

SMARTER HOMES FOR INDEPENDENT LIVING

PUTTING PEOPLE
IN CONTROL OF
THEIR LIVES



April 2022

This report was written by Clive Gilbert,
Policy Manager for Assistive Technology
at Policy Connect.

Policy Connect
7-14 Great Dover Street
London
SE1 4YR

www.policyconnect.org.uk

Contents

Foreword from the Chair of the Smart Homes and Independent Living Commission	4
Executive Summary	5
Recommendations	6
Introduction	11
Commissioning Services	14
Shaping Local Markets	20
Disabled Facilities Grant	24
Consumer Market	27
Skills and Awareness	33
Methodology	38

Foreword from the Chair of the Smart Homes and Independent Living Commission

Few world events have demonstrated the power of technology in the 21st century more starkly than the Covid-19 pandemic that has formed the backdrop to our Commission. By the time of our first evidence session in May 2021, the purpose of our work – to provide recommendations to government and industry on how smart home products and services can help disabled and older people lead healthier and more independent lives – had only grown in importance.

In the era of social distancing, everything from businesses and health care systems to friendships came to hinge on digital products and services that have evolved from obscurity over the past twenty years to become indispensable domestic fixtures. From the earliest months of the pandemic, the social implications of our newly hyper-digitised society were clear. People who did not have the means to get online were at an immense disadvantage. Disabled and older people – who were already disproportionately at risk of digital exclusion – were among the most disadvantaged of all.

This fact struck at the core of why our Commission was first established just before the crisis began. Earlier evidence collected by the All-Party Parliamentary Group for Assistive Technology showed that many disabled and older people had not benefited from the dramatic growth of the consumer smart home market in recent years. This was found to be due to a combination of a lack of appropriate support and a technology sector that has consistently failed to respond to their needs¹.

This report outlines tangible actions that government and industry can take to support independent living and improve the quality of life of disabled and older people and their families, while also reducing financial pressures on the NHS and the social care system. As well as providing benefits for individuals and their families, this kind of investment has significant payback for public services.

Our key recommendation is for the government to create an Independent Living Technology Grant to boost access to life-enhancing technologies. The grant would overcome the inflexibilities of existing public funding sources and help disabled and older people invest in, and acquire, consumer products as well as receive any support they might need to use and maintain them.

Last year's Adult Social Care Reform White Paper shone a bright light on technology and independent living, pledging an initial £150 million to foster innovation. The White Paper acknowledged that 'it needs to be as easy as possible for people to purchase and use the technology that would best support their goals².'

The lessons of the pandemic and the vision for adult social care set out in the White Paper present an opportunity for ministers to ride the current wave of social and technological change and renew the government's commitment to protect disabled and older people's right to live the lives they deserve and improve their quality of life.

Our proposals set out how they can seize it.

We would like to thank all the disabled and older people, carers, health and social care practitioners, technology companies and representative organisations that have provided evidence to our Commission. We would also like to thank Bournemouth University and Coventry University for their sponsorship of the Commission, without which this work would not have been possible.



Councillor
Sir Paul Carter CBE
Kent County Council

¹ <https://www.policyconnect.org.uk/news/smart-homes-and-future-social-care-roundtable>

² <https://www.gov.uk/government/publications/people-at-the-heart-of-care-adult-social-care-reform-white-paper>

Executive Summary

The purpose of this report is to provide recommendations to government, local authorities, the health and social care sector and technology companies on how the country can take advantage of substantial advances in smart homes and related technologies so that disabled and older people can lead more independent and fulfilling lives.

Powered by artificial intelligence, big data, robotics and the Internet of Things, smart devices promise to give disabled and older people unprecedented control over their domestic environments. New technologies have the potential not just to improve the quality of care and support but also to make it easier for people to pursue their preferred lifestyles, keep up with their family and friends, be entertained and participate in education and work.

However, our Commission has found that decision makers both in and outside government are failing to grasp the opportunities presented by the technological breakthroughs of recent decades.

- The health and social care system has been slow to adopt innovations and tends to view technology as a way of managing people's care needs – overlooking its capacity to give people greater agency, choice and control.
- There are low levels of awareness among both health and social care staff – from commissioners to GPs and social workers – and disabled and older people and their families of how technology can support individuals' independence, health and social wellbeing.
- Public commissioning and procurement processes are hampered by fragmented funding, a shortage of high-quality evidence, and a lack of involvement of older and disabled people in decision making.
- Technology developers often weigh the clinical and operational needs of health and social care professionals and organisations over the actual needs and wishes of disabled and older people, resulting in products that don't meet people's real-world requirements.
- Innovation in the independent living technology sector is being constrained by poorly targeted investment, a dearth of market intelligence and patchy digital infrastructure across the country.
- There is an acute need for a framework of ethical regulation, standards and training for the care and technology sectors to protect disabled and older people's rights as smart technology becomes more widespread.

These findings are widely recognised in the health and social care sector and beyond. However, resolving the problems highlighted by this report will require action across government and industry – reforming how social care is commissioned, reshaping consumer markets, unlocking technological innovation and boosting awareness of independent living technology across society. This report sets out an action plan to achieve these objectives.

Recommendations

Commissioning services and shaping local markets

Findings: Local authorities and the NHS lack ambition and vision in their commissioning of technology to go into peoples' homes, for example, aiming to prevent the worse outcomes of falls in the home rather than taking advantage of the full benefits of technology. A better approach would be to provide a more holistic approach to empower people to live independently (controlling their environment, supporting functional memory and cognition, accessing services such as GP appointments, staying connected to friends and family, for example) and healthily (including by tackling mental health problems caused by social isolation, preventing avoidable accidents around the home, and detecting causes of poor health early on). There is still too much emphasis on a medical model of 'doing technology to people' and using technology to replace the role of carers rather than providing people with technology for their own use and helping to make more time for human interaction.

Recommendation 1:

National and local government should reform the commissioning of technology to enshrine the principles of independent living at the heart of health and social care policy and practice. We recommend that:

(a) The Department for Health and Social Care should:

- (i) Give Integrated Care Partnerships and Health and Wellbeing Boards a legal duty to account for how local services improve access to independent living technologies. Local and regional policy makers should be required to specify how provision will support independent living and digital inclusion in Joint Strategic Needs Assessments, joint health and wellbeing strategies and aligned commissioning plans (including in health inequality plans), with reference to good practice across the country and internationally.
- (ii) Ensure that the NHS is fully integrated into independent living technology commissioning, including by expanding the role of NHS Environmental Control Hubs to support local services, and by taking advantage of social prescribing to connect people to appropriate technology services through primary care networks and GP practices, playing to the strengths of the third sector.
- (iii) Incentivise local authorities and health agencies to set up holistic independent living technology services across localities and regions by establishing a long-term Independent Living Technology Service Fund.
- (iv) Establish a Code of Practice to require decision makers to maximise choice and control for disabled and older people. The Code should be accompanied by good practice examples to show how this can be achieved through commissioning, procurement and assessment processes and the appointment of a national network of champions comprising practitioners and service users to share advice and raise awareness.

(b) Local authorities should:

- (i) Establish adult social care co-production groups consisting of disabled and older people, carers, their representative organisations and technology experts to oversee the local delivery of the independent living technology.
- (ii) Ensure adult social care services contracts have an independent living chapter setting out how independent living will be supported, including by incorporating technology and aids.

(c) To support the implementation of Recommendation 1(b)(i):

- (i) The Care Quality Commission should develop guidance on co-production in local authority adult social services departments and social care providers and incorporate it into the key lines of enquiry used to guide adult social care inspections.
- (ii) In its update of the Adult Social Care Outcomes Framework (ASCOF) and the Personal Social Services Adult Social Care Survey (ASCS), the Department for Health and Social Care should include digital inclusion and access to technology. These changes should be aligned with the vision for a digitally enabled social care system outlined in the Adult Social Care Reform White Paper's ten-year vision.

Disabled Facilities Grant

Findings: The Disabled Facilities Grant plays a valuable role in funding traditional independent living aids such as handrails and stairlifts. Yet the scheme does not typically fund newer product types, such as smart home technologies – even as these are shown to be cost-effective aids to enhance people’s independent enjoyment of their home. Some recipients who could benefit from technology funded by their grant do not take advantage of this opportunity – often because technology is not fully explored as part of their assessment due to assessors’ lack of awareness. Grants should be used more regularly to enable recipients to purchase technology to make their home accessible. Key examples are hardware (including Internet of Things products – smart light bulbs, for example – that can be controlled remotely via a hub such as Google Home) and physical changes to the home to enable the use of this technology (for example, cabling to enable a good internet signal in all rooms).

Recommendation 2:

ACCEPTED

The Government should ensure the new guidance on the Disabled Facilities Grant explicitly includes technology among the eligible uses for the grant, provides advice on good practice and requires assessors to work with clients to explore technology needs. (See also Recommendation 5 on upskilling and awareness, including assessors).

We briefed officials with the emerging findings and recommendations from this Commission. Following this, the government has now published new guidance on the Disabled Facilities Grant, setting out in chapter seven guidance on digital technology, as recommended here by this Commission. We would like to commend the government on this action.

Independent Living Technology Grant

Findings: The structure of the Disabled Facilities Grant provides one-off capital grants and is less suited to funding relatively inexpensive standalone products or on-going costs. This limits the ability of the scheme to stimulate a consumer market for low-cost technology.

Recommendation 3:

Government should launch a national pilot of a new Independent Living Technology Grant that would provide funding for consumers to buy low-cost technology, including those that are paid for via a subscription model – such as software packages or maintenance services that must be renewed on an annual basis.

Consumer Market

Findings: Independent living technology suppliers tend to view commissioners and other institutional buyers as their main customers. As such, the market does not always function in ways that suit the needs of consumers: disabled and older people, and their families and carers. People who would otherwise be able to afford to buy their own technology are often prevented from doing so by concerns about whether products are safe, reliable, easy to use, private and secure. For their part, innovators can struggle to understand how their product might be useful for disabled and older people. To compound this, there is a lack of startup funding for new entrants, creating a difficult path to market for innovators, with many products never reaching commercial maturity. These factors mean that most consumers have little choice but to buy from well-known, established brands.

