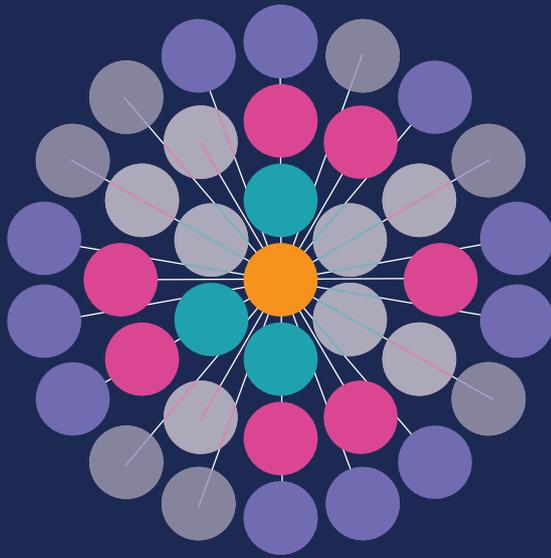


Future assisted living technology

Sector briefing paper



Supported by:



Introduction

This briefing paper sets out the UK housing sector's ambition for new technology in retirement living housing for older people and independent living services. The sector wants technology providers to understand the outcomes providers of specialist housing aim to achieve, the profile of the demographic they serve, and the details of the operating environment they work in. This paper sets out all of these as a guide for a technology or solution provider to build a product or service that truly meets the sector's needs.

Technology providers should use this paper as a reference point when designing new products and services and as an inspiration and foundation for innovation.

HACT is inviting technology providers to submit their proposals for solutions to meet the outcomes and challenges set out in this paper. The best solutions will have the opportunity to pitch their ideas at *Housing 2018*, the largest conference in Europe for professionals working in social housing.

Technology providers that can meet this brief will have access to a market of over 400,000 homes in England where solutions are procured by large businesses rather than individual consumers.

The paper is set out in four sections:

- 1 Sector overview
- 2 The sector's priorities
- 3 Potential barriers
- 4 Key recommendations

The content of this paper has been drawn from interviews and workshops with four major providers of sheltered and specialist housing that operate across the whole of England:

Anchor

Curo-Group

Hanover

Riverside Group

Call to action

The retirement living sector is at a juncture.

The sector is looking to invest significantly in new technology that better services the needs of its residents, utilising the best of consumer technology while maintaining the level of reliability and safety existing technology offers.

Currently no one product or service fits this bill and an opportunity exists for technology or solution provider to help the sector realise this goal.

The right solution will have access to a market of over 400,000 homes most of which are managed by less than a hundred landlords.

The right solution has the potential to scale quickly and expand into the general needs social housing which provides accommodation for one fifth of the UK population.

This is your opportunity to enter a sector that is looking to transform and gearing up to invest in making technology a central pillar of its future operating model.

HACT alongside Anchor, Curo Group, Hanover and Riverside Group call on the technology sector to submit proposals for the Future of Assisted Living Technology.

The best proposals will be invited to pitch at this year's CIH Housing 2018 conference (26-28 June).

Proposals should aim to meet the key outcomes and address the challenges highlighted in this briefing paper.

We are interested in ideas, solutions, partnerships and market ready products that solve the challenges faced by the sector.

Submit your proposals to info@hact.org.uk by 12 June 2018

Proposals should include an overview of your product, idea or service, how it can benefit the housing sector and links to any supporting content.

Sector overview

What is retirement living?

There are around 462,000 retirement living and extra care homes that provide a form of accommodation with additional support for older people.¹ Retirement living is housing designed for people who may need some additional support in their homes offering a range of services that aims to empower residents to live independent lives.

A key feature of most retirement living units is a pull cord alarm or dispersed alarm system which offers the residents the reassurance that if they need assistance there is a monitoring service available for them 24/7. Retirement living housing can also be known as sheltered housing, specialist housing for older people or independent living.

Homes can be located in blocks and clusters with a scheme manager who is onsite or as part of a team which manages a number of schemes. Locations are usually made up of either rented or leasehold units and occasionally a mix of these tenures. Within social housing rented units approximately 70%-80% of tenants will be in receipt of housing benefit to help them to pay the rent and service charge.

