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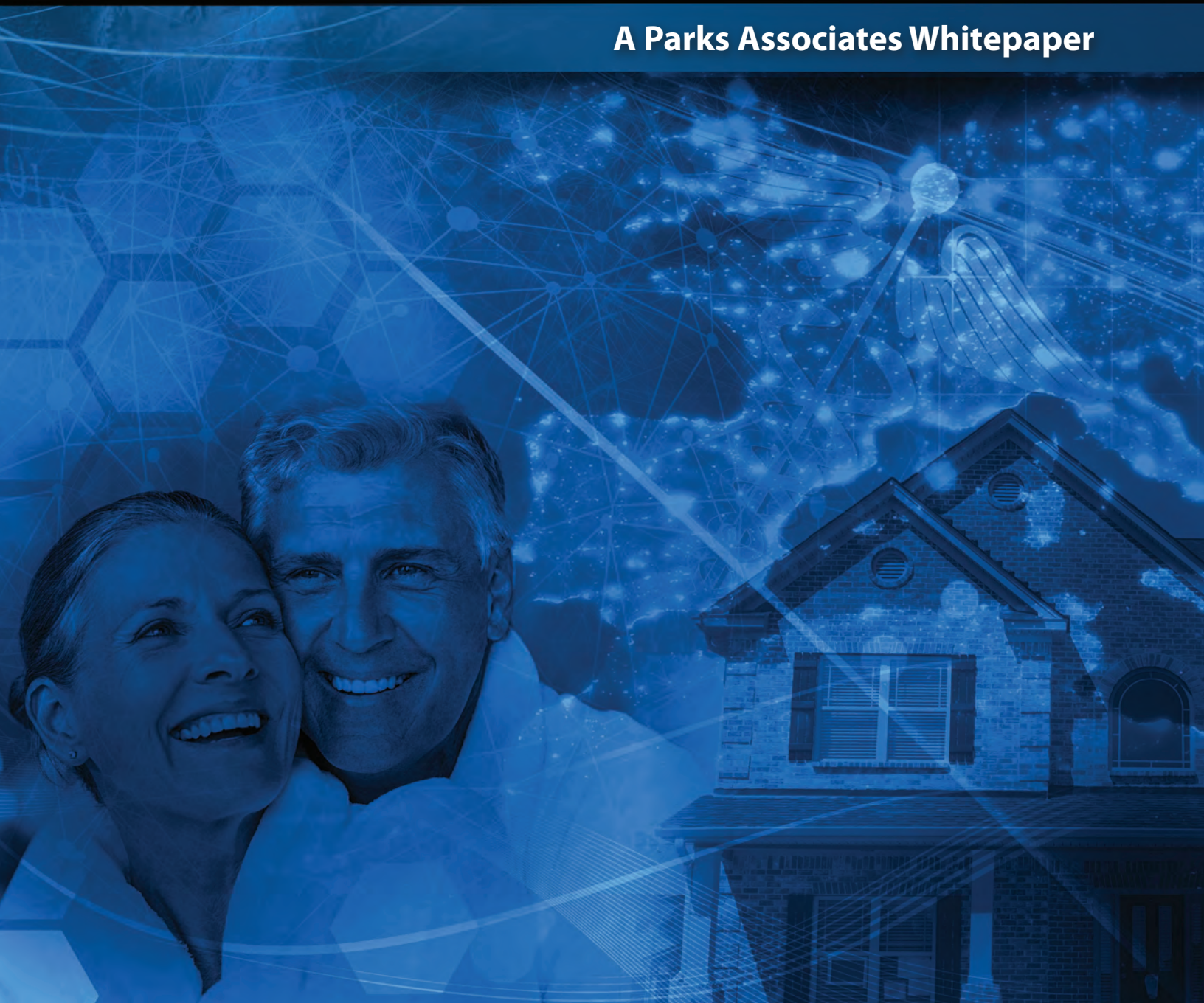
Telecare in the EU: Smart Home and Independent Living

A Parks Associates Whitepaper



Telecare in the EU: Smart Home and Independent Living

Introduction

The EU population is growing, and improvements in health and welfare mean that the average age of the population is rising. In the UK, 11.8 million (18%) of the 65.6 million population are now over 65; this is expected to rise to 13.9 million (20.2%) out of 69 million by 2025.

Traditionally, the elderly and those at risk in the home would move into care, but the increase in the aging population places huge pressure on welfare systems across the EU. Latest figures suggest one in four hospital beds in the UK are occupied by people with dementia – and 20% of these admissions are due to preventable causes such as falls .

> Remaining in the home is the most important aspect of retired life for most seniors.
>
> © Parks Associates

> There is an urgent need across the continent to support aging-in-place and independent living.

This whitepaper explores how smart home technology can support independent living and explains the benefits for both telehealth and telecare. It focuses on what could be considered the mass-market application to support independent living: telecare.

IoT IN THE UK: CONSUMERS *and* TECHNOLOGY Adoption

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Parks Associates' 4Q 2018 research *IoT in the UK: Consumers and Technology Adoption* surveyed 5,000 UK broadband households on their connected lifestyles, including connected health and wellness, and while the data is UK based, many households across the EU are struggling with the same challenges.