Recommendation 4:

Government should introduce regulations and standards around the independent living sector and introduce practical support for technology innovation through its Innovation Mission programme. In particular:

- (a) The Centre for Data Ethics and Innovation should produce a set of ethical standards to regulate the use of technology in social care services and to support independent living.
- (b) The National Cyber Security Centre should develop a set of data security and privacy standards to regulate the use of technology in social care services and to support independent living.
- (c) The Department for Levelling Up, Housing and Communities should develop and embed in relevant building regulations a minimum smart home-ready specification for digital infrastructure for all new housing, starting with the forthcoming update of Part M of the housing regulations on accessible dwellings.
- (d) The Department for Business, Energy and Industrial Strategy should implement its commitment to promote innovation in assistive technology by developing (with UK Research and Innovation) an Independent Living Technology Innovation Mission, aimed at ensuring and accelerating the arrival of new technologies for the home on the market.

Skills and Awareness

Findings: Levels of awareness of independent living technology are low among members of the public as well as professionals. Disabled and older people often do not know about technologies that could be useful to them until they reach a point of crisis in their lives. Health and social care professionals – particularly those working on the frontline, including GPs and multidisciplinary teams – do not receive enough education, training and professional development opportunities in assistive technology. There are too few career paths for professionals who want to become independent living technology specialists. Finally, the mainstream technology industry is not attuned to the requirements of disabled and older people and often assumes it is too difficult to develop products for this significant and growing segment of the consumer market.

Recommendation 5:

The government should commission the health and social care sector to upskill and raise awareness of technology solutions. It should:

- (a) Direct the proposed Centre for Assistive and Accessible Technology to:
 - (i) Deliver a public awareness campaign for technology and independent living designed to boost the consumer market for these products and services.
 - (ii) Create a dedicated career pathway for professionals who wish to specialise in assistive technology assessment, provision and continuing support for disabled and older people and their informal carers, and training, advice and consultancy for the wider workforce.
- (b) Direct NHSX to:
 - (i) Commission a panel of training and professional bodies, representative organisations from the housing, health, social care and technology sectors, the Care Quality Commission and disabled and older people to develop a comprehensive independent living technology education, training and standards framework.
 - (ii) Establish a national independent living good-practice-sharing network for the health and social care sector (including opportunities for hands-on demonstrations), focusing on senior leaders to help drive innovation.
 - (iii) Develop a national community of practice for professionals involved in conducting assistive technology assessments, including as social workers, occupational therapists, care workers, healthcare clinicians, and those taking part in trusted assessor schemes.
 - (iv) Commission a peer mentoring programme to train disabled and older people to help others adopt technologies that will help them to live independently.

Introduction

What is a smart home?

The term 'smart home' refers to the application of interconnected electronic products, systems and services to living spaces. These include products such as the Google Home and Amazon Alexa that enable users to adjust the thermostat, change the lighting and control their entertainment systems using a smart phone app or by issuing voice commands³. The key features of most smart home environments are networked appliances, central control and the automation of housing technology and electronic devices⁴.

Advances in artificial intelligence and robotics promise further evolutions in the smart home⁵ by making technologies ever more intuitive and adaptable to individual lifestyles, wants and needs. These range from vacuum cleaners that can roam the house picking up debris to the emergence of humanoid robotics capable of assisting with some aspects of personal care.

Smart home devices are increasingly important independent living technologies

For decades, independent living has been used as an umbrella term by the disability rights movement to describe a range of conditions that must be met for disabled people to have as much control as possible over their lives (See Box).

While the disability rights movement calls for the whole of society to be made accessible, independence at home is often viewed as foundational to independence in other areas.

The right to live independently

The twelve pillars of independent living are⁶:

1. Appropriate and accessible information
2. An adequate income
3. Appropriate and accessible health and social care provisions
4. A fully accessible transport system
5. Full access to the environment
6. Adequate provision of technical aids and equipment
7. Availability of accessible and adapted housing
8. Adequate provision of personal assistance
9. Availability of inclusive education and training
10. Equal opportunities for employment
11. Availability of independent advocacy and self-advocacy
12. Availability of peer counselling

Governments have gradually been persuaded to support disabled people to determine where and how they live. The UK is a signatory to the United Nations Convention on the Rights of Persons with Disabilities⁷, which enshrines the right of disabled people to live independently, including the ability to choose whether to access support in their own home or in a care home.

³ <https://www.mdpi.com/2227-9032/7/1/49>

⁴ <https://www.intechopen.com/chapters/65877>

⁵ <https://www.mdpi.com/1660-4601/16/19/3525>

⁶ <https://www.disabilityrightsuk.org/independent-living-0>

⁷ <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html>

Despite some progress in recent decades, the adult social care system is currently unable to uphold the right to independent living. An Equality and Human Rights Commission (EHRC) inquiry into housing for disabled people in Great Britain published in 2018 concluded that the country has a chronic shortage of accessible homes⁸. A recent paper by the EHRC listed several areas in which disabled and older people are not being provided with the same choice, control and opportunities as other people. It highlighted the reductions in government spending on care and support since 2010 despite rising demand for services and the closure of the Independent Living Fund in 2015. These developments have left many without vital support⁹.

Technology has always been recognised as a powerful tool for independent living. However, the emergence of smart home technology together with advances in related areas such as artificial intelligence and robotics have given rise to new opportunities for disabled and older people who wish to have more control over their domestic environments.

Smart technologies can be used to support independent living in a variety of ways:

- They can give people more **control over their environment**, for example, by enabling people with reduced mobility to activate the lighting, curtains, heating and other fixtures and appliances through a single accessible device.
- They can help people to remain **socially engaged and connected to their communities**¹⁰ through news websites, entertainment streaming services and video conferencing.
- They can **support the provision of care services** through, for example, the use of telemonitoring devices that can detect potentially dangerous situations and allow users to call for help if necessary, and by assisting people to carry out personal care tasks unaided.

In addition to products that have already arrived on the commercial market, there is a range of emerging technologies that build on recent progress in artificial intelligence, robotics and the Internet of Things, which have the potential to transform independent living.

- In Spain the AmbienNet project has proposed an indoor navigation system for older people to help them easily move around the home and perform everyday tasks¹¹.
- A consortium led by the Bath-based charity Designability has built a prototype robot called JUVA that helps with personal care, preparing meals, dressing and undressing, and a wide range of other tasks so people can continue to live independently as they age¹².
- Researchers in Canada have explored the use of artificial intelligence to provide advice and recommendations to help people with cognitive impairments – such as Alzheimer’s disease – to undertake everyday activities¹³.

⁸ <https://www.equalityhumanrights.com/en/housing-and-disabled-people-britain%E2%80%99s-hidden-crisis>

⁹ <https://www.equalityhumanrights.com/en/publication-download/strengthening-right-independent-living>

¹⁰ <https://shura.shu.ac.uk/19307/1/10694188.pdf>

¹¹ <https://www.rtc.us.es/e-health/semi-auto-navigation/>

¹² <https://www.shadowrobot.com/our-sincere-thanks-to-our-partners-as-our-chiron-project-comes-to-an-end/>

¹³ <https://dl.acm.org/doi/10.1145/2769493.2769530>

Survey responses: How do you use home technology to help you enjoy greater independence at home?

I have macular degeneration and extreme sight loss. I use devices such as a robot vacuum cleaner, water heater and signal device to enable pouring hot water, Amazon Echo does lots of things.

Audrey B, aged 65 years and over

Control my central heating, my TV Player, to listen to radio and podcasts and submit gas and electricity meter readings.

Ken, aged 51-64

Emergency call system linked to family, Amazon devices to control lighting and give reminders and prompts, chair raisers and handrails. Half steps, night lights.

Pat, aged 65 years and over

Source: Smart Homes and Independent Living Commission Survey¹⁴

However, many disabled and older people do not have access to the technologies they need to support their independence. In this report, the Commission sets out the barriers to independent living technology at home and presents a range of practical recommendations that government, the health and social care sector and the technology industry can put into action to realise fully the transformative potential of independent living technology for disabled and older people.

Good practice case study:

The Disabilities Trust's ConnectAbility Project

The Disabilities Trust is a national charity that provides community-based and residential support to disabled adults. It has launched a two-year project called ConnectAbility to explore the impact of smart assistants on the day-to-day lives of the people who use their services. So far, two services have taken part in the programme: Shinewater Court in Eastbourne and Jane Percy House in Cramlington, Northumberland.

Smart assistants have been installed in common areas and some people were provided with their own devices. Early evaluations of ConnectAbility have found that participants feel more independent, calmer, better organised and less reliant on staff. The smart assistants are popular for listening to music, weather forecasts, playing games, setting reminders, finding out about people's interests, and supporting morning and evening routines.

Toni, 36, who has cerebral palsy and lives at Jane Percy House, uses Alexa to play games, listen to music and control her TV and lights from her bed, operating the device using her smartphone or voice commands. 'The other night I could not sleep. I was able to put the radio on myself', Toni says. 'It's amazing. I can do more myself now. It has lifted my mood and opened another door for me. I feel like I am living in a totally different world.'

Source: The Disabilities Trust¹⁵

¹⁴ Smart Homes and Independent Living Commission Survey, <https://www.policyconnect.org.uk/media/3260>

¹⁵ Based on a case study supplied by The Disabilities Trust

Commissioning Services

Public services are one of the main routes through which people encounter independent living technology. The nature and design of these services – including the national and local policy priorities and resources that underpin them – influence many people’s perspective of tech products and services.

Local authorities and the NHS shape adult social care services through their commissioning activities. Social care commissioning involves activities such as identifying the needs of the local population, planning and procuring services to meet those needs and establishing mechanisms to help monitor and evaluate the quality of provision.

This chapter sets out how barriers to the effective commissioning of independent living technology in local health and social care services can be overcome.

Technology provision in social care is often passive and inflexible

Commissioning is most effective when decision makers start by determining what outcomes they are aiming to achieve before they begin to consider how technology can be used in a service that supports these aims¹⁶.

A recent review of the adult social care market in England by the National Audit Office¹⁷ concludes that despite rising demand for care of an increasingly complex nature, short-term funding has undermined long-term planning, innovation, and investment in care.

The review indicates that central government is inadequately prepared for the increasing demand on the social care system. It found that the DHSC is ‘unable to demonstrate that it has adapted demand and cost projections for essential changes in care delivery’¹⁸, such as the expected increase in care provision in the home, and the likely innovations in medical treatment and preventative care. The National Audit Office has called for a whole-system, cross-government approach to care, with better integration at a local level to support a person-centred and preventative model.