Most schemes are aimed at over 55s but many housing providers also offer supported housing, which is for any vulnerable person

who might need housing related support or care. Most people living in retirement living are over 80.

The retirement living schemes that are based in blocks or clusters often offer residents communal spaces and run activities and events to promote community engagement and tackle social isolation. For some residents this is a key part of why they choose to live in a retirement living scheme.

The level of support and facilities provided is delivered on a continuum from a more basic service that offer just managed accommodation and facilities and the alarm system, through to extra care facilities which include communal areas, catering facilities and the availability of on site care.

Outside of retirement living schemes some housing providers also offer support packages to residents in general housing. Many of the referrals for these come from local authorities or the NHS.

How does technology play a role?

Currently the core technology that is deployed across these services is a pull cord alarm call system. This alarm system is designed to offer residents a way to call for help in case of an emergency and to check in with a scheme's support manager. For many residents this system functions as peace of mind or a fail-safe if an accident should occur.

1: DWP & DCLG, 2016

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Where residents have greater support requirements a range of sensors can be installed; these can include, for example, fall or door sensors. These systems are monitored by monitoring services that can be run either directly by housing providers or by third party service providers. They are responded to by either frontline staff in housing associations following a triage, or out of hours by a range of emergency providers and GPs.

Outside of blocks and clusters, individual properties may be fitted with a dispersed alarm that connects to an existing analogue phone line and is monitored in the same way as a pull chord alarm in a scheme

The infrastructure underpinning this technology is predominately analogue telephone lines, although some schemes are moving to IP based systems. Current analogue systems have extremely limited bandwidth restricting the types of services that can be integrated with the alarm hardware already in situ.

In many of these analogue set-ups, only one resident in a block can reach the monitoring centre at a time and connection times can be up to 90 seconds.² Much of the cabling connecting the analogue system has been repaired many times and there are increasing issues with underground and over ground cabling country wide.

Many schemes provide wi-fi in communal areas which is paid for through the resident's service charge. Some residents use this to access the internet; however, an increasing number have dedicated broadband installed to their flats through a range of providers.

With changing demographics and aging technology, the sector is considering making investments in new technology that can support their residents to live higher quality independent lives and that enable the housing provider to deliver a more efficient and effective service for residents. For some housing providers there is also the opportunity to deliver new added value services funded by either the resident or their family or commissioned by local authorities or other support agencies.

2: Appello, 2017

Sector priorities

HACT conducted research with Anchor, Curo-Group, Hanover and Riverside Group to understand the sector's priorities for delivering services to their residents. The following five areas represent the approach and the outcomes that housing providers would like to move towards. Technology providers should seek to respond to these drivers in the products and services they offer.

1 Service design

A key priority for the sector is to improve its interaction with residents and to improve the residents' experience of the services provided. Housing providers identified that the current technologies in place are often reactive, sporadic and designed for a limited number of critical use cases while in practice are often informally used by residents for a number of additional purposes. For example, some residents pull the alarm cord to speak to someone not due to an emergency but out of social isolation or loneliness.

Clearly this is an issue that housing providers want to assist with, but the pull cord alarm system is at best a reactive tool for this purpose. For example, one housing provider reported that the most frequent alarm pull request was a request for doors to be opened.

The sector is keen to engage with technologies that allow them to deliver a service directly designed to deal with the types of practical assistance and support residents require

and to deliver wellbeing and independence outcomes. Housing providers are keen to engage with a service design approach that encourages communities to self-care and lets residents' practical requirements and desire for a positive customer experience dictate the services and underpin the technologies provided. This aligns with the sector's broader goal of providing modern homes people want and choose to live.

2 Wellbeing and independence

Enabling independent living is a key service outcome for housing providers who aim to ensure residents remain as independent and living in their homes for as long as possible. Key to this goal is promoting resident wellbeing and ensuring safety.

Current technologies have a respectable record on safety, with good reliability. However, it is felt that they do not engage with resident wellbeing and lifestyle. Technologies should focus on delivering safety and reliability while enabling resident independence and ease of daily living so that residents can be in control of their lives, but also have the reassurance that support is available should they need it.