[1] UK Office of National Statistics. Overview of UK Population November 2019

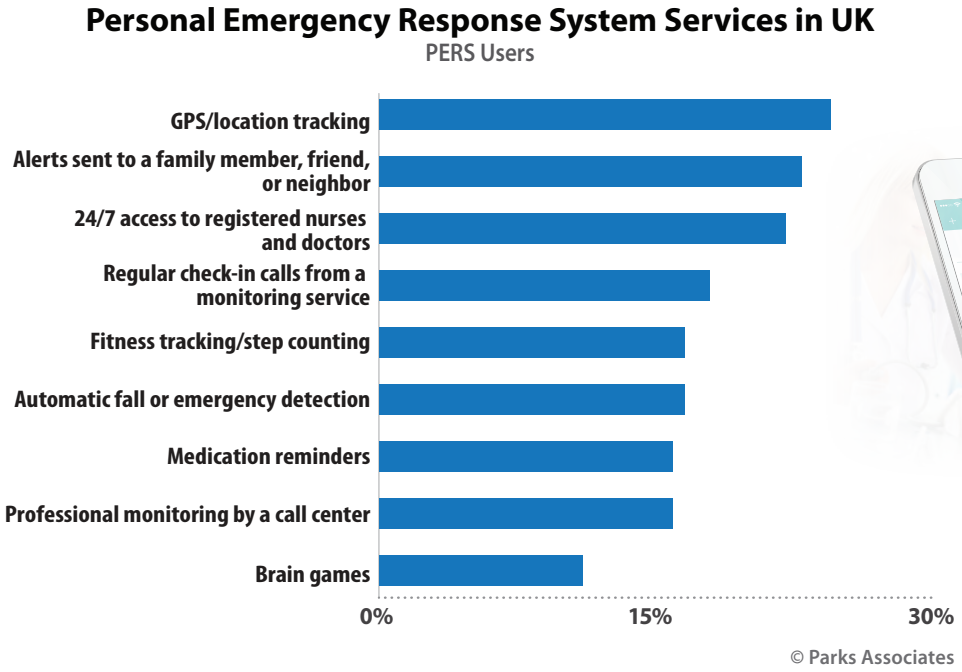
[2] UK Dementia Research Institute. Launch of DRI at Imperial

Smart Home Technology for Independent Living

Telecare and telehealth are two key areas where smart home technology can support independent living.

Telecare is the ongoing delivery of care and living services to patients, delivered remotely via telecommunications technology, either synchronous (live video) or asynchronous (through the use of video, storage, and remote monitoring technologies), with the use of emergency alarms to enable the unwell, disabled, or elderly to receive care at home so that they can live independently. Telecare can enable independent living among people who, due to advanced age or physical/mental challenges, need extra or constant monitoring and care.

Existing emergency telecare services use Personal Emergency Response Systems (PERS). These are usually push-button pendants that will alert caregivers or professionals. In the UK, 11% of people 75+ in broadband households have traditional PERS solutions that depend on users to wear them and initiate alarms.



The smart home offers an opportunity for telecare to move beyond reactive systems like PERS to more proactive solutions. Instead of waiting for someone to trigger an alert, data from sensors in the home passively monitor and identify potential issues.

Connected devices, combined with cloud computing, artificial intelligence (AI), and machine learning (ML), will reinvent the telecare market.

The home will be the conduit for monitoring those at risk, collecting and analyzing data, and automatically reacting to events and conditions.

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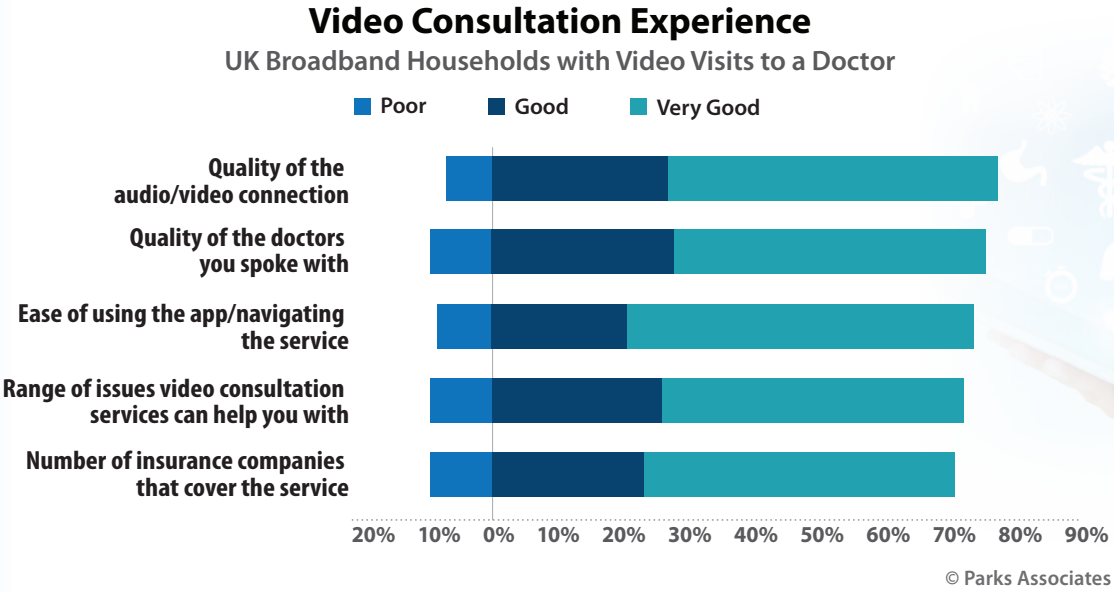
Telehealth. Connectivity in the smart home will also redefine and enhance the ability to monitor and manage specific health conditions. Telehealth, in contrast to telecare, involves the use of connected technologies to deliver healthcare, including treatment and monitoring of both acute and chronic health conditions.

