

# Connected Homes: Networked Solutions for Networked Lives

## Abstract

Our lives are governed by networks – in offices, schools, cars, and homes, and now more interconnected than ever before. This gives organizations great opportunities to deliver entirely new and innovative services to their customers. It also creates new adjacencies for organizations to extend and adapt their business models based on network thinking. This is what we call Business 4.0, and is driven by machine first business models.

This paper is about how as our homes become networks, new opportunities emerge for utility businesses to deliver elder-care through the use of 'connected home' technologies.

## The Engagement Challenge Facing Energy Retailers

This is a truly transformative period in energy production and consumption. Over the next decade, significant parts of the world will swing away from fossil fuels. The UK has recently recorded days when the entire country ran for 24 hours on renewables. Consumers are also going to become prosumers, with solar panels that allow them to put energy back into the grid. 50 million electricity and water meters will be installed in the UK. A significant percentage of homes will have smart thermostats controlling their consumption intelligently. There has rarely been a more fascinating time to be engaged with your energy providers.

Yet, customers are still just looking for the cheapest provider, and energy is still seen as an undifferentiated and commoditized service. Many providers tend to take this consumer apathy as a feature of the industry. Squeezed between policy changes such as price caps and rising costs, energy retailers have recently been looking for ways to break out of this traditional energy retail box.

### A Solution in Search of a Problem?

Home automation has emerged as the next battleground. Many utility retailers have extended their services beyond smart meters to smart thermostats, doorbells and cameras, and are now offering home security services.

Smart homes have been in our collective consciousness for a long while now. Visions of connected homes have been brought to life in labs and pilots since the 1960s. For decades, the focus was on devices and appliances in home, but with the widespread broadband Internet access and ubiquitous wifi, the focus has shifted from local technology inside the home to connected technologies and intelligent services. These cloud-based services delivered through home appliances, devices, and apps are increasingly able to offer automation, energy, security, healthcare, and many other services to the next generation home. This is why technology majors such as Amazon and Google are competing with energy utility providers and telecoms for the prize of the connected home. Amazon has also broadened its presence through the acquisition of Ring.com. Apple and Google have launched their home speaker/hub products.

Today you can get smart home cameras, connected locks, internet-connected doorbells, smart heaters and toothbrushes, and the list goes on. Connected homes also have new interfaces including voice operated systems. Despite this, though, there has been the feeling in the past few months and years that the connected home is a 'solution in search of a problem'. After all home automation is nice, but who really needs it? A closer look might reveal that the answer lies not in the device technology (e.g. smart TVs) but in the availability of connected and intelligent services (e.g. Netflix).

But in the main, users remain relatively unmoved by the promise of a connected home. In other words, at present, the connected home market lacks a killer app.

## Let's Talk About Sonya

Consider the example of Sonya. Sonya has been living in London for 60 years. She is now 90. She lives by herself in a flat, where she has been for much of her life in London. She is financially independent. Over the past 5 years, Sonya has experienced a steady deterioration of her eyesight and her memory. This means that she cannot read her own correspondence, she doesn't remember her appointments - including her doctor or carers. Her family is dispersed and unable to visit her daily. David, who works for a care agency has been visiting her every week, to help with her correspondence. But David also tries to help her with her trips to the post office, or to get her hearing aid fixed. Sometimes they go for lunch together. But Sonya is alone for 70% of her time. During this time, she is vulnerable and unsure, and also often unable to remember a lot of things, including phone numbers of carers and family members.

## Millions of Sonyas

Sonya is just one of 3.8 million elder people (65 +) living by themselves in the UK (see table), and many are in need of better assistance than they are getting at present.

Currently, the UK has 10m people who are above 65. This number will likely grow to significantly over the next decade.

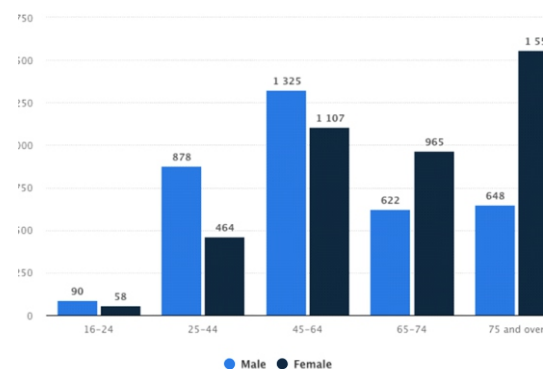
Providing personalized care is exorbitantly expensive, and care-homes are costly as well. For example, delaying the movement to a care home for 1 person for 1 month saves between £2,500 and £3,500 for the payer.<sup>i</sup>

As the published figures suggest, there is already a funding shortfall for providing care to the elderly. In recognition of this, the UK Government has set up a £300m fund to invest<sup>ii</sup> in technologies which are aimed at helping with elder-care.