Assistive technology is often seen by health and social care professionals as a long-term intervention for people with permanent care and support needs. But technology can also help people achieve an earlier discharge from hospital and recover from illness or injury more swiftly¹⁹.

The existing narrow approach to technology provision is also reflected in the way commissioners and service providers often assess people’s technology needs. When prescribing assistive technology, they often adopt an overly generic category-based analysis of an individual’s requirements that centres more on the types of products available rather than matching technology to the person’s situational needs and abilities. Adopting the latter approach encourages decision makers to consider a wider range of technologies when procuring products and often leads to more creative and personalised services²⁰.

The Association of Directors of Adult Social Services (ADASS) and the TEC Services Association (TSA) report published in November 2020 found that better access to technology could improve joint working between health, social care and housing and offer more preventative, responsive support, shaped around the individual²¹.

¹⁶ CIRCLE, University of Sheffield

¹⁷ <https://www.nao.org.uk/wp-content/uploads/2021/03/The-adult-social-care-market-in-England.pdf>

¹⁸ Ibid

¹⁹ Evidence session 1, <https://www.policyconnect.org.uk/media/3256>

²⁰ Evidence session 1

²¹ <https://www.tsa-voice.org.uk/campaigns/tsa-and-adass-launch/>

The need for a more personalised approach

Evidence gathered by our Commission suggests that decision makers in central and local government tend not to take a personalised approach to technology and care. For example, we heard reports of people becoming frustrated when trying to use direct payments from their local authority to fund the technology they need. They described having to persuade local authorities that such items were permitted under the rules to be purchased using local authority funds in this way²².

Most local authorities are aware of the potential of technology to improve the way care is delivered, particularly in light of the shift to online services during the Covid-19 pandemic. However, independent living and technology is rarely discussed in terms of beneficial life experiences and outcomes for the users themselves. For example, discussions about how integrated care systems could support better technology use across health and social care services has so far focused on administrative activities such as creating shared care records. The potential for more integrated health and social care services to improve access to assistive technology for the purpose of helping people to live independently is often overlooked at strategic levels²³.

This results in less personalised provision in frontline services. A survey of local authority telecare service managers²⁴ between November 2016 and January 2017 found that fewer than half viewed telecare as a means of enabling social contact and communication, and just 28% reported that it could help people maintain hobbies and enjoy their leisure time in ways they found meaningful. This contrasts with over 80% who agreed that telecare was key to delaying and reducing the need for care as well as meeting safeguarding duties.

Local leaders need higher quality evidence to guide decision making

Implementing technology in the context of social care is a complex task, and commissioners and service managers do not have sufficient support to ensure technology is deployed appropriately as part of wider care packages. Christian Geisselmann from AdaptEco has told our Commission that ‘many commissioners are not familiar with the technology or what technology is available²⁵.

Although there is a large body of case studies about how technology can be used to support care, particularly in relation to telecare products and services, much of this information is produced by suppliers rather than independent sources. This can make it difficult for decision makers to assess the accuracy of claims made about the outcomes of specific product usage²⁶. It can also skew the reporting of the results of programmes as only successes are publicised, leading local authorities to attempt innovations that have already been tested and perhaps found wanting elsewhere, potentially wasting valuable resources and limiting the sharing of good and less good practice²⁷.

To improve the quality of independent living provision, commissioners and service managers across the housing, health and social care sectors must be supported to understand what independent living technology is. The range of specialist and mainstream technologies that can support disabled and older people to live more independently is constantly growing and changing as technologies and organisational models evolve²⁸.

²² CIRCLE, University of Sheffield

²³ Evidence session 1

²⁴ https://kclpure.kcl.ac.uk/portal/files/87498580/Utopia_project_report.pdf

²⁵ AdaptEco

²⁶ Chris Brothwood

²⁷ CIRCLE, University of Sheffield

²⁸ Ibid

Senior leaders require targeted education, training and continuing professional development opportunities to make sure they have the necessary level of knowledge and can sustain it throughout their careers^{29,30,31,32,33}. Leaders also need to be supported by their Directors of Adult Social Care to prioritise independent living across social care provision by being provided with suitable funding and resources. Claire Collett from Dorset County Council notes that promoting more occupational therapists to senior decision-making roles would broaden the range of experience and expertise on Health and Wellbeing Boards and other important bodies³⁴.

Commissioners may benefit from working with partners with the necessary technological expertise to help guide the transition to new products, services and systems³⁵. Early engagement with technology providers who put disabled and older people at the heart of the commissioning process can make it easier to identify opportunities to increase people's independence and wellbeing and financial efficiencies³⁶.

Better cross-sector knowledge sharing would also help local authorities transition more smoothly to new types of provision³⁷. For example, the Disabilities Trust has explained that it was difficult to find examples of what other organisations were doing when it started to design new approaches to using smart home devices within its own services. This can make it harder for organisations to identify the most suitable service models, anticipate potential challenges and predict the most likely outcomes³⁸. A national knowledge sharing network overseen by a single organisation would help to coordinate learning across the sector.

Commissioners also need a better understanding of the relationship between service providers across the public, private and third sectors and individuals with care and support needs and their families and extended informal support networks to be able to commission more personalised provision³⁹.

Good practice case study:

The Yorkshire and Humber Academic Health Science Network (AHSN)

The Yorkshire and Humber AHSN has recently established an Assistive Robotics and Intelligent Care Technology Working Group to break down barriers to the adoption of emerging technologies in social care across the region. In the context of rising demand on the social care system, the Working Group brings commissioners, service managers, health care professionals, academics and technology innovators together to help realise the benefits of technological products and services for the people they support.

Academic and industry partners will be invited to present the latest developments in the field, not only from a technological perspective but also by drawing upon insights from social science.

'We have been observing and learning from initial implementations of innovative solutions in other parts of the country (and other parts of the world)' says Aejaz Zahid, Programme Director at the South Yorkshire and Bassetlaw Integrated Care System Innovation Hub. '[We] feel the time is right to explore the feasibility of commissioning such solutions to help improve social care services.

By connecting senior leaders from across the integrated care system, the initiative aims to help coordinate their combined influence and resources to facilitate the development of new models of community-based care.

Source: The Yorkshire and Humber AHSN⁴⁰

²⁹ Smart Homes and Independent Living Commission Call for Evidence response, Beth Moulam, <https://www.policyconnect.org.uk/media/3261>

³⁰ Leonard Cheshire, University of Stirling

³¹ Chris Brothwood

³² Bush & Co

³³ Blind Veterans UK

³⁴ Dorset County Council

³⁵ AdaptEco

³⁶ The Brandon Trust

³⁷ Bush & Co

³⁸ The Disabilities Trust

³⁹ Blind Veterans UK

⁴⁰ Based on interview

Disabled and older people must be actively involved in decision making

Disabled and older people are uniquely positioned to offer insight into the enablers and barriers they face in accessing and using technology. Professor Sally Dibb from Coventry University told our Commission that ‘to drive adoption of assistive technology by individuals it is essential to begin with their needs and aspirations⁴¹. It is therefore vital that disabled and older people are co-producers of any solutions developed for them.

“ **The key is, it needs to be personalised.** ”
 Bournemouth University Dementia Coffee Morning Group Participant ⁴²

Failing to do so risks losing the invaluable contribution disabled and older people make to the management and governance of care and support services. They can help conceive and identify new ways in which technology can be used to produce tangible outcomes for service users. They can also help to challenge established thinking about how services should be designed and delivered⁴³.

Involving disabled and older people more in the development, implementation and monitoring of services would also encourage an outcomes-based approach to commissioning. There should be a move away from measuring the use of services and resources to measuring the outcomes that matter to disabled and older people.

However, achieving true co-production can be challenging. It can be time-consuming and initially expensive to establish systems that adequately engage disabled and older people in organisational governance⁴⁴. The commissioning models of most local authorities which are predominantly based on a set menu of contracted services on the one hand and direct payments or personal budgets on the other can undermine efforts at true co-production within councils⁴⁵.

Co-production requires appropriate investment and must be built into every stage of the commissioning cycle. Staff must also have suitable skills to collaborate effectively with people from different backgrounds and to be able to create tools and working methods to initiate and sustain engagement with people⁴⁶. Organisations often set out to co-produce but end up merely consulting with people instead, sometimes allowing these exercises to be biased by assumptions that have already been built into processes⁴⁷.

Co-production on an individual level must begin at the initial assessment phase and be ongoing. Technology assessments should be holistic and person-centred with the aim of matching the needs and preferences of individuals to suitable products and services. However, this requires assessors to be appropriately trained to empower the user to play an active part in conversations about their support. Assessors also need to have adequate knowledge of the technologies that may fulfil the individual’s requirements and sufficient financial resources and flexibility to purchase and support the use of the right solutions^{48,49}.

Assistive technology researcher Julie Eshleman from Leonard Cheshire Disability and the University of Stirling said that ‘specialist assessments like occupational therapy or speech and language therapy are not always needed, but there is no real other way for care workers to talk about technology or have a conversation which can lead them to some tools to try’⁵⁰. Increasing the number of care workers with trusted assessor training would help more staff engage confidently in such conversations and allow people to receive their technology more quickly.

⁴³ The Disabilities Trust

⁴⁴ Chris Brothwood

⁴⁵ CIRCLE, University of Sheffield

⁴⁶ Coventry University

⁴⁷ The Brandon Trust

⁴⁸ Leonard Cheshire, University of Stirling

⁴⁹ Coventry University

⁵⁰ Leonard Cheshire, University of Stirling

Our Commission was told that a centralised tool for professionals is required to support holistic technology prescription and reduce assessors' workloads. This should be designed to help guide health and social care professionals through conversations with the people they support and provide suggestions for technologies that may be suitable⁵¹.

Pooling funding streams would facilitate a more coordinated approach to independent living technology provision

A lack of strategic coordination at national and local levels hinders innovation in independent living service models around the country. Funding and decision making within local authorities is fragmented between different departments and further undermined by a lack of integration with the healthcare system. This means funding can often only be spent on a narrow range of items depending on which part of the system the money comes from⁵².

In some areas, NHS Clinical Commissioning Groups do not contribute anything to local technology budgets. In two-tier local authorities, administrative boundaries between county councils and district and borough authorities can make it difficult to coordinate differing responsibilities and priorities⁵³.