Eight percent of UK broadband households have recently used a virtual consultation service with a medical practitioner — 75% rated the quality and ease of use as good or very good.

Patients using virtual services were overwhelmingly positive about the experience, and at a time when people worry about privacy and security concerns, they valued what they saw as anonymity and convenience above the risks.



Telehealth services will also benefit from the integration of wearables for health tracking and fitness into the smart home ecosystem.

In the UK, 35% of broadband homes own at least one connected wellness/fitness device, and this rises to 39% in people managing chronic conditions.

The opportunity for devices to help manage chronic conditions increases exponentially within a smart home where data can be readily collected, conditions remotely monitored, and communication made simpler through virtual interfaces.

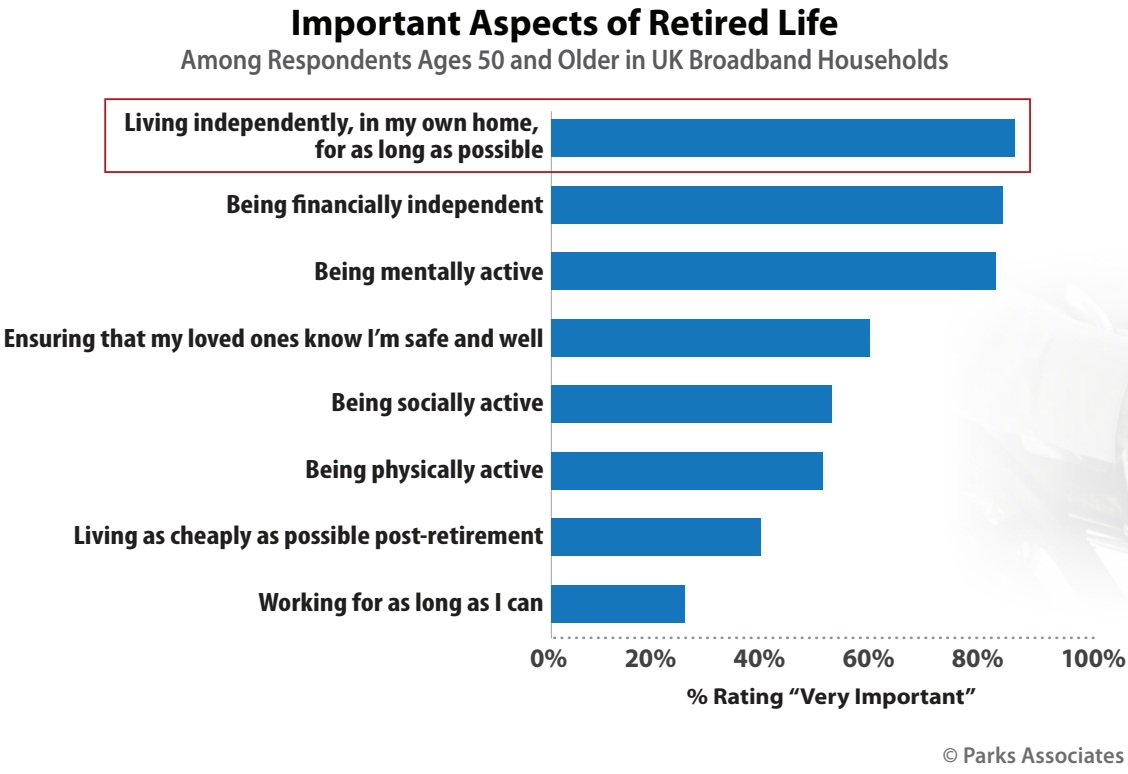
The potential benefits of smart home in telecare and telehealth applications can best be demonstrated by looking at the challenge of dealing with an aging population and the issue of dementia. In the UK, Imperial College London has secured £20M in funding from investors including the Medical Research Council, Alzheimer's Society, and Alzheimer's Research UK to showcase how smart home technology can help people suffering from dementia.