As an example, most of the current telecare systems require the resident to actively pull a cord or push a button to trigger an alarm that will direct them to a call centre in an emergency situation. Telecare systems that can

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be triggered remotely via a familiar consumer device such as a phone or appropriate wearable device are automated so the resident does not have to actively do anything to trigger an alert, may further aid resident independence and safety.

False alerts can be costly, so future tech needs to demonstrate its accuracy and reliability. Systems that can also direct alarm calls to friends or family of the resident as the first point of contact can help them contribute to the support of the resident. There is also scope for applications and hardware that can provide prompts such as reminding the resident to take their medication and notifying other people if medication is missed.

Software can be deployed to assist carers, family members and scheme managers to record the wellbeing of a resident and provide access-controlled sharing of this information with key stakeholders to coordinate the monitoring and support delivered. It can also assist with building up patterns and early identification of health and social care issues.

Assistive technologies should be a component of better resident wellbeing. Loneliness, social isolation and lack of resident engagement are some issues residents face that housing providers would like to address. Future technologies could potentially facilitate increased resident engagement in activities and services offered by the housing provider

and the community while enabling residents to communicate with friends, family and other residents. This would promote independence and establish networks that improve resident's safety and wellbeing.

Independence, safety and wellbeing outcomes

The key outcomes for wellbeing and independence that housing providers are working to achieve include:

- To prevent residents from going into residential care homes or hospital admission;
- To prevent social isolation and loneliness;
- To keep residents healthy and in their homes;
- To identify health conditions at an early stage;
- To encourage residents to be involved with planned activities and in the community;
- To enable residents to feel in control.

3 Technology

The sector is keen to move towards technologies that are proactive, attractive, simple to use, and can be integrated with internal systems. Housing providers report that internet use is going up among residents.

Our research with housing providers found that about half of residents have access to the internet, with the number increasing by 20% over the last two years. Another survey found only a tenth of residents in retirement living had access to or used any form of the internet.

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While the data may be inconsistent and differs across housing providers, what is clear is that the use of the internet of those coming into retirement living homes is changing. New residents have often used or are using technology as part of their work and social life. Their aspirations are changing, and they expect more modern, consumer orientated technology when choosing their retirement living accommodation.

However, residents need to be able to learn any tech offering easily and it needs to have obvious benefit and functionality to drive its acceptance, particularly among those who are less familiar with technology.

Current technology is often institutional in design and a world away from the type of technology most people encounter and use every day. New assisted living technology should look to take the best of the usability and aesthetic design of consumer technology and combine it with the more rigorous demands of reliability and safety required in retirement living.

Using familiar consumer devices and interfaces such as voice activated software is a way to drive engagement with technology, reduces stigmatisation associated with existing pull cords and pendant alarms, and opens up the potential for a much wider array of services to be provided.

The ability to integrate with smart home technology such as smart thermostats, lighting, locks and automated blinds is a feature that both housing providers and residents are increasingly considering. These integrations offer benefits to resident wellbeing and lifestyle and could potentially be offered by the housing provider as part of an enhanced service offering. Additional device in an ecosystem brings additional data points which can, as outlined in section four, offer the potential to deliver valuable insights for housing providers.

Technology can also offer benefits to institutional stakeholders such as the NHS, emergency services and adult social care. Technology can be deployed to meet outcomes institutions are trying to achieve and should ideally be able to help demonstrate these outcomes have been met. For example, technology that could support the monitoring and treatment of diabetes could be a new revenue stream for housing providers working in partnership with the NHS.

Beyond assistive technology that focuses on resident wellbeing and independence, solutions can also improve access to housing provider services. Technology that allows residents to report repairs and pay rent online is already well established in much of general needs housing. Digital access to these services could have the biggest impact for those in retirement living housing.

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Infrastructure and future proofing

While housing providers would like to use the latest consumer technology they are aware that technology in this space moves quickly. They do not want to be locked into hardware, software or infrastructure that will become obsolete.

The future of assisted living technology will need to reflect changes in the way technology is being deployed in other sectors. Moving towards increased openness and interoperability and more flexible platforms that allows for increased choice and options for new devices to be deployed to reflect changing technology trends and consumer preferences.