Referring to the Covid-19 pandemic, Claire Sutton from the National Care Forum told the Commission that 'technology and digital has very much plugged a gap over the past 15 months in particular, but a more strategic, coordinated process is needed at all levels to ensure that the tools better facilitate greater support and independence for individuals rather than just being used as a sticking plaster'⁵⁴.

Pooling budgets is essential to overcome many of these problems⁵⁵. The Better Care Fund, the incoming Integrated Care Systems (ICS), and Section 75 Agreements offer different mechanisms for doing this. In combining funding streams, commissioners should seek to eliminate the fragmentation of assessment and provision of technology services. For example, they should integrate home adaptations teams, technology enabled care services, NHS wheelchair services and other areas of provision. This would encourage prescribers to adopt a holistic approach to technology that takes the entire context of the person's life and their needs into account.

The analogue to digital switchover should be exploited as a watershed moment for independent living technology in health and social care commissioning

Another notable change that will profoundly affect how technology interacts with social care services and independent living is the national transition from analogue telecommunication networks to digital technology, due to be completed in 2025⁵⁶. This means that products that rely on older analogue telephony infrastructure will no longer work, and services will have to switch to newer devices that can connect to broadband networks. The vast majority of local authority telecare provision is still based on analogue technology⁵⁷. As a result, commissioners will be compelled to move to new digital technology enabled care provision to make sure that services continue to function reliably.

⁵¹ Evidence session 2

⁵² Evidence session 1

^{53,54,55} Ibid

⁵⁶ <https://business.bt.com/insights/digital-transformation/uk-pstn-switch-off/>

⁵⁷ https://www.tsa-voice.org.uk/downloads/content_from_old_site/tsa301664_whitepaper_oct17_120917_online_version_only.pdf

The digital switchover represents an opportunity as well as a challenge. In the short term, the transition risks significant disruption to critical services across the country. But it will enable local authorities to reconsider the way they employ technology in social care services. Replacing analogue devices with their digital counterparts in the specialist telecare market will be expensive. However, the transition is likely to encourage the use of cheaper, and sometimes more user-friendly, mainstream smart technologies in services^{58,59}. By offering a more diverse range of technology products, services will be better placed to respond to the individual needs of the people they support.

The shift to digital services is also an opportunity to move away from reactive models of technology-enabled care to preventative approaches, allowing local authorities to build a holistic package of care and support services that can evolve as people's needs change⁶⁰.

A key barrier to adopting digital technologies in social care is that neither specialist digital telecare services nor mainstream smart home products fully comply with existing standards frameworks for health and social care. For example, a battery back-up for a digital device may not comply with relevant standards. They also present a range of privacy and data security problems⁶¹.

A second issue that could undermine the potential benefits of the digital shift is the possibility that the new technologies might replicate the closed product ecosystems that are currently a major feature of telecare provision. The next generation of telecare and independent living technology must be built on open and interoperable technology platforms to maximise the choice and flexibility they can offer disabled and older people and their support networks⁶².

Finally, as noted earlier, there is a lack of rigorous evidence on the longer-term financial benefits of technology in health and social care services. Local authorities and healthcare agencies need to be able to justify the cost of preventative services, especially when local authority budgets are constrained, and services are forced to focus on people with the most intensive needs. The latest technological solutions sometimes promise financial savings from preventing people's needs from escalating. But these savings can be difficult to quantify⁶³, and one public organisation will very often only be concerned about savings to its own budgets, rather than to other public budgets. While the joining up of health and social care should help overcome this narrow perspective, the right business case models will need to be developed.

⁵⁸ CIRCLE, University of Sheffield

⁵⁹ AdaptEco

⁶⁰ Ibid

⁶¹ CIRCLE, University of Sheffield

⁶² AdaptEco

⁶³ SparKo TV VRC

Shaping Local Markets

The Care Act 2014 imposed a legal duty on local authorities to work with local partners to create a better local market for care and support (see Box below). However, most local health and social care services are still not working together in the way envisaged by legislation. Our Commission found that the lack of local strategic leadership is resulting in missed opportunities to improve access to independent living technology and often erects additional barriers.

The public sector wields significant influence over the independent living technology market. It is a vital source of funding and expertise for disabled and older people, often mediating between technology companies and the people who use their products. But there is little public discussion on how this market power should be used and whether it could be deployed differently to improve the quality of products and services.

This chapter will explore how local authorities can use their market-shaping duty to help disabled and older residents take full advantage of technology to live independently.

Public sector commissioners should use their purchasing power to empower disabled and older people as consumers

The public sector has significant market power in the independent living technology market. Our Commission has found that greater clarity around the roles and responsibilities of local authority commissioners and other professionals involved in procuring products and services would encourage the independent living technology market to develop in a way that gives more influence and agency to disabled and older people⁶⁴.

As noted in the previous chapter, despite their significant sway over the market, decision makers in health and care services often lack sufficient technological expertise to weigh their options effectively. This problem is made worse by the fact that many care products are designed only to work with other products within a closed ecosystem. This is familiar from consumer technology, where iPhone features such as iMessage only work with Apple laptops. Such closed ecosystems can constrain the range of devices that can be used by services. This places significant restrictions on decision makers and can discourage local authorities from adopting a genuinely outcome-based approach to provision that matches the needs, aspirations and capabilities of individuals with appropriate products and services⁶⁵.

Instead, people who use care and support services are often provided with generic devices that do not necessarily satisfy their requirements. This not only limits people's experience of technology but can also make it difficult for less-established companies to gain a foothold in the market.

Another source of distortion produced by the public sector is its focus on the relationship between technology and financial savings. This fixes the discussion around technology on operational and bureaucratic processes, rather than on how technology can be used to help people pursue their own goals in life⁶⁶.

A final way in which public sector practices can undermine the independent living technology market is by only advising people who meet the formal criteria for an assessment. For example, our Commission has been told that social services can sometimes be reluctant to issue advice to people without first conducting a detailed assessment of their needs, which can make it harder to access basic information and cause unnecessary delays. This can also deprive private consumers of a source of advice as social workers and occupational therapists might only offer support to people who are eligible for local authority funded care⁶⁷.

⁶⁴ Evidence session 3, <https://www.policyconnect.org.uk/media/3258>

⁶⁵ AdaptEco

⁶⁶ Chris Brothwood

⁶⁷ Evidence session 3

The Care Act's market shaping duty

Under the Care Act 2014, local authorities have a legal market-shaping duty to take proactive steps to ensure that there is a sustainable and diverse market of care and support services that meet the needs of the entire local population, including privately funded provision.

The Care Act's statutory guidance states that market shaping should be a collaborative process working with local partners across the public, private and third sectors as well as people with care and support needs and their families.

Councils have a wide range of tools with which to achieve this. The government expects local authorities to produce market position statements designed to help current and prospective providers understand the present and future needs of their communities. Other examples of local market shaping activities include setting up partnerships with local organisations and groups of individuals to join up different service providers to encourage them to refer clients to each other, or ensure staff are trained to assist disabled and older customers.

Local authorities should discharge their market-shaping duty to help shift the independent living technology market towards the aspirations, needs and requirements of disabled and older people. For example, local authorities could use their market position statements and other public documents to signify how technology providers can meet the needs of the local community. They could also create collaborative forums with local technology providers and retailers to encourage more joined-up support across the public, private and third sectors and share good practice in supporting disabled and older people.

The narrative around the use of technology in care and support should move away from short-term cost saving to the role it can play in supporting people to have greater choice and control over their lives. This might involve embedding independent living sections in service specifications and co-producing services on an individual and organisational level. There should also be better and more timely information and advice for people who may be eligible for local authority-funded care and support.

Some local authorities are already moving towards more flexible forms of assessment and provision that have the potential to foster more open and diverse local markets for care and support. For example, the University of Sheffield has identified the emergence of a 'brokerage' system of support in which an independent service assesses people with care and support needs and provides a bespoke package designed to achieve their desired outcomes. The resulting support was not limited to a list of prescribed providers and could therefore include any technology or service that suited the person's circumstances. While some of these brokerage services directly procure support, others signpost people to community-based services and activities that are not provided by the statutory sector⁶⁸.

⁶⁸ CIRCLE, University of Sheffield

Local authorities have a vital role to play in driving digital inclusion among disabled and older people

Our Commission believes that there are significant underexplored opportunities for local authorities to direct their market-shaping activities towards increasing digital inclusion among disabled and older people. Local authorities are well-placed to support digitally disadvantaged communities to use technology. To be effective, digital inclusion initiatives must provide tailored and accessible information that is relevant to the real-life needs of disabled and older people. Service provision should be designed to help people prepare for changes that may occur during their lives due to becoming disabled, developing health conditions or the ageing process and encourage them to be proactive in finding technology that they may find helpful⁶⁹.

“ There used to be a disabled room in the library [with different aids and equipment], but that’s now gone. ”

Bournemouth University Dementia Coffee Morning Group Participant⁷⁰

Jim Ellam, a former Commissioning Manager and AT Project Lead at Staffordshire County Council, gave evidence to our Commission on the West Midlands AT Home Campaign⁷¹ in 2015 which aimed to help older adults across the region become confident users of assistive technology. The programme shows how market-shaping initiatives can play a pivotal role in helping people who may not usually encounter health and social care services learn how technology can help them retain their independence.

Building on earlier initiatives that had also promoted assistive technology across the West Midlands, the campaign brought together a group of around 80 lead commissioners and providers from across the region to oversee the programme. The campaign targeted people who ‘didn’t want to be dragged into local authorities or the health system to get information and to understand what was available, how it worked, the outcomes it could support and how readily available it was’⁷². It had three main elements⁷³:

- A website offering user case studies, video demonstration guides, and sign-posting to other resources, including the DLF’s helpline and AskSARA self-assessment tool⁷⁴.
- A specially-curated ‘Box of Trix’ – a collection of devices such as a wireless doorbell and remote-control socket plugs that was shared with participating organisations to demonstrate to members of the public.
- The circulation of information leaflets.

Such schemes must also address structural barriers to technology. Professor Lee-Ann Fenge from Bournemouth University noted that it is important that we address digital exclusion ‘in terms of access and affordability of internet access, and also the differences in connectivity across urban and rural communities which might further disadvantage certain communities and their ability to access smart technologies’. Central government should collaborate with local authorities to provide access to broadband and mobile devices and identify people who may need financial assistance to meet the ongoing costs of such technologies such as subscription and maintenance fees^{75,76,77}.