## Technology to the Rescue and Beyond

It seems clear that technology will increasingly be used to address this challenge. Through sensors and wearables, it is increasingly possible to track patterns and more importantly changes in patterns. These can be tracked by family members in a safe, secure, and non-intrusive manner, to drive a far higher level of affordable care with limited resources. This not a substitute for human care, but rather a highly effective complement which allows a far more targeted care to be provided to a larger set of people. Looking after people in their own homes rather than moving to care homes is a win-win both on emotional and financial counts.

TCS has been working with the Singapore Management University to run a research project doing exactly this, tracking lack of movement, gait analysis



and more, connecting the data to carers, via alerts and dashboards. It becomes obvious that with more data a much wider set of issues can be addressed, once we know the patterns that indicate (for example) in mobility or dementia.

We also undertook a design research project in London with elderly volunteers. We learnt that there are distinct sub-groups within the broader age range based on level of independence, confidence and quality of life. There is a segment that 'doesn't want to feel old', for whom the technology needs to be invisible. We also learnt that the needs of the individual and the needs of the family may not always be aligned.

## Connecting the Dots: Connected Home & Elder Care

The Connected Home & Elder Care market represents an example of 'White Space' opportunity - an emergent market at the intersection of current needs and emerging technologies, which nobody has really claimed. Telecom companies, utility providers, media platforms, healthcare businesses, and technology providers are all jostling for this market.

This is not a healthcare model. It's a wellness solution that looks to create information triggers and alerts which may be used to attract the attention of a medical team or a care provider. However, over time, we see this being valuable for helping prevention of dementia as well as being able to track inflexion points for other conditions.

## Road Ahead for Elder Care Connected Home Providers

Nobody has the right business model for this new opportunity. Businesses should therefore not look to emulate others but rather focus on moving fast and learning quickly. Our research suggests that subscription models will take the pain out of technology choices, and complex buying processes.

This is a great opportunity to build the next generation business and operating models - underpinned by technology which is agile, automated, cloud-based, and intelligent. In keeping with our Business 4.0 thinking, it will enable mass customization and engage a dynamic ecosystem. As a new business it requires players to embrace risk and drive for exponential value creation. TCS is working with clients to help start up the new business with a slew of innovation services.

We said earlier that we live in networked worlds. This is a first step towards a solution that will connect the network of people involved in the provision of care for an ageing population.

## References

1. (<https://www.moneyadviceservice.org.uk/en/articles/care-home-or-home-care>)
2. (The "Ageing Society Grand Challenge"  
(<https://www.gov.uk/government/news/government-announces-300-million-for-landmark-ageing-society-grand-challenge>)

### About The Author

Ved Sen, Digital Evangelist,  
TCS UK

Ved works as the Digital Evangelist for TCS UK. His primary role is to help drive future thinking conversations with clients exploiting our deep, and distributed digital competences, and to drive innovation and acceleration. He has been working with and advising senior clients across retail, utilities, travel and other businesses. He also runs a local proof of concept team in London. Currently his work spans areas such as conversational systems, connected homes and environments, the Internet of Things, and AI, with a view to driving incubation models for our clients.

Ved is passionate about the impact of technology on business, culture, and society. He enjoys speaking and writing about technology and the future. In 2017, Ved published his first book - Doing Digital- Connect, Quantify, Optimise - which is aimed at explaining 'Digital' to non-technical business people.

For over 20 years now, Ved has worked at the intersection of emerging technology, design, and business. Prior to joining TCS earlier this year, he has had senior roles large, global businesses, with focus on digital technologies. Ved has also played key roles with 2 start ups which were subsequently sold, and has also run his own consulting business in the past, focusing on digital convergence in Media and Telecoms.

Experience certainty. IT Services  
Business Solutions  
Consulting

### Contact

Visit the [Energy, Resources and Utilities](#) page on [www.tcs.com](http://www.tcs.com)

Email: [utilities.marketing@tcs.com](mailto:utilities.marketing@tcs.com)

Subscribe to TCS White Papers

TCS.com RSS: [http://www.tcs.com/rss\\_feeds/Pages/feed.aspx?f=w](http://www.tcs.com/rss_feeds/Pages/feed.aspx?f=w)

Feedburner: <http://feeds2.feedburner.com/tcswhitepapers>

### About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled, infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India's largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

For more information, visit us at [www.tcs.com](http://www.tcs.com)

All content / information present here is the exclusive property of Tata Consultancy Services Limited (TCS). The content / information contained here is correct at the time of publishing. No material from here may be copied, modified, reproduced, republished, uploaded, transmitted, posted or distributed in any form without prior written permission from TCS. Unauthorized use of the content / information appearing here may violate copyright, trademark and other applicable laws, and could result in criminal or civil penalties. Copyright © 2019 Tata Consultancy Services Limited