A platform-based approach also offers the ability for housing providers to vary their service offering based on resident needs. Currently the alarm-based system functions in the same way for all customers. Housing providers now have an ambition to provide a more bespoke offering that meets the specific support needs of their residents. Scalability is key here with the option for more sensors or devices to be deployed as, for example, a resident's health deteriorates.

4 Data as an asset

Service design and technology solutions should be data driven. Housing providers would like better data on their services for three key reasons: predictive interventions

and care; demonstrating outcomes; and service design. To facilitate each of these areas the ability to report on data collected from sensors and other input is key.

Reporting functionality should also be accompanied by tools that help draw insights and ideally automate processes, responses and actions.

Predictive interventions and care

For some residents the quality and effectiveness of support and care offered could be drastically improved through the use of data. Sensor data, for example, can be analysed to look for deviations from normal behavioural patterns, which would then generate an alert for family, support worker or health worker. Changes in behaviour could indicate deteriorating health.

Any use of sensors, data collection and data analysis will need consent from the resident and offered as part of enabling residents to have more control over their lives and their health and wellbeing.

Demonstrating outcomes

Technology that can help demonstrate positive health and wellbeing outcomes can support housing providers in understanding if their services are effective. This helps housing providers work with partners to deliver commissioned services and is covered in more detail in the next section.

Sector priorities

Service design

Data driven systems would be especially useful for future insights that the sector can utilise to enhance their services and deliver more personalised support and care. There is limited data on how older people are currently using technology. A better understanding of this would drive service design that responds to user needs more effectively. Understanding resident preferences, both explicit and implicit, can underpin successful deployment of new services to ensure technology is effective and acceptable to users and staff.

5 Partnerships

When residents need additional care, services are often commissioned by health and social care. Housing providers need to demonstrate they are delivering the outcomes commissioners are looking for to be eligible to provide these services. Demonstrating key outcomes such as reducing the incident of residents entering residential care homes and hospital is an important priority for the sector.

If housing associations can utilise technology to evidence key outcomes to commissioners, this increases the attractiveness of housing providers as delivery partners. Systems that allow CCGs and local authorities direct consented access to the data on the referred patients are highly valuable and could help housing providers when developing new relationships with these institutions.

The housing sector and its front-line staff are under increasing pressure to ensure resident wellbeing and safety with limited (and reducing) resources from social care.

There is an opportunity for technology enabled solutions to be at the core of partnerships that create alternative support services so residents can easily find and access different activities and services that are relevant to their needs.

Potential barriers

While housing providers are excited about the potential for new technology in supporting the delivery of better outcomes for residents, the sector is aware of a number of potential barriers to adoption. These should be considered by any technology provider looking to build products and services for the sector.

These are the sector's top five potential barriers.

1 Regulations

Many housing providers are TSA (Technology Enabled Care Services Association) accredited and are likely to look for providers and services that meet TSA industry standards of quality and safety.

This became especially important after the death of a telecare service user in 2015 and subsequent parliamentary debate. The Department of Health urged Technology Enabled Care (TEC) commissioners to procure only from accredited providers.

While technology providers should aim to meet TSA quality standards, it is recognised that new technology is moving at a rapid pace and current standards may not cover all the use cases, features and technical specifications of the most innovative solutions.

For example, it is expected that social alarm systems should comply with British Standard BS8521 which specifies the requirements to ensure that different manufacturers of remote

control and alarm receiving equipment have a common signalling protocol. This only covers analogue systems and a standard for IP based systems does not yet exist.

Where regulation doesn't exist or only partially applies, technology vendors should seek to show that their devices and services are robust, reliable and safe, in line with the principles that the sector and TSA have set out. There is an opportunity for housing providers and technology providers to work together to develop new thinking about the relevant regulations and standards for future technologies and to guarantee the safety of future technology while accommodating the need for flexibility around the new technical protocols and functionality that comes with new tech.