⁶⁹ Evidence session 1

⁷⁰ Bournemouth University Dementia Coffee Morning Group, <https://www.policyconnect.org.uk/media/3259>

⁷¹ <http://www.athome.uk.com>

⁷² Evidence session 3

⁷³ Ibid

⁷⁴ <https://asksara.livingmadeeasy.org.uk/selector>

⁷⁵ The Brandon Trust

⁷⁶ Dorset Council

⁷⁷ Evidence session 1

The voluntary and community sector should be harnessed to strengthen the voices of disabled and older people in the development and delivery of independent living technology provision

Other sources of support for people who are at risk of being digitally excluded that are often overlooked are local businesses and voluntary and community sector organisations. For example, our discussions highlighted a growing trend for handyperson services to help set up and use assistive technology⁷⁸. These organisations should be recognised as instrumental partners in reshaping local care and support markets.

Professor Nigel Harris from the West of England Academic Health Science Network highlighted the ‘important work of voluntary, community and social enterprises and independent groups who do work really closely with end users and can be a really effective voice for them’⁷⁹. Such groups represent a vital source of agency and innovation for the independent living technology sector, and often play a wider role in helping to amplify the voices of disabled and older consumers through their advocacy work and service provision.

For example, during the pandemic Age UK in Calderdale and Kirklees created a network of voluntary peer mentors who helped older residents in the local community use technology and access digital services using pre-purchased tablet computers⁸⁰. Another local charity, the St Monica’s Trust in Bristol, has redeveloped a former factory into the Chocolate Quarter Retirement Village⁸¹ which offered accessible housing that is marketed as luxury accommodation.

Financial challenges have undermined some of this important provision in recent years. The national network of independent living centres where people can try out relevant technologies and services has been reduced as some locations have been forced to close due to underfunding⁸².

Local authorities should be supported to work with local organisations which can provide such valuable expertise to communities.

Disabled Facilities Grant

In the National Disability Strategy, the government committed to reforming the Disabled Facilities Grant (DFG) to improve the efficiency of the scheme and help achieve the Department for Levelling Up, Housing and Communities' (DLUHC) goal to make the country's homes great places to live⁸³. Our Commission believes that the government should seize this opportunity to make it easier for disabled and older people to acquire independent living technology. This chapter therefore sets out the current challenges associated with funding independent living technology through the Disabled Facilities Grant in its current form, and the actions the government should take to overcome the Grant's limitations.

The Disabled Facilities Grant

The Disabled Facilities Grant is a statutory programme that was established in 1989 to help fund adaptations and equipment for disabled and older people's homes to support recipients to live independently in their own homes in the community for longer. The Grant has traditionally been associated with funding physical adaptations to people's homes, like ceiling hoists and ramps.

However, since the scheme's inception the range of products and services that can achieve its aims have expanded significantly but policies and practices that shape how the Grant is applied have not evolved accordingly. In addition, efforts to modernise the Grant by introducing greater flexibility through the Regulatory Reform (Housing Assistance) (England and Wales) Order 2002 (RRO) have not been exploited uniformly by local authorities across the country.

The design of the Disabled Facilities Grant and ambiguities in its guidance make it difficult to fund independent living technology

Our Commission has been told that the Disabled Facilities Grant is too inflexible and bureaucratic, often closing off a potential route to smart home products and other independent living technologies.

While the upper limit for Grant awards is set by legislation at £30,000 in England, the lower limit is set by local authorities. Paul Smith from Foundations explained that 'the Grant is governed by regulations and legislation that aren't really designed for high-volume, low-cost delivery'. The scheme is designed to fund capital costs worth thousands of pounds rather than lots of smaller items each, for example, costing £100⁸⁴.

Projects involving assistive technology often do not qualify for Disabled Facilities Grant funding because they fall below the lower limit. Local authorities can use discretionary housing funding to make the Grant more flexible, but the requirement for councils to first draft a policy outlining how the additional funding will be used often means that this mechanism is not available⁸⁵.

By the time you get assessed and fitted, it might not be needed.

Bournemouth University Dementia Coffee Morning Group Participant⁸⁶

⁸³ <https://www.gov.uk/government/publications/national-disability-strategy>, page 118

⁸⁴ Evidence session 1

⁸⁵ Ibid

⁸⁶ Bournemouth University Dementia Coffee Morning Group, <https://www.policyconnect.org.uk/media/3259>

Delays in acquiring assistive technology caused by lengthy application processes, assessments and purchasing can prevent people from getting equipment when they need it. The Brandon Trust told the Commission that the Disabled Facilities Grant 'decision making, and approval takes so long that it has become a redundant solution for most people'⁸⁷. A survey by Leonard Cheshire Disability and Disability Horizons in 2020 found that in two thirds of local authorities some disabled people are waiting longer than the statutory deadline for adaptations to be completed. At the same time, demand for the Disabled Facilities Grant increased by 27% between 2015 and 2019⁸⁸.

Guidance for local authorities on how the Grant can be used is unclear on what kinds of assistive technologies can be funded. This often causes assessors to overlook the full range of technologies that could be purchased to enhance the benefits of structural adaptations to people's homes. The guidance also does not say whether technical equipment such as Wi-Fi routers and optical cabling can be financed through the Grant⁸⁹.

A final barrier is that the Grant's reliance on one-off payments means it can be difficult to pay for ongoing maintenance and support costs that are associated with technology such as broadband subscriptions and training^{90,91,92}. Blind Veterans UK has pointed out that the running costs of smart technology are often many times greater than the initial capital cost of equipment⁹³.

A reformed Disabled Facilities Grant could drive innovation in independent living technology provision

The Disabled Facilities Grant can be a valuable resource for local authorities working to take advantage of smart home devices and other independent living technologies to help disabled and older residents enjoy greater choice and control.

The features of modern consumer smart home technology that can be used to control power, heating, lighting and other household utilities mean that the aims of the Disabled Facilities Grant can now be achieved at a low cost and, in many cases, more effectively than in the past. Our Commission has been provided with numerous examples of how making the Grant easier to use could help drive innovation in independent living technology use across the country⁹⁴:

- More routinely including smart home technology in Disabled Facilities Grant awards would help to drive the development of innovative provision across the county.
- The Grant could be used to introduce smart home technology to both disabled and older people and frontline professionals, helping them learn about technology and understand the benefits.
- A more flexible approach to delivering the Disabled Facilities Grant would help health and social care and housing services to provide joined-up holistic support to disabled and older people, ensuring that support provided through technology and adaptations can be coordinated with other services.

⁸⁷ The Brandon Trust

⁸⁸ <https://www.leonardcheshire.org/about-us/our-news/press-releases/disabled-people-face-waits-more-two-years-vital-home-adaptations>

⁸⁹ Evidence session 1

⁹⁰ The Brandon Trust

⁹¹ TL Tech Ltd

⁹² Beth Moulam

⁹³ Blind Veterans UK

⁹⁴ Evidence session 1

There are already pockets of innovative practice in the use of the Disabled Facilities Grant. Cannock Chase District Council's housing authority has adopted a housing assistance policy that introduced two discretionary technology grants: a means-tested fund for assistive technology worth up to £3,000 and a dementia-friendly Grant of up to £10,000 which can be used to finance digital technologies⁹⁵.

Submissions to our Commission suggest a range of measures that the government could take to encourage more local areas to deploy independent living technology through the Grant. These include simplifying the application process to make the eligibility criteria for Grants clearer⁹⁶ and introducing a payment method that enables people to organise and source their own technology⁹⁷. Local authorities should also be encouraged to use remote assessment tools (involving video conferencing) in appropriate situations to help improve service delivery.

Another proposal is to split the Grant into different categories, ring-fencing some of the budget for technology projects^{98,99}. The think tank HousingLIN's recent TAPPI (Technology for an Ageing Population: Panel for Innovation) Inquiry recommended the creation of a new Technology Facilities Grant¹⁰⁰.

⁹⁵ Ibid

⁹⁶ Blind Veterans UK

⁹⁷ Dorset County Council

⁹⁸ Ibid

⁹⁹ Chris Brothwood

¹⁰⁰ <https://www.housinglin.org.uk/Topics/type/The-TAPPI-Inquiry-Report-Technology-for-our-Ageing-Population-Panel-for-Innovation-Phase-One>

Consumer Market

Our commission believes it is vital that the government should be proactive in developing a vibrant market on a national level. The government's Innovation Missions programme announced in last year's UK Innovation Strategy¹⁰¹ is a valuable opportunity to rejuvenate the independent living technology sector. Government research and development funding can remove barriers to the emergence of innovative technologies. Regulation can incentivise innovators to advance certain projects as opposed to others. Policy makers can spur companies to create opportunities for technological creativity, for example, by inducing mainstream consumer electronics manufacturers to ensure that their products are compatible with specialist assistive technologies.

This chapter will explore how the government and the technology sector can make the independent living technology market work better for disabled and older people.

The market too often prioritises the expectations of professionals over the requirements of disabled and older people

Our Commission has been told that the independent living technology market tends to disempower disabled and older people by routinely overlooking their needs as the ultimate consumers of products and services¹⁰². Developers often base product development and marketing decisions on what they think people who support disabled and older people want rather than the wishes of the main users¹⁰³. As a result, technologies designed for disabled and older people are often unappealing, clinical and stigmatising¹⁰⁴.

The specialist independent living technology market has seen little innovation in recent decades. Local authority provision is typically centred around traditional analogue telecare services that offer a similar range of technologies to everyone, regardless of their actual needs and preferences. These tools are often reactive rather than proactive in the way they address people's requirements, making them inappropriate for independent living and early intervention services¹⁰⁵.

The specialist market is also dominated by a medical model approach to disability that focuses too much on augmenting the limitations of people's bodies and overcoming specific barriers people face to interacting with their environment¹⁰⁶. For example, many telecare services focus almost exclusively on situations in which an individual might need help such as reminding them to take their medication or calling for assistance. There is not enough focus on how technology can be used to give people more options to live in and use their home the way they choose¹⁰⁷, such as by taking advantage of the different ways smart technology can be used to give them control over a wide range of household devices through voice commands, a touch screen interface on their smartphone or tablet computer or via an automated set up.