"The new technologies we develop will improve our ability to support people in their homes. They will allow us to intervene at an early stage, to prevent the crises that so often lead to hospital stays, or a move to a care home." - Professor David Clark, Imperial College London[3]

[3] https://www.mobihealthnews.com/content/home-new-frontier-dementia-research

The Market for Smart Home in Telecare

The Imperial College project is performing an important role identifying how smart home can help those with dementia by looking in detail at both telecare (remote monitoring) and telehealth (clinical condition). However, **in caring for the aging, the mass-market need for smart home is in telecare**, where research shows the elderly see independent living as the most important aspect of their life.



Integrating smart home technologies into the telecare market presents challenges because there are multiple customers, each with their own particular needs, and a mix of both private and public channels:

Seniors. The elderly comprise the majority of end users for telecare services. Typically, they would be considered the customer, but telecare is an unusual market where a family member or caregiver is often making the buying decision, while the user can be reluctant to accept the service.

Caregivers. Caregivers are usually family members who live apart from their relatives and want to find ways to help manage their care and secure peace of mind. Parks Associates research shows that their priorities are broadly aligned with the family member because they also want to find ways to help them stay in their own home for as long as possible.

Public Healthcare Sector. In the EU, most care homes and telecare services are funded and managed by public healthcare organizations. The nature of the management can vary between countries, but in the UK, the services are usually delivered by local councils who have responsibility for the provision of social services within their designated area. In the public sector, most products and services are supplied free or heavily subsidised.

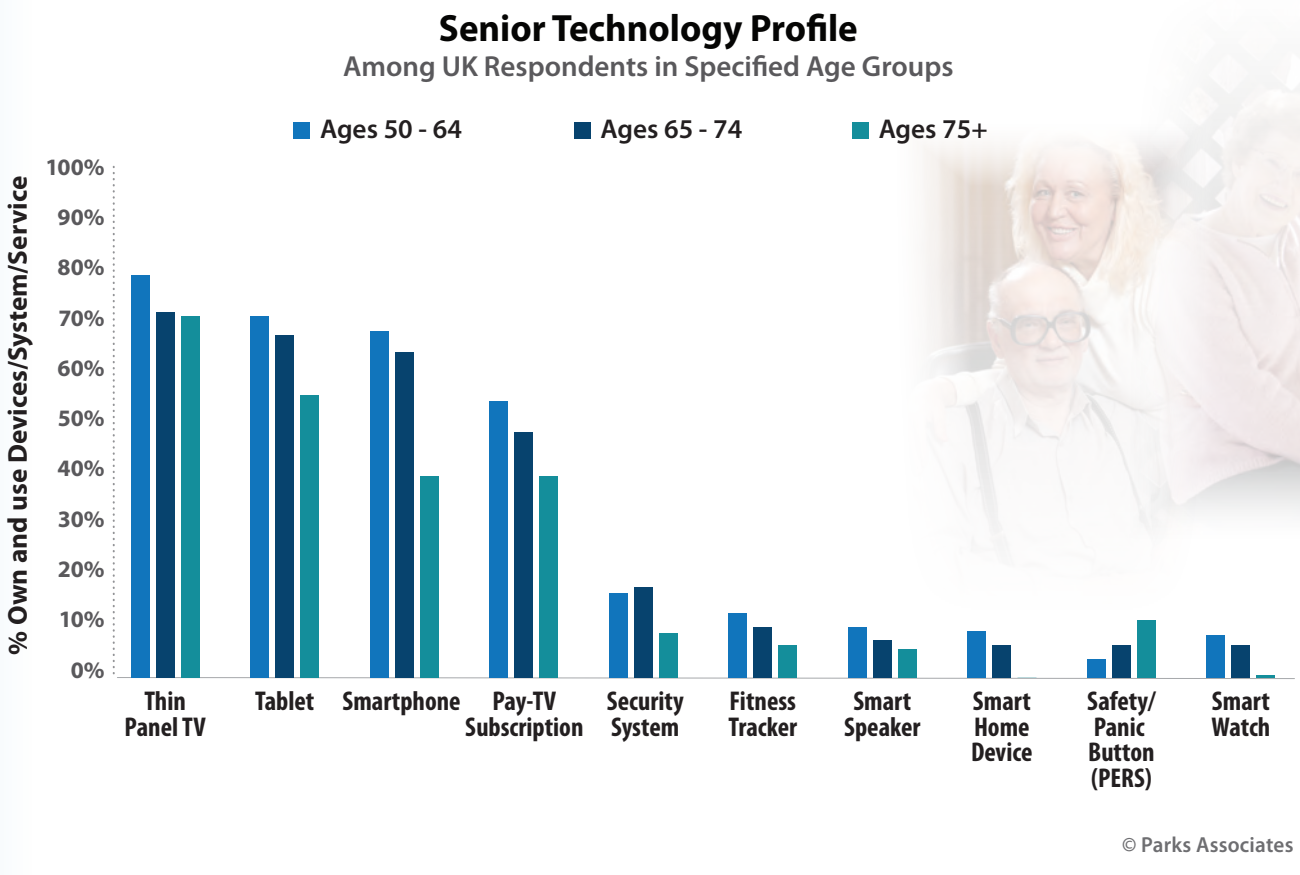
Private Healthcare Providers. There are many private companies that offer products and services direct to end users, to caregivers, and to the regulated healthcare sector.