2 Costs and funding

The most common funding model in retirement living housing is for the end user to pay for the pull-cord alarm and associated service as part of their service charge. This service charge is sometimes met by the local authority or NHS. Additional services beyond the basic pull cord will usually be funded by the residents or their family. This means that technology providers should consider the ability for residents and their families to pay for end-point devices or obtain funding to pay for them.

There are, however, many housing providers allocating resources towards establishing the

Potential barriers

infrastructure required to support the next generation of assisted living technologies including connectivity, backbone alarm systems and monitoring systems and services. There is an opportunity to work with the sector to establish the infrastructure for future assisted technologies to ensure it is capable of supporting current and future devices and functionality.

Housing providers are risk-averse organisations with constrained budgets, and it can be a challenge to demonstrate the value of new technologies and help those organisations manage the associated risk.

Pilot schemes can help prove the viability of new solutions but will require the housing provider to hold a research and development budget. Some organisations will be reluctant to move away from proven technology, even if its functionality is limited.

To overcome this barrier, it might be helpful to offer parallel schemes so that the new technologies can run alongside older systems to demonstrate effectiveness and other concerns such as usability and durability.

Technology providers need to be mindful of the different demographics of those who live in retirement living accommodation. For example, benefit recipients and social housing tenants may have less disposable income than private leaseholders. Another challenge may be to

develop solutions that work for those with different needs and resources, including end-point devices available for a range of budgets.

3 Resident choice and trust

Resident trust is extremely important for housing providers. New technology needs to win residents' confidence and developers need to be sensitive that some residents will be less familiar with some of the technology used regularly in the general population. To build trust, technology providers need to convince residents that their products and services are safe, robust, and reliable.

Usability is also key; products that are intuitive and deliver value to the resident quickly are more likely to be accepted. Using consumer technology, which has been thoroughly tested for usability, can be a way to achieve this trust.

Technology solutions should be sensitive to privacy. Overly intrusive systems may be rejected and any solution deploying monitoring via sensors will need to clearly articulate the value to the resident to ensure their full consent and buy-in. Technology providers will need to work with housing providers and residents to strike a balance between solutions that promote independence and maintain resident privacy.

The sector has also voiced concerns over resident uptake of new technology. Without this the most innovative solution fails to offer

Potential barriers

value to anyone. Key to overcoming this barrier is ensuring that technology is deployed with sufficient support for residents, their family and staff, ensuring all stakeholders recognise the value proposition of the technology, even though the value proposition may be different for each stakeholder.

New technology should be easy to understand. This means technology providers should ensure the end user can understand the rationale and value of the new technology. Ideally technology with a short learning curve that can be delivered with simple training should be deployed. If customers do not understand the technology solution, they will not buy into it.

Finally, it is paramount that residents have a choice so that any add-ons are willingly chosen for by residents.

4 Integration and infrastructure

Housing associations tend to have a limited budget to spend on new infrastructure technology for retirement living housing and will make a large investment on this very infrequently. It is therefore important that it is spent on the right technologies that meet both current and future needs.

There are a number of challenges technology will need to traverse to be successful in the retirement living housing sector.

Availability of wi-fi

Currently wi-fi is available in many but not all communal spaces. Some residents may have personal broadband connections and wi-fi in their flats, but many do not. This means the availability of this type of connectivity is not guaranteed.

Technology providers will need to look at working with housing providers to deliver the right connectivity for their service offer be this wi-fi or another form of connectivity.

Reliability

A key feature of the existing retirement living technology offer is its reliability. A person's life can depend on the reliability of their telecare equipment. Housing providers see that what it lacks for in features it makes up for in resilience. New technology will need to try to match this reliability and may need to demonstrate resilience and fail safe systems in ways the sector may be currently unfamiliar with.

Rural locations

Some retirement living housing is in remote and rural locations. This means the availability of broadband or 4G can be unreliable. To be able to serve these locations technology providers will need to look at how their services can operate in low bandwidth areas.

Integration and data sharing

The best solutions will be able to utilise data from across the organisation providing insights

Potential barriers

based on the wealth of data housing providers already have. This could be combined with new data points collected by sensors and applications, offering staff the ability to access this information in the field.