Mainstream technology companies tend to develop their products and services with an average user profile in mind that does not reflect the spectrum of abilities and needs in the disabled and older people. Companies may not know how their products can be used by disabled and older people to make their lives better. Individuals and their carers are often compelled to rely on their own creativity to assemble products in a way that suits them¹⁰⁸. While some products have built-in accessibility features, disabled and older people are often unaware of them¹⁰⁹.

¹⁰¹ <https://www.gov.uk/government/publications/uk-innovation-strategy-leading-the-future-by-creating-it>

¹⁰² Evidence session 3

¹⁰³ CIRCLE, University of Sheffield

¹⁰⁴ Coventry University

¹⁰⁵ AdaptEco

¹⁰⁶ Bush & Co

¹⁰⁷ Leonard Cheshire, University of Stirling

¹⁰⁸ Ibid

¹⁰⁹ Steering Group Meeting October 2021

Professor Nigel Harris from the West of England Academic Health Science Network told our Commission: ‘It’s really important to think about the end user and make sure that they’re central to the process¹¹⁰’. Companies need to engage with all the stakeholders that are likely to use their products. Mapping stakeholders can be a useful exercise for independent living technology providers, revealing the range of people who are likely to come into contact their devices and the main user groups¹¹¹.

More commercial market research is needed to help companies understand the lives of disabled people and their families and develop a realistic picture of how their products are likely to interact with their day-to-day routines. Shared knowledge development, model product specifications and case studies demonstrating how disabled and older people use technology may also be useful¹¹².

The independent living technology market is an increasingly crowded field with traditional specialist technologies such as telecare devices being joined by newer products, including mainstream smart technologies. This can make it hard for both professionals and private consumers to navigate the market and choose between the different available solutions¹¹³.

Our Commission has identified several key challenges that must be resolved to make it easier to buy and sell independent living products and services¹¹⁴:

- An over-reliance on a handful of large suppliers means that commissioners often rely on a small number of trusted providers – partly due to multi-year commissioning cycles which do not allow much time to exploit the technological innovation that takes place on a much faster timescale. Some local areas are trying to counter this by creating innovation hubs that allow councils to pilot an experiment with the new technology¹¹⁵.
- There is limited regulation, accreditation and evaluation of independent living technologies. This makes it difficult for buyers to put their trust in unfamiliar products and services.
- Ensuring equal access to technology across different demographic groups can be difficult as some potential consumers are easier to reach than others.
- Products and services do not cater for the different needs of professional buyers and private consumers. These two types of buyers have distinct needs at all the stages of the purchase, from discovery and buying, to set up and use of a product. There needs to be a better range of options for consumers to find suitable products in the form of physical and digital marketplaces and after sales support¹¹⁶.

¹¹⁰ Evidence session 3

¹¹¹ CIRCLE, University of Sheffield

¹¹² Leonard Cheshire, University of Stirling

¹¹³ Ibid

¹¹⁴ Evidence session 3

¹¹⁵ CIRCLE, University of Sheffield

¹¹⁶ TL Tech Ltd

Survey responses: What barriers or concerns do you have about using smart home technology?

“ They are concerned about energy consumption and fire risk from items staying plugged in. ”
Mr and Mrs Jones (survey completed by carer on behalf of their parents), aged 65 and over

“ Being visually impaired the initial set up of most things need assistance so I can't be truly independent. Having a computer in the house listening out for commands is also a privacy concern. ”
Alison Bates, aged 35-50

“ Concerns, my privacy being compromised. Barriers, the cost of equipment and if it is fully accessible to my screen reader. ”
Ken, aged 51-64

Source: Smart Homes and Independent Living Commission Survey¹¹⁷

The innovation in the independent living technology sector is constrained by ill-targeted development funding, poor market signals and a lack of internet access across the country

Smart homes and other novel independent living technologies are being stifled by a series of constraints on markets. Limited broadband or 4G internet around the country is an increasingly significant block to technologies that work best when households can get online. This applies not only to smart home products but also other upcoming innovations. For example, the Bristol Robotics Laboratory has demonstrated the potential for robotics to help provide support in day-to-day tasks and companionship to disabled and older people¹¹⁸.

Market forces are currently not providing technology developers with adequate information or incentives to harness the potential of technology for people. Insufficient information exists for disabled and older consumers and technology developers about what technologies tend to work best for whom and in what circumstances. Companies need better evidence of demand among private consumers to help incentivise and drive the supply of independent living technology¹¹⁹.

“ As I have got older, I focus in and assess equipment/products and really think through purchases – I would never have done this when I was younger, I didn't think about it then. ”

Bournemouth University Dementia Coffee Morning Group Participant¹²⁰

¹¹⁷ Smart Homes and Independent Living Commission Survey, <https://www.policyconnect.org.uk/media/3260>

¹¹⁸ TL Tech Ltd

¹¹⁹ Ibid

¹²⁰ Bournemouth University Dementia Coffee Morning Group, <https://www.policyconnect.org.uk/media/3259>

A combination of supply chain issues and the closed nature of many independent living technology product ecosystems can stop otherwise viable solutions from successfully reaching the marketplace. Government investment in this market has tended to focus on early-stage research and product development. However, many independent living technologies fail to become products due to a lack of support later in the development cycle. Improving the availability of start-up funding for products, services and business models that are nearing commercial viability would allow more new technologies products and services to reach scale and offer greater choice for disabled and older consumers^{121,122}.

Our evidence sessions highlighted a few initiatives that show how some of these market failures can be addressed¹²³:

- CECOPS¹²⁴ is a not-for-profit certification and standards body that provides a range of self-assessment tools for assistive technology manufacturers and service providers.
- The West of England Forever Homes Consortium brought together academics, charities, third sector housing and care companies to create better homes for older people by funding the development of user-centred designs, products, technology and care services.
- The Association of Directors of Adult Social Services (ADASS) Digital Innovation Challenge¹²⁵ aims to advance and highlight the innovative work with new technologies that councils are developing with local people and partners, supported by experts from Microsoft.
- The Devices for Dignity and the University of Coventry are developing an impact toolkit to help identify the outcomes associated with products.

The government has a significant opportunity to help shape the UK's nascent smart home sector to ensure disabled and older people can share in the benefits of these increasingly powerful technologies

While the physical accessibility of housing has long been recognised as an important determinant of independent living for disabled and older people, the suitability of homes for the independent living technologies of the future will increasingly define what it means to have choice and control over our domestic environment in the 21st century. The digital readiness of the housing stock will play a critical part in shaping when and how smart home products are adopted by people with care and support needs¹²⁶.

However, the growth and development of the smart homes industry is constrained by a range of factors. Much of the country's housing stock lacks the digital infrastructure required to support smart home technology. There is also no industry consensus around what the exact technical specification of a smart home should be. This is compounded by a lack of detail in planning regulations on what kind of digital infrastructure should be built into new housing. These factors make it difficult to create a set of authoritative industry standards for the sector. Finally, the electrical contractor workforce often does not have the necessary technical training to work with smart home technology¹²⁷.

¹²¹ TL Tech Ltd

¹²² TL Tech Ltd

¹²³ Evidence session 3

¹²⁴ <http://www.cecops.org.uk>

¹²⁵ <https://www.adass.org.uk/digital-innovation-challenge-2021>

¹²⁶ Evidence session 3

¹²⁷ Ibid

Our Commission has been told it is vital that smart home ecosystems are built in a holistic way. Too often, house builders and designers use technologies that do not work well with other products and are sometimes designed to force people to use a particular range of solutions¹²⁸. Also, poor connectivity within a residence can often be related to the internet service provider (ISP) failing to meet the data demands generated by various devices, causing them to drop off the network¹²⁹. Some companies offer services to act as an intermediary between architects, developers and residents to ensure that appropriate digital infrastructure and products are built into properties¹³⁰.

One action the government could take to help make smart home technology more widely available would be to address the high cost of broadband and smart home connectivity. For example, the commission was told that policy makers should specify a mandatory digital standard for all new homes to ensure every property is smart-home friendly. It could also provide free broadband to disabled and older people on means-tested benefits¹³¹.

The government should work with house-builders, and other sectors that have a significant influence of residential development such as financial institutions, to make sure accessibility and technology are priorities for construction firms¹³². Housing officials in national and local government should encourage the use of interoperable technologies that allow different systems to be seamlessly integrated, rather than requiring residents to use a single solution that may not meet their needs¹³³.

Finally, there is a need for the government or another body to provide more targeted certification for digital equipment suppliers, particularly technicians in the smart homes sector. As many electricians are not trained to build smart home systems that take advantage of the latest techniques to build a robust network with a power back-up system, it is important for health and social care professionals and private consumers to be able to identify installers with the relevant skills and a reliable track record^{134,135}.

Survey responses: What actions should government, industry and others take to remove barriers to independent living technology?

“ Legislation to compel service providers to make services and sites accessible. To ensure that smart technology once identified is supplied, installed and training is provided as part of a support package. ”

Ken, aged 51-64

“ Social care or some local support agency could contact me and help me get what I need. I don't know how you contact the right person. My son has done all of the setting up, but he lives a very long way away. ”

Audrey B, 65 and over

“ Clearly stating what data is being stored and if it is anonymised. Allowing easier management or control of stored data. ”

Anonymous respondent, aged 35-50

“ Buttons need to be BIGGER, CLEARER, gadgets need to be simpler. Things like phones and TV remotes need less options, even their electric fire has a remote that looks like it could launch a space craft. ”

Mr and Mrs Jones, aged 65 and over

Source: Smart Homes and Independent Living Commission Survey¹³⁶

¹²⁸ Sparko TV VRC

¹²⁹ Ibid

¹³⁰ AdaptEco

¹³¹ Evidence session 3

¹³² Ibid

¹³³ KNX UK

¹³⁴ TruMedia, CEDIA

¹³⁵ 3-e Smart Control

¹³⁶ Smart Homes and Independent Living Commission Survey, <https://www.policyconnect.org.uk/media/3260>

Building a human rights-based framework of regulations, standards and training is critical to reducing the potential risks posed by smart devices and other technologies to disabled and older people

Our Commission has been advised of a number of specific risks associated with smart home devices and other technologies that are converging on the independent living technology market. These include¹³⁷:

- Failing to secure the fully-informed consent of disabled and older people.
- The possibility that families, carers and professionals may use the technology to infringe on a disabled or older person's human right in relation to the deprivation of liberty, through ignorance or otherwise.
- The reliability of consumer technologies, which may rely on a mains house supply or a stable internet connection to function, or be built on third-party software that may be susceptible to faults

“I'm sure it's wonderful but I'm frightened of hacking.”
Bournemouth University Dementia Coffee Morning Group Participant¹³⁸

These risks are made more acute by the fact that this is a relatively new field. However, the infancy of these technologies also presents an opportunity for the government to act early to prevent the products and services that will emerge from them from doing harm.