Telecare - A Market Ready for Disruption

These dynamics, the structure of the market, and an aging population create a pressing need for a new way to deliver telecare and support independent living, and the key enabler for a disruptive new approach is smart home technology.

To date, early adopters and millennials have driven the smart home market, but people over 50 are becoming more aware of the benefits of connectivity and are likely to be strong supporters of smart home for aging in place. Their familiarity with technology such as tablets and smartphones is high, so as users, they recognise the important role connected devices can play in enhancing their lives and staying in contact with family members. In addition, the new generation of smart home products and services are relatively simple to use, affordable, and scalable, which will help drive adoption and use among all consumers.

The true game changer for the telecare market is the ability of the smart home to extract real-time data from a broad range of low-cost sensors and devices. This data can be used to model behavioral patterns, manage the environment, and drive operational efficiencies when delivering telecare services and developing predictive care models. For example, for suppliers, monitoring various service deliveries and care visits with real-time data from the home can inform them on the needs and priorities of their customers. For caregivers, simply knowing that someone is out of bed and moving around normally is a huge step forward in telecare.



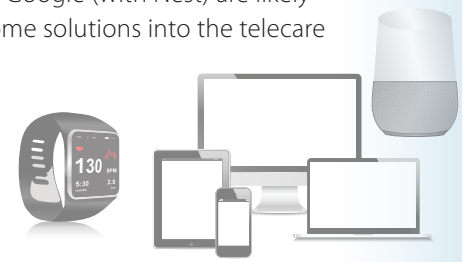
Disruption through New Channels

New players are starting to recognise the opportunity to use connectivity and smart home technology to disrupt the existing telecare market. In the UK, award-winning startups such as MyLiferaft, Howz, Your Alcove, and TEC Angel are among several companies starting to put increased pressure on traditional market leaders such as Tunstall, Tyntec, Aidcall, and Chubb with B2C plays.

In adjacent market sectors such as home security, companies are recognizing that they can compete in the telecare market. Across the EU, companies such as ADT, Securitas, Resideo, Alarm.com, and Prosegeur are working to add new features to their traditional security products to compete in the space. These companies can leverage their dealer networks and could see strong growth if they can get their business models right. In the UK and EU, where penetration of monitored alarm service is low, telecare could become a stronger market than security.

Other new channel entrants include major telcos such as Deutsche Telekom, Vodafone, and Orange, which are expanding their smart home offerings to support telecare. Energy utilities have started to deploy telecare offerings with companies like British Gas and EDF offering telecare products and services to their customer base. In addition, Legrand has made a number of acquisitions in the telecare space to attack both B2B and B2C opportunities.

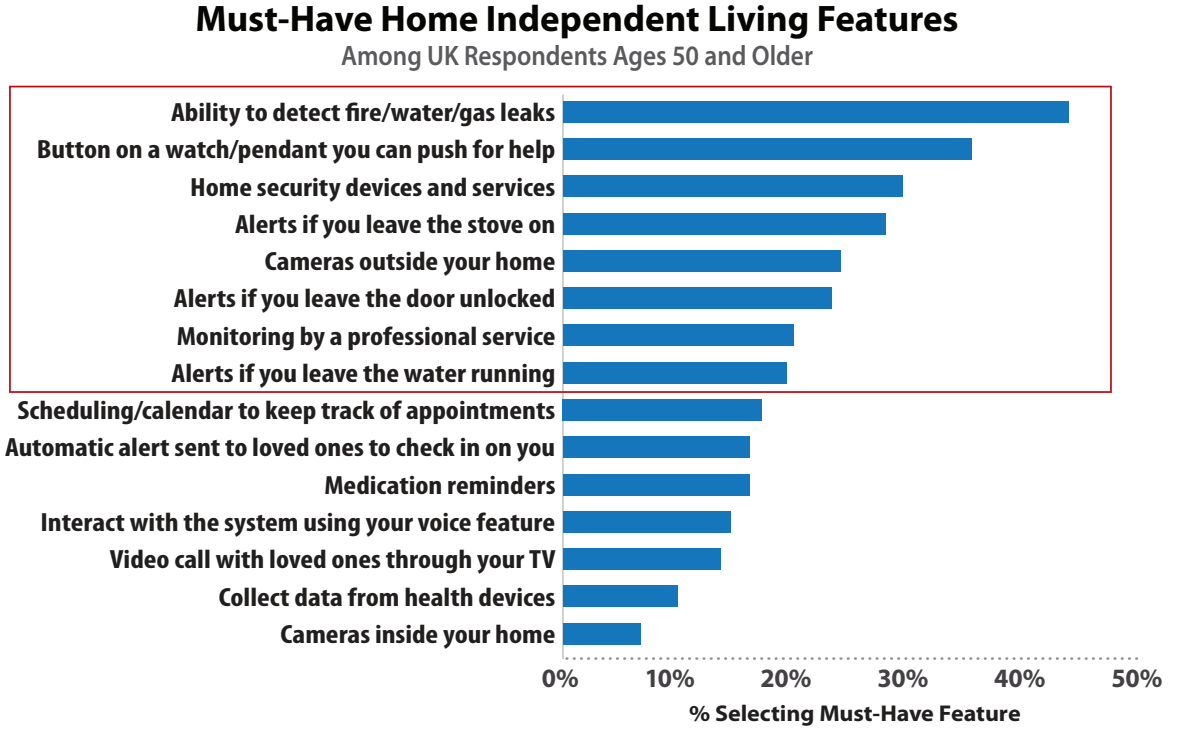
In retail, the do-it-yourself (DIY) market is getting particularly active with established players like SmartThings and Yale offering simple, affordable, and scalable telecare solutions direct to consumers. These are likely to face new challenges from tech giants as Amazon (with Ring) and Google (with Nest) are likely to extend their smart home solutions into the telecare field.