Building systems of this type requires complex integration which is both a technical and governance challenge. Many legacy systems are bespoke and inflexible and do not have open APIs, requiring work arounds to be implemented to pull data in or out. Much of the data handled in retirement living housing will be personal and sensitive and therefore ensuring appropriate access control is important.

This challenge is even greater when it comes to sharing data with institutions such as the NHS. Handling personal and sensitive data systems should be GDPR compliant.

HACT's *UK housing data standard* is an attempt to help both housing provider and technology providers to achieve integration and data sharing by setting out a sector defined set of data descriptions and their relationships alongside data exchange standards.

5 Staff

Staff buy-in is fundamental to the success of new technology in the sector. The profile of staff is mixed so newer managers may be able to adapt to changing technology while others may find it more difficult to transition. New

solutions should be easy to use and integrated with existing systems where possible. Avoiding the need for multiple log-ins and dashboard hopping significantly improves the user experience for staff.

When introducing new systems that significantly change aspects of the way staff work, particularly where some tasks are to become automated, it is important to get deployment right first time. A problematic roll out can damage staff buy-in and make it more difficult to deploy technology in the future.

Testing systems thoroughly, ensuring staff are well equipped before go-live, and obtaining front-line staff input so they feel ownership of the new technology being implemented can prevent issues during roll out. Ultimately if the technology is good enough and staff are engaged, staff concerns should be alleviated. This requires good communication and education to accompany robust technology.

As noted above, system integration can require data sharing between organisations. Due to the sensitive nature of data on residents and their health, this can make integration more challenging than in other areas of the housing sector.

Key recommendations

For technology products and services to be successful in the retirement living sector providers should look to meet the following.

Technology products and services should:

- Be attractive, simple to use, and non-invasive for residents;
- Have a clear and easy to understand benefit for the resident;
- Designed to meet the current needs of residents but be flexible enough to accommodate additional and changing needs over time;
- Focus on enabling resident independence, facilitating their ease of daily living, promoting wellbeing and ensuring safety;
- Be robust, reliable, and future-proof with the option to be integrated into core or existing systems;
- Be data driven to facilitate predictive interventions, demonstrate positive outcomes and enhance service design;
- Promote the delivery of, and evidence, key outcomes to demonstrate the effectiveness and impact of support services;
- Be a cost-effective alternative to existing assisted technology.

Technology products and services should consider and aim to address:

- Regulations and industry standards, such as TSA quality standards, and where regulations partially apply technology vendors should seek to show that their devices and services are robust, reliable and safe;
- The limited opportunity for large scale investment by providing futureproof infrastructure;
- The sector's desire to use open protocols and facilitate an eco-system approach to software, hardware and connectivity;
- Resident trust and privacy concerns through engaging users and their families;
- The challenges of integration;
- Staff engagement through delivering solutions staff will love to use.

HACT

HACT is an innovation agency that provides futures-oriented solutions, projects and products for UK housing.

HACT delivers thought leadership and drives new ideas for business transformation through our platform of research, impact measurement and data analytics, as well as through our engagement with other sectors and our work on connected technologies.

We work alongside housing providers to drive change within their own businesses. HACT helps housing providers maintain and refine resilient and successful businesses by generating actionable evidence to inform the development of new, smarter, and more efficient ways of working.

About the HACT Innovation Launchpad

HACT's Innovation Launchpad sits at the interface of the housing and technology sectors. The Launchpad exists to showcase the best of new technology for the housing sector, developing the sectors understanding of the opportunities offered by emerging tech and translating the latest trends for the housing context. We connect housing providers with technology providers looking to pilot, test and deploy new technologies and support the sector to evaluate these project.

We work with technology providers looking to access the housing market providing market intelligence, product development and a platform to reach the housing organisations embarking on digital transformation.

Our goal is to ensure the social housing sector realises the benefits that new technology can bring.

If you would like to discuss how HACT can help you work with the housing sector contact: info@hact.org.uk

References

Appello. (2017). Fast Forward to Digital Care – Opportunities in digital care a priority for housing providers.

Department for Work & Pensions (DWP) and Department for Communities & Local Government (DCLG). (2016). Supported Accommodation Review: The Scale, Scope and Cost of the Supported Housing Sector. Research Report No 927.