Some technology developers and service providers are creating their own ethical protocols to help guard against such risks¹³⁹. There is currently no single route to accreditation for independent living technology and existing accreditation schemes do not cover products that are sold as consumer technologies. NHSX is creating 'accredited supplier' lists, an exercise that could be extended to consumer independent living technologies¹⁴⁰.

However, these ethical considerations should be addressed by government and industry bodies through a combination of education, training and accreditation for professionals, standards for designing products and services and regulations, for example, to ensure fail safes are built into devices. Concerted action on a national and, where necessary, international level is critical to ensuring disabled and older people can safely and securely enjoy the benefits of future technologies.

¹³⁷ Evidence session 3

¹³⁸ Bournemouth University Dementia Coffee Morning Group, <https://www.policyconnect.org.uk/media/3259>

¹³⁹ TL Tech Ltd

¹⁴⁰ Steering Group Meeting October 2021

Skills and Awareness

Low levels of awareness represent one of the biggest barriers to the adoption of independent living technology. According to The National Institute for Health Research's Help at Home report on the use of technology among older people, many do not find out about technologies that may have made a difference to their lives until it is too late. At the same time, health and social care staff are generally not trained to support the long-term use of technology¹⁴¹.

This chapter sets out what government and industry can do to boost skills and awareness of independent living technology.

Increasing public awareness of independent living technology would reduce stigma and help people avoid life-changing crises

One of the consequences of the shortcomings of the independent living technology market outlined in the previous chapter is that people often do not access products and services until a crisis caused by illness, injury or another kind of critical event in their lives forces them to do so. Current systems of provision are largely designed for people who are in contact with health and social care services. Older people in particular are unlikely to get to see others using assistive technology of any kind unless they are living with someone else with care and support needs. This contributes to low levels of awareness of independent living technology and is a factor in shaping the stigma associated with these products¹⁴².

***“ Maybe this could be introduced when people are newly diagnosed...
There might be options to help at the early stages. ”***

Bournemouth University Dementia Coffee Morning Group Participant¹⁴³

Our Commission was told that a public awareness-raising campaign led by government and industry would help to drive a mass change in attitudes to independent living technology. Disabled and older people should also have more opportunities to see such technologies being used before they reach a crisis point, for example, in supermarkets and technology retailers, GP surgeries, public libraries and in prominent places on council and NHS England websites¹⁴⁴.

However, improving awareness of independent living technology is unlikely to be sufficient to improve independent living technology adoption. While the Commission was told that making it easier for people to buy their own independent living technology would increase take up – particularly with the current shortage of qualified professionals to carry out formal assessments – some stakeholders were concerned that this would lead to people selecting unsuitable products. Technology suppliers must become better at serving disabled and older consumers and providing informed advice to individual customers¹⁴⁵.

The Motability scheme could offer a model for enhancing market-based provision of independent living technology through government support¹⁴⁶.

¹⁴¹ <https://www.dc.nihr.ac.uk/themed-reviews/research-on-assistive-technology.htm>

¹⁴² Evidence session 2

¹⁴³ Bournemouth University Dementia Coffee Morning Group, <https://www.policyconnect.org.uk/media/3259>

¹⁴⁴ Evidence session 2

¹⁴⁵ Ibid

¹⁴⁶ Ibid

Care professionals require better training in assistive technology

Together with their families and friends, health and social care staff have an important role to play in helping disabled and older people to live the lives they want to lead, forming valuable relationships and knowledge of the people they support. Our Commission believes it is vital that these relationships and expertise are harnessed to ensure disabled and older people can take full advantage of smart home devices and other independent living technologies.

There is a pressing need to develop the assistive technology skills of the care and support workforce¹⁴⁷. Improved skills are required to ensure disabled and older people are supported to use and maintain the technology and reduce the likelihood of equipment being prematurely abandoned¹⁴⁸.

“ I had an occupational therapist visit from social care who gave advice regarding half steps before my hip replacement. They wouldn’t give advice on what else I could buy and told me to look on the internet, they didn’t seem to know much about smart gadgets and were amazed when I showed them mine in action... If it wasn’t for my family, I wouldn’t be aware of the clever things and the simple aids that help. ”

Pat, aged 65 and over – Smart Homes and Independent Living Commission Survey respondent¹⁴⁹

Blind Veterans UK has identified three types of support that are necessary to help their staff and volunteers to use technology effectively. These include providing a source of expert advice and up-to-date knowledge, providing training to increase their skills, and ensuring existing skills and knowledge are maintained¹⁵⁰.

Dr Louise Moody from Coventry University highlighted the important role carers often play in helping to manage the psychological impact of technology as disabled and older people adapt to using devices as well as assisting with the interpretation of any clinical data and information about individuals that may be collected through technology¹⁵¹.

Evidence collected by our Commission indicates that better assistive technology education, training and continued professional development is required for both the general health and social care workforce and technology specialists.

The lack of generalist training opportunities is compounded by the fact that the provision that does exist focuses heavily on certain forms of technology such as telecare¹⁵² and is designed to ensure compliance with care providers’ regulatory requirements rather than giving learners the confidence to be creative and use initiative when helping disabled and older people to benefit from technology¹⁵³.

¹⁴⁷ Evidence session 2

¹⁴⁸ Coventry University

¹⁴⁹ Smart Homes and Independent Living Commission Survey

¹⁵⁰ Blind Veterans UK

¹⁵¹ Coventry University

¹⁵² AdaptEco

¹⁵³ Coventry University

New approaches to training are necessary to account for the diverse and ever-changing nature of the independent living technology market. Education and training opportunities should be co-created with care workers to accommodate different learning styles and requirements. This might include^{154,155}:

- E-learning modules on independent living technology, providing an overview of the market in general and the application of technologies in specific contexts.
- Setting up local resources where people can see technologies being demonstrated.
- Organising roadshows hosted at locations such as supermarkets, libraries, GP surgeries and other venues that people frequently visit.

Independent living technology education and training should be fully integrated into health and social care learning programmes

Our Commission was told that the sector should create a staged framework of training such that people from many different roles could receive training at the point where their knowledge ends, with clear routes to progression¹⁵⁶. Health and social care further and higher education courses could increase the assistive technology content of their programmes (such as the National Vocational Qualifications (NVQs) in Health and Social Care) and offer more practical work placements in environments in which independent living technology is used¹⁵⁷. The Trusted Assessor Framework could provide the basis for a sector-wide education and training programme¹⁵⁸.

Career progression pathways for people who wish to specialise in assistive technology within the health and social care sector are underdeveloped. However, the sector has a growing need for experts based in clinical settings as well as in the community who can provide technical support to disabled and older people and assist fellow practitioners with less knowledge and experience. Commissioners and service managers can build institutional confidence and expertise by establishing specialist assistive technology roles and career progression paths with their organisations and teams¹⁵⁹. Offering a greater choice of graduate programmes in independent living technology and an apprenticeship in the field would also help more practitioners develop increasingly in-demand expertise¹⁶⁰.

It is important that any framework for enhancing workforce education and organisational practices should consider how the non-professional social care workforce should be supported to use technology. Care and support workers, personal assistants, family carers and other members of the informal care workforce play a critical part in helping disabled and older people to pursue their preferred lifestyle. The professional workforce must be prepared to provide appropriate support and advice to them.

¹⁵⁴ Dorset County Council

¹⁵⁵ Coventry University

¹⁵⁶ Evidence session 2

¹⁵⁷ Blind Veterans UK

¹⁵⁸ Evidence session 2

¹⁵⁹ Evidence session 1

¹⁶⁰ Ibid

The technology sector must educate and train its workforce to develop products and services that meet the needs of disabled and older people

Many technology developers do not understand the needs of disabled and older people and often assume they are too difficult to reach. Some of the difficulty may be related to a lack of understanding of the challenges associated with disability and older age. Technology developers might not understand the technical knowledge and capabilities of disabled and older consumers. Independent living technology is overlooked by the education and training programmes of many technology, design and manufacturing-related professions¹⁶².

Possible strategies for improving industry training include¹⁶³:

- Setting industry-wide standards for independent living technology education and training.
- Developing more multi- and interdisciplinary courses that encompass a variety of different industries.
- Offering greater flexibility in the choice of modules in degree courses and other qualifications – for example, by adopting US-style major-minor degree structures.
- Using national and local economic and industrial policy to drive skills development, for example, offering funding to Local Enterprise Partnerships to develop the capabilities electrical contractors to fit smart home technology

Evidence submitted to our Commission shows that collating and sharing user insights, preferences and needs can help developers build profiles of disabled and older people^{164,165}. Caroline Laurenson from TL Tech Ltd has explained how the company carried out source user input for the research and prototyping stages of a new product during the pandemic through a combination of video calls, online surveys and social media¹⁶⁶. Organisations such as NIHR Devices for Dignity MedTech Co-operative provide a strong model of active partnership with patients, carers and the public through the development of medical devices, healthcare technologies and technology-dependent interventions that could be adopted more widely¹⁶⁷. However, some of these activities have significant cost associated with them that smaller technology companies may not be able to afford¹⁶⁸.

The think tank HousingLIN's recent TAPPI (Technology for an Ageing Population: Panel for Innovation) Inquiry¹⁶⁹ has produced a framework outlining ten principles that should underpin the development of technology, housing and care for disabled and older people that places the individual at the centre of the process. This could be used to inform educational syllabuses as well as company product development cycles.

¹⁶² Evidence session 3

¹⁶³ Ibid

¹⁶⁴ Blind Veterans UK

¹⁶⁵ Coventry University

¹⁶⁶ TL Tech Ltd

¹⁶⁷ Coventry University

¹⁶⁸ TL Tech Ltd

¹⁶⁹ <https://www.housinglin.org.uk/Topics/type/The-TAPPI-Inquiry-Report-Technology-for-our-Ageing-Population-Panel-for-Innovation-Phase-One>

Good practice case study:

The Adapt Tech, Accessible Technology (ATAT) Project

The Adapt Tech, Accessible Technology (ATAT) Project¹⁷⁰ saw academics from Swansea University, the Open University and Northumbria University and community-based groups Digital VOICE in Communities (Newcastle) and Digital Communities in Wales partner with older people to co-produce easy-to-use technology for people aged 50 and over. The main output from the project was the creation of a new smartphone launcher app – a piece of software that modifies the device's user interface to make it easier to use.