Strategy for the Smart Home in Telecare

Telecare is no different than any other market in that the success of the various companies competing in this space will depend on executing an effective go-to-market strategy.

Parks Associates research gives a clear picture of what seniors and their caregivers see as important, and although there are some differences in priorities, both groups identify safety and security as key requirements in any solution. Smart home technology can be readily tailored to meet these needs, and cloud platforms can present the data to the various channels.



Seven High-level Guidelines to Deliver New or Enhanced Telecare Services

Entry-level Propositions. Start with simple, entry-level smart home solutions with products and services that will appeal to the mass market:

- Create products and service bundles that can collect data through passive monitoring and facilitate predictive services with the use of ML and AI that can learn patterns and recognize normal/abnormal conditions in the home.
- Exploit cloud platforms to support interactive control and rules-based management of connected devices; for example, if the temperature in a home drops too low, the system will send alerts and/or switch the heating on automatically.
- Provide flexibility so that systems and services can be tailored to each user and channel partner.

Scalability. Adopt solutions that can scale to support a menu of products and services that are attractive and meet the needs of your target demographic groups.

Open Standards. Adopt open standards, such as Zigbee, Z-Wave, Wi-Fi, ULE, or BLE, to offer the broadest range of support and interoperability.

Support. Work with support organizations familiar with the challenges in the smart home, like Trusource Labs or Support.com, as the provision of tiered support for products and services, which ensures a positive user experience, will be a critical success factor.

Business Models. Develop business models that drive adoption in the home, setting the stage for a long-term relationship with the user and a return on investment through recurring service revenues:

- For the public sector, smart home products and services for telecare could continue to be subsidized or be offered free of charge and funded from the savings generated by keeping people in their homes for longer. In addition, the public sector could consider leveraging their infrastructure investment by offering services to a wider market. While the percentage of seniors is growing, so is their disposable income—the UK's Office for National Statistics reports that the median disposable income of retired pensioners grew faster in the last 10 years than non-retired households. With this added financial flexibility, they and their caregivers could have the means to add supplementary features and services that give them greater peace of mind.
- For the private sector, many seniors and their caregivers would be willing to pay a monthly subscription for premium services that the public sector is unwilling or unable to supply.

Services. Use cloud-based smart home platforms, which are essential for comprehensive care management and help simplify deployment, reduce costs, and add value; Microsoft Azure and Amazon AWS both offer platforms with all the tools essential to build out telecare and telehealth services.

Partnering. Find and secure good partners, which will minimize commercial risk and help ensure a successful offering; the IoT and smart home are a complex mix of technology, products, and services so partnering to execute a strategy will be a critical success factor.

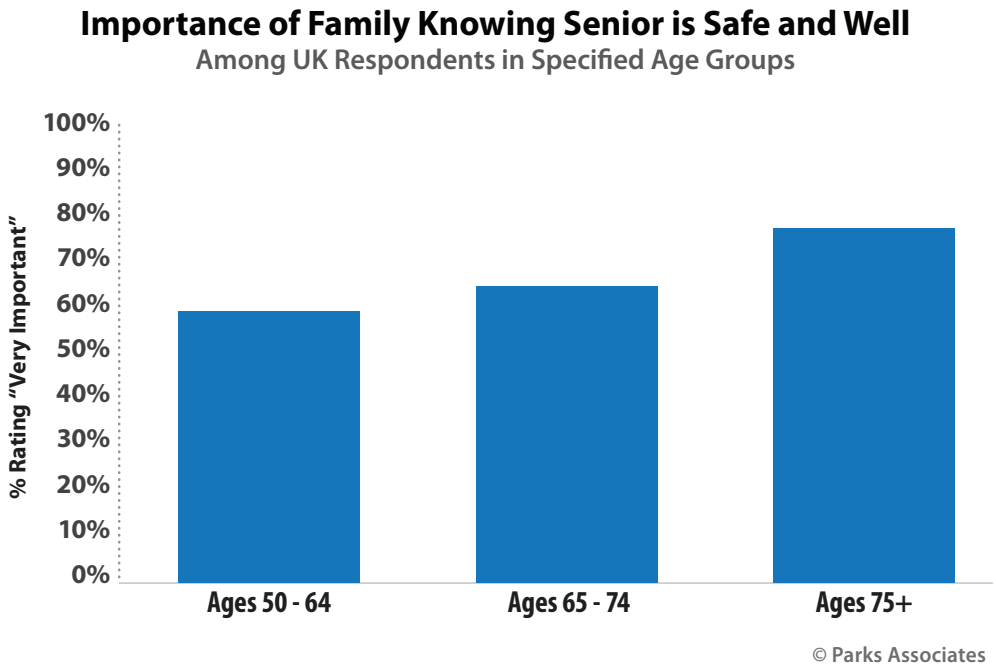
People 50+ value safety and security, so positioning solutions as protection rather than care could help adoption.

