bridge to digital inclusion.

➔ **Learning point 9:** Maintain a diverse communications strategy that uses appropriate channels and that reflects where this agenda is for different audiences, and include building champions and trusted word of mouth networks.

A further aspect around communications concerns the experience of one Living Smart Home host who reflected that her participation in promotional videos had sometimes left her feeling vulnerable in thinking that she may be targeted by people who perceived that her home was full of expensive technology. The project team took care to gain consent from all participants involved in helping to promote the initiative, and to explore participants' concerns. This example highlights the importance of the project's informed consent processes for participants, covering all aspects of their involvement. Informed consent means permission granted in the knowledge of possible consequences and taking care to ensure participants understand the (potential) consequences of all aspects of their engagement, particularly in cases where individuals are motivated by a strong desire to help and 'feel useful'.

➔ **Learning point 10:** While individual stories are powerful communication tools that can encourage others to participate, there is a need to pay careful attention to gaining informed consent that is based on a full understanding of their involvement. Informed consent should be sought at each new form of participation in communication tools.

Sustainability

On the digital learning side of the project, many digital learners valued the social interaction that came through their participation and the case studies illustrated the friendly and supportive relationships that evolved through group learning sessions. Many Digital Learners reported that they thought they had not had enough sessions, and the case studies showed the desire for their learning to continue, with some expressing a willingness to pay or make donations to cover the costs of coordinating volunteers and venue hire (if applicable, as some sessions ran in free to use public places). It may be the case that clusters of Digital Learners can be supported to become self-organised, self-sustaining digital learning groups, supported by Digital Buddies where available. Borrowing from the wellbeing sector, the Talk for Health programme establishes small local networks of people who need support with their mental wellbeing, and trains and facilitates them to

become a self-sustaining weekly group, allowing the coordinator to drop away once the necessary capacity is established.[11] This is a model that might be replicated for Digital Learners.

➔ **Learning point 11:** Explore building self-sustaining digital learning capacity with light touch coordination and support.

Several of the stakeholders interviewed raised the question of how to fund digital technology and the means to encourage its take up. Living Smart Home case studies illustrated the challenge of investing in sustaining digital technology: hosts on low household incomes reported that they would struggle to maintain ongoing costs of their technology (including high speed broadband) after the project subsidy period ended, while others would decide what to keep based on evaluating the perceived cost-benefit of their technology. While the project has paid careful attention to inclusion issues (for example by budgeting for support for carers, adapting technology to fit the needs of disabled users, providing regular bespoke support for participants, and employing a range of communications), the challenge of financing digital technology remains. An issue for time-limited projects is the need to ensure that participants understand the costs of maintaining/running digital technologies after project funding expires, otherwise there is a risk that technologies are integrated and a reliance or dependency develops that cannot be sustained. While one Living Smart Home host suggested, somewhat tongue in cheek, that "Alexas should come on the NHS for over 75s!" it prompts thinking about how digital technology could become part of the resources available through care and support planning.

➔ **Learning point 12:** Explore the potential of personal budgets and direct payments to fund assistive digital technology, and capacity build organisations and staff carrying out health and social care needs assessments in the potential of digital technology.

One interviewee suggested that an accessible brochure be produced that simply describes how different digital technologies can solve or alleviate particular needs. Alcove, one of the technology partners in the project, has similar brochures and local services and third sector organisations partners might work with technology companies to disseminate the possibilities of technology for assisted living. One interviewee expressed the view that there is not a well-established direct market for assistive technology (meaning it is not directly purchased by end users from technology companies), and fostering this market may help those who can self-fund to acquire technology to support their independent living.

Several interviewees highlighted the potential of data to help them work more effectively and efficiently on digital inclusion. One district cited data that indicated some 20,000 local people had never been online or had not been online in the last three months, indicating the scale of need and the challenge in meeting it. Local third sector organisations and councils were keen to try and sustain and deploy the capacity of Digital Buddies developed by the project, and to create additional Buddies within their own organisations and partner organisations. To facilitate this, better data on who was digitally disadvantaged would be helpful: "we need something like an Experian Mosaic profile to help us understand who we should work with and how". Examples of such data exist: Calderdale Metropolitan Borough Council worked with their own data from 2019 and Experian Mosaic Public Sector Profiler data to produce segmented profiles of their local population that described socio-economic characteristics and digital preferences.[12] Data-driven approaches might

[11] See https://www.talkforhealth.co.uk

[12] See https://data.gov.uk/dataset/e1bfde6c-e43b-4699-8c85-625c532b505b/digital-inclusion-profiles for more information.

also include working with health data to identify and engage people with specific needs and/or health conditions for which digital technology can provide support.

➔ **Learning point 13:** Explore sourcing and developing data to guide digital inclusion work.

The consensus across project participants, the delivery team, and wider stakeholders is that digital skills and inclusion are essential skills for active citizenship and daily living, and there is a growing sense and acceptance that digital is a necessary part of the future service design and independent living. The project has highlighted the ways in which these future possibilities might be realised, and has emphasised the importance of trusted, reassuring personal relationships in this digitally-enhanced future.