Digital VOICE in Communities and Digital Communities in Wales recruited people from disadvantaged socio-economic backgrounds who had little or no experience of digital technology. These individuals took part in a series of online workshops between January and May 2021.

- Workshop 1 – invited participants to talk about their experiences of using digital technologies and explored different solutions that might boost their confidence.
- Workshop 2 – introduced the group to the concept of launcher apps and asked them to test existing apps with a view to identifying how they could be improved for people with low levels of digital skills.
- Workshop 3 – saw the group develop and test a prototype launcher app created by the research team's computer scientists.

The prototype launcher app was also tested by older people recruited by Age Northern Ireland.

Key design insights from the workshops related to the size of the smart phone, the layout of the keypad and building in shortcuts to particularly useful apps such as video chat. The app was designed to be customised, enabling people to create personalised interfaces (for example, font size and icons) for their devices. The project also created tutorials to help people use their smartphone and has published an Icon Booklet to help users identify common apps and features. As the project progressed, participants' digital confidence grew, and they began to use more advanced skills.

The team says that working closely with older participants in a way that allowed the app's programmers to return to them for feedback produced a product that was firmly rooted in people's everyday lives. The result was a much more useful product.

A podcast is available for download via the project webpage which describes the co-production phases and includes voices of the participants, stakeholders and research team members.

The project team is now looking for funding to help make the launcher app available to the wider public.

Source: The Open University¹⁷¹

¹⁷⁰ <https://www.open.ac.uk/health-wellbeing/projects/adjust-tech-accessible-technology-atat>

¹⁷¹ Based on interview

Methodology

About our evidence

To gather evidence for this Commission, we held three roundtable evidence sessions with a variety of stakeholders including disabled people's organisations, care providers, designers and suppliers of assistive technology solutions, academic researchers, and NHS and local authority staff. We also analysed written submissions to our call for evidence and supplemented our findings with interviews with other expert stakeholders. Finally, we unearthed case studies of good practice and innovation from across the country and conducted a focus group with the members of the Dementia Coffee Morning Group.

You can read our evidence by following the links below:

- Outcomes Briefing Roundtable 1 - Commissioning, <https://www.policyconnect.org.uk/media/3256>.
- Outcomes Briefing Roundtable 2 - Service Delivery and Workforce Development, <https://www.policyconnect.org.uk/media/3257>.
- Outcomes Briefing Roundtable 3 - Market Shaping, <https://www.policyconnect.org.uk/media/3258>.
- Focus Group with Bournemouth University's Dementia Coffee Morning Group, <https://www.policyconnect.org.uk/media/3259>.
- Responses to the Commission's Call for Evidence, <https://www.policyconnect.org.uk/media/3261>.
- Smart Homes Commission Survey of Disabled and Older People, <https://www.policyconnect.org.uk/media/3260>.

Contributors

The views in this report are those of the author and of Policy Connect. They were informed by the listed contributors below but do not necessarily reflect the opinions of these organisations.

Roundtable evidence sessions

Alyson Scurfield, Chief Executive, TSA

Brian Donnelly, Chief Executive, CECOPS

David Godfrey, Policy Adviser, Kent County Council

Dr Huseyin Dogan, Acting Deputy Head of Department in Computing and Informatics, Bournemouth University

Dr Michelle Heward, Post-Doctoral Research Fellow Dementia, Bournemouth University

Gerry Allmark, Managing Director, UKTelehealthcare

Professor Hamid Bouchachia, Data Science & Intel Systems, Bournemouth University

Harriet Gridley, Director (UK), No Isolation

Harriet Paul, Foundation Support Coordinator, The Disabilities Trust

Jim Ellam, Former Commissioning Manager, Staffordshire County Council

John Stacey, Sales and Marketing Manager, Pretorian

Jonathan Shaw, CEO, Policy Connect

Julie Eshleman, Assistive Technology PhD Researcher, Leonard Cheshire Disability

Lauren Walker, Professional Adviser, Royal College of Occupational Therapy

Professor Louise Moody, Professor of Health Design and Human Factors, Coventry University

Matt Nimmons, Managing Director, CEDIA

Professor Nigel Harris, Director of Innovation and Growth, West of England Academic Health Science Network

Melanie Poyser, Partnerships Manager, DLF
Paul Foulkes, President, KNX UK
Paul Smith, Director, Foundations
Dr Paul Whittington, Postdoctoral Researcher in Assistive Technologies, Bournemouth University
Peter Aylett, HTA/CEDIA
Phillipa Hedley-Takhar, Business Development Manager, Devices for Dignity
Rob Gregory, Sales Manager UK/Eire, Tobii Dynavox
Rohan Slaughter, Senior Lecturer in Educational Assistive Technology, University of Dundee
Professor Roy Sandbach OBE, Former Director, National Innovation Centre for Ageing
Sarah Abdi, PhD Researcher, University of Sheffield
Sharon Burgess, Head of Safeguarding Adults and Quality, London Borough of Enfield
Steve Tyler, Director of Assistive Technology, Leonard Cheshire Disability
Wayne Scott, CEO, Moral Hazard
Zoe Clarke, Assistive Technology Clinical Specialist and Lead Healthcare Scientist, NHS Barnsley

Written Submissions

Amanda Wildman, Director, CEDIA and Owner, TruMedia
Beth Moulam, Individual IT user
Caroline Laurenson, Managing Director, TL Tech Ltd
Chris Brothwood
Christian Geisselmann, CEO/Founder, AdaptEco
Claire Collett, Technology Enabled Care Occupational Therapist, Dorset Council
Graeme Harrold, Owner/Director, 3-e Smart Control
Jocelyn Gaynor, Head of Foundation, The Disabilities Trust
Julia Godwin, Business Development, SparKo TV VRC
Julie Eshleman, AT Researcher, Leonard Cheshire and PhD Researcher, University of Stirling
Dr Kate Hamblin, Senior Research Fellow, CIRCLE, University of Sheffield
Professor Louise Moody, Professor of Health Design and Human Factors; Human Factors Theme Lead HR Devices for Dignity
MedTech Co-operative, Coventry University
Matthew Lee, Blind Veterans UK
Paul Doyle, Assistive Technology Consultant, Bush & Co
Paul Foulkes, President, KNX UK
Robin Christopherson MBE, Head of Digital Inclusion, AbilityNet
Rohan Slaughter, Senior Lecturer, University of Dundee
Sandra Coulter, Chief Executive Officer, Silverline Memories
Tracy Date, Head of Business, Enterprise and Retail, Brandon Trust

Interviews

Aejaz Zahid, Programme Director, ICS Innovation Hub, South Yorkshire and Bassetlaw Integrated Care System
 Andrew Evans, Specialist Commissioning Manager, Buckinghamshire County Council
 Andy Speake, National Technical Manager, Aico
 Cath Ritchie, Technology & Change Business Relationship Manager (Health and Adult Services), North Yorkshire County Council
 Clare Morris, Chief Executive, Rethink Partners
 David Adams, Chief Executive Officer, ADS Independent Living Solutions
 Diane Buddery, Programme Head – Sector Digital, Skills for Care
 Professor Garth Johnson, ADL Smartcare and Editor in Chief, Journal of Rehabilitation and Assistive Technology Engineering
 Dr Helen Meese, Founder & Chief Executive Officer, The Care Machine
 Professor John Bolton, Visiting Professor, Institute of Public Care
 Sue Tivey, Senior Contracts Officer, Adult Services and Health, West Sussex County Council

Smart Homes Commission Survey of Disabled and Older People

Alison Bates	Audrey B
Mr & Mrs Jones	Ken
LU	Pat

Focus group

We would like to thank Dr Michelle Heward and the members of the Bournemouth University Dementia Coffee Morning Group for inviting us to speak to them.

Commission Chair

Councillor Sir Paul Carter, former Leader of Kent County Council

Steering Group

Aneta Armova-Levin, Education Manager, CEDIA
 Claire Sutton, Digital Transformation, Lead National Care Forum
 Clenton Farquharson MBE, Chair, Think Local, Act Personal Partnership (TLAP)
 Dr Hannah R. Marston, Research Fellow, Open University
 James Lampert, Head of Tech-Enabled Care, NRS Healthcare
 Janet Seward Programme Manager, DLF
 Julie Ogley, Director of Social Care, Health and Housing, Central Bedfordshire Council
 Kush Kanodia, Associate Non-Executive Director, Hertfordshire Partnership University NHS Foundation Trust
 Professor Lee-Ann Fenge, Professor of Social Care, Bournemouth University (Principal Academic Adviser)
 Liz Twist MP, MP for Blaydon Labour
 Phil Bridges, Business Development Manager, Oysta Technology
 Professor Sally Dibb, Centre for Business in Society, Coventry University
 Steve Tyler, Director of Assistive Technology, Leonard Cheshire Disability

About Policy Connect

Policy Connect is a cross-party think tank. We specialise in supporting parliamentary groups, forums and commissions, delivering impactful policy research and event programmes and bringing together parliamentarians and government in collaboration with academia, business and civil society to help shape public policy in Westminster and Whitehall, so as to improve people's lives.



Our work focusses on five key policy areas which are: Education & Skills; Industry, Technology & Innovation; Sustainability; Health; and Assistive & Accessible Technology.

We are a social enterprise and are funded by a combination of regular annual membership subscriptions and time-limited sponsorships. We are proud to be a Disability Confident and London Living Wage employer, and a member of Social Enterprise UK.

Acknowledgements

We would like to thank our sponsors Bournemouth University and Coventry University, without whom this report would not have been possible. We would also like to give special thanks to colleagues at Policy Connect:

- Oona Muirhead CBE
- Robert McLaren
- Geena Vabulas
- Genevieve Collier
- Kevin Heaney
- Shamima Akhtar
- Alice Webster
- Victoria Zeybrandt



Produced by:



All-Party Parliamentary Group for

assistivettechnology

Co-sponsors:



CONTACT

Policy Connect
CAN Mezzanine
7-14 Great Dover Street
London SE1 4YR

 @Policy_Connect
 policy-connect
 info@policyconnect.org.uk
 0207 202 8585