Telecare may prove to be a good market for the UK's public/private partnership initiatives.

Challenges

There will be challenges with the integration of smart home technology to support telecare:

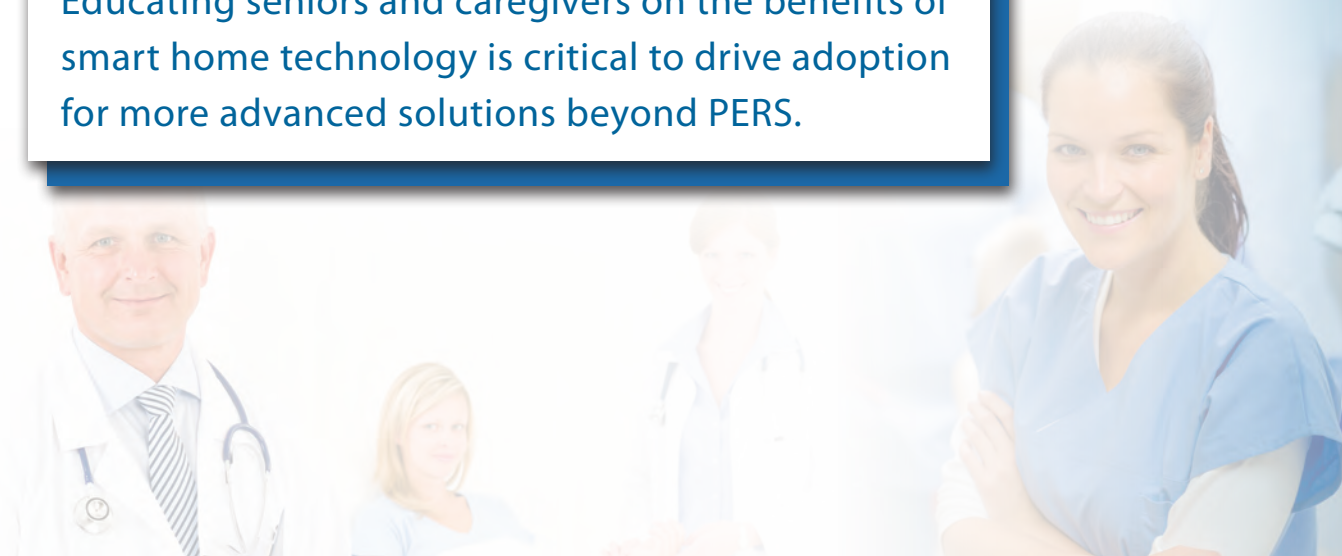
Market Complexity. The path to market is complex. The public sector is the biggest channel, but it has invested heavily in legacy systems and can be notoriously slow to innovate. The growth in smart home will begin to drive change, but private sector initiatives are likely to move faster in the early market. Some aspects of the market are simple to understand and address. Parks Associates research clearly shows that as people age, they recognize the importance of sharing information on their status and wellbeing with caregivers and family members.



Consumer Awareness. Traditional telecare solutions shape how users think about the market. For example, seniors 50+ see traditional PERS as their primary solution for their telecare, but only 11% of those aged 75+ use them. Ironically, those most in need of care are slow to accept their situation and typically wait until they are 75+ or some condition demands action before they, or a caregiver, commit to procure any service.

Among most seniors, their current perceptions of telecare take the form of the traditional PERS push-button solution because that is the most longstanding, readily available, and affordable solution.

> Educating seniors and caregivers on the benefits of smart home technology is critical to drive adoption for more advanced solutions beyond PERS.



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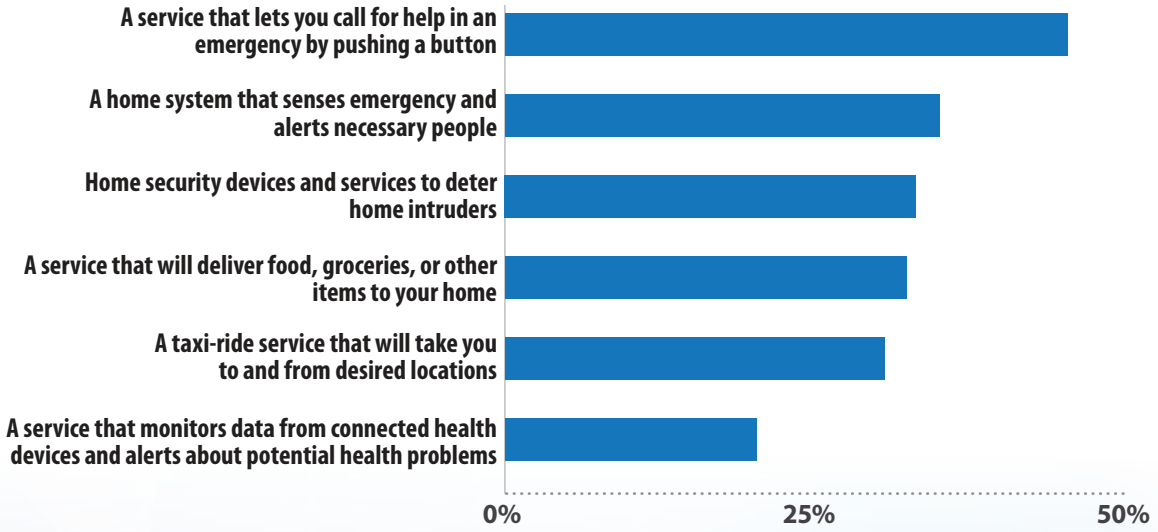
Regulation. Ensuring reliability, providing security protection from hacking, and protecting data are essential, but there are some complex regulatory issues to be navigated. The implementation of GDPR is causing confusion because the boundaries between telecare and telehealth are not well defined. In Europe, companies like Verklizan, Azava, and Kry are moving forward with deployments, but other companies have delayed deploying telecare products because monitoring of activity in the home is viewed as indicative of health and therefore that data is subjected to more stringent regulations.

Legacy systems. The public sector will be slow to embrace change because of the investment already made in their legacy systems. Companies looking to enter this space need to frame their solution so that it does not appear to be just a slicker version of current solutions or force them to abandon existing systems—smart home and PERS should not be considered mutually exclusive as they both solve different needs but together provide a full service. Public sector companies should consider deploying telecare solutions that can work with their existing systems and suppliers, rather than wait for existing suppliers to expand their capabilities.

While these challenges seem significant, they should not be a reason for inaction. There are ways to address these and successfully deploy solutions that can realize the vision of a smart home as a new way to help independent living.

Interest in Independent Living Products/Services by Country

UK Heads of Broadband Households Who are 50 and Older



Future Growth

While the smart home will be a game changer for telecare, the current products and services should be seen as a springboard for constant change and an ongoing relationship with consumers both in monitoring services and healthcare delivery.

These changes will deliver multiple benefits:

- Enable telecare/telehealth with the inclusion of medical devices, remote diagnostics, video consultations.
- Reduce isolation with systems to support social interaction.
- Enable whole-home management and integrate property management in social housing.
- Deliver greater ease of use and personalization with AI, ML, voice/gesture control, and bots.
- Use new technology such as 5G to improve scalability and capability and reduce cost.

Key Takeaways

- It is imperative to find better ways to deliver telecare to support aging in place.
- New smart home technology can be used to reinvent the way we care for those at risk in the community and ultimately replace or enhance traditional PERS.
- Smart home products and services are ready and tested, but consumer awareness of the benefits is low, so there is a need to educate the market.
- Using smart home in telecare offers a clear return on investment for the public sector and an opportunity to generate new revenue growth for the private sector.
- This is an early market, so there is a need to take a staged approach to deploying products and services using an open architecture that can adapt and scale over time.
- Partner to succeed; there are many moving parts and few organizations have all the resources and capabilities to successfully build and deploy solutions. Public/private partnerships are a good option.

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For more information, visit **parksassociates.com** or contact us at **972.490.1113** / **info@parksassociates.com**

About The Author

Kevin Meagher, *Advisor,* **Parks Associates**, *and Managing Director,* **EAS Consulting**

Kevin is an Advisor for Parks Associates and also the MD of EAS Consulting, a boutique consultancy focused on the IoT and Smart home markets.

Meagher was formerly the SVP BD at ROC Connect and VP & GM of Lowe's Smart Home initiative, Iris. At Lowe's, one of the world's largest home improvement retailers, he led the deployment of their smart home products and services through all their retail stores in the US. Kevin was also founder and CEO of Intamac Systems, a UK company offering a Cloud platform deploying smart home solutions to the mass consumer market.

Meagher has been recognized as a global pioneer and thought leader in the smart home and IoT. He has deployed smart home solutions with major service providers, utilities, retailers, and security companies around the world. He has lectured on business management and published papers at national and international conferences. Additionally, he is the recipient of numerous awards including Ruban d'Honneur as European Entrepreneur of the Year, and his company won the European Best Business Innovation Award. He has 3 patents. He has also served as a Group Captain in the Royal Air Force.

Meagher is a Chartered Engineer in Aeronautics and holds an MBA. Kevin is currently supporting Parks Associates as an Advisor for custom research advisory services.

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