THE STATE OF THE CONNECTED HOME

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techUK

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About this report

For a second year in a row, techUK, in conjunction with GfK, has published The State of the Connected Home. This report identifies trends, opportunities and barriers to greater adoption of connected home products and services in the UK market.

With polling from 1,000 UK consumers, the report highlights how market appeal, consumer understanding and ownership has shifted from 2016, as well as the constraints to uptake. It also covers how techUK is working with industry and Government to tackle some of these challenges. It also makes recommendations to encourage widespread adoption.

For this report, references to connected (home) devices or technologies refers to any devices (and associated services) which are either directly or indirectly connected to the internet. Data in this report draws on a consumer survey of UK adults 16+ conducted by GfK on behalf of techUK. The data is weighted to nationally representative profiles. 2016 participants = 1031; 2017 participants = 1002; 2018 = 1000

Welcome to the Connected Home

The Connected Home is one in which everyday devices and sensors connect, communicate, transfer data and increasingly take autonomous action. It is carving out a place in the consumer market. The clearest offerings for these devices and services are in smart home entertainment, security systems, thermostats, lighting and energy monitors.

The reason for the rollout and large adoption of such systems are comfort, safety and security, cost savings and the productivity-enhancing benefits of Internet of Things (IoT). Conversely, these benefits can also act as a perceived barrier for consumers.

In summary, it is about giving people more control over their lifestyles.

The connected home is the largest IoT segment at seven billion devices in 2018 (26%); followed by industrial, (24%), and connected health, (20%).

According to the International Energy Agency, one billion households and 11 billion smart appliances could participate in interconnected electricity systems by 2040, thanks to smart meters and connected devices.

Key report findings

Smart speakers/
home assistants
doubled from
2017 to 2018

People are most
familiar with smart
home technology,
followed by cloud
computing & storage
and wearables

Once people own a
connected smart device
they recognise the value
that other devices/
services deliver, being
interconnected or not

Highest growth in
ownership is in the
smart entertainment
sector

Smart speakers are taking off and early indicators show that they are increasing the attractiveness of other connected home devices

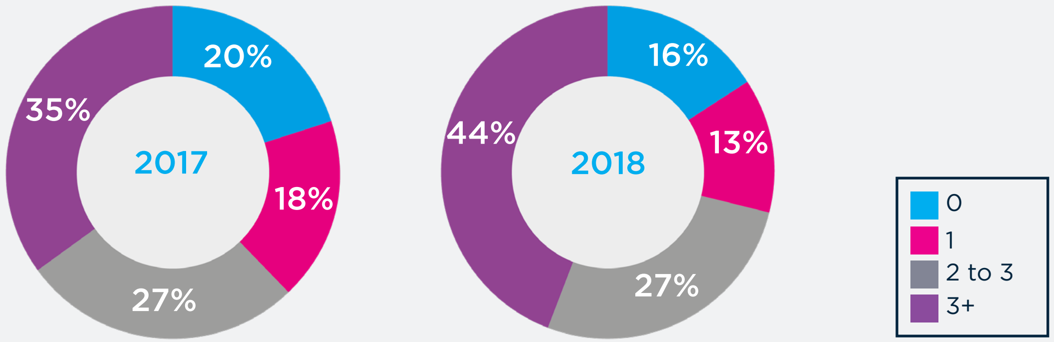
Consumers are increasingly interested in self-servicing and self-installing products, (39%) making ease of use and control crucial

Privacy remains a vital hurdle which industry needs to overcome - substance and education (23% see it as a concern)

41% of consumers are still price sensitive but recognise the value and knowledge, and interest is growing

Connected device ownership is growing. Households owning more than three smart home products grew by a quarter from 2017.

Number of devices owned



People with a smart meter are more likely to buy a smart thermostat which reduces cost and is more energy efficient.

Large energy suppliers have reported installing an estimated total of nearly 11 million smart meters across domestic properties in Great Britain. To date an estimated total of 1.02 million smart and advanced meters have been installed in smaller non-domestic sites by both large and small energy suppliers.

techUK supports the rollout of smart meters and research shows that people change behaviour when having more detailed information of their energy use from a smart meter.

Smart TVs are the most popular products

Smart lighting and thermostats are chosen by those already interested in smart home products

37% FIND CONNECTED DEVICES APPEALING

74% ARE FAMILIAR WITH SMART DEVICES

Top smart categories

Home entertainment

Energy and lighting

Health and prevention

Security and control

Domestic appliances

How familiar are consumers with different technologies and trends?

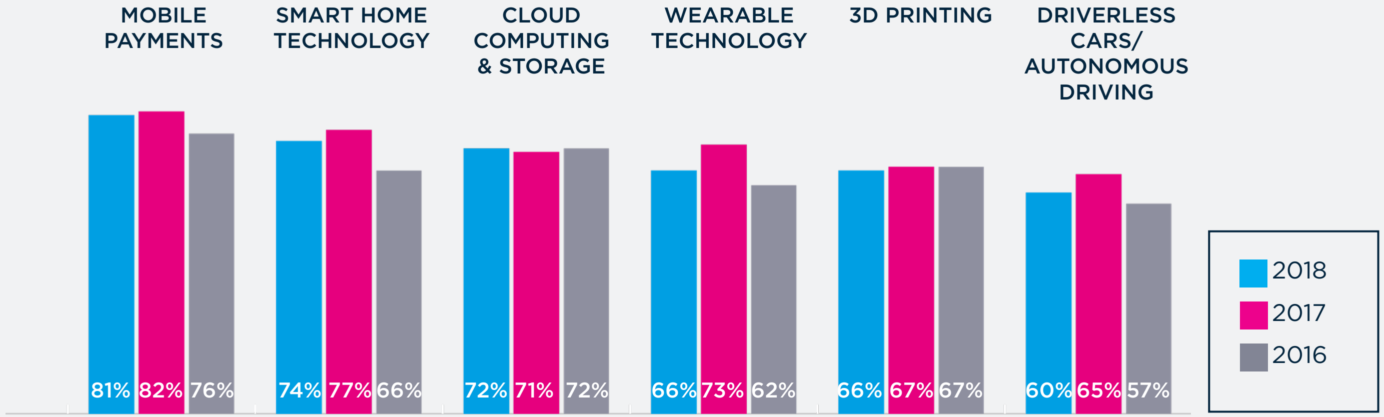
Today's consumers have more information available to them about products and services and are more demanding than ever before. The new generation of consumers value the experience of making a purchasing decision as much as owning the product. Retailers need to give their customers the experience of the smart home to inspire and inform them of all the benefits.

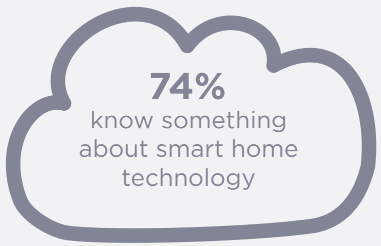
The industry needs to demonstrate and tell a story around the wider benefits of a connected home

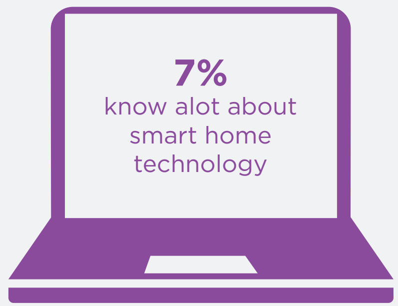
The connected home segment is still driven by early adopters. Yet, even within this traditionally well-informed group, there is a disconnect between the understanding of individual products and how these can knit together either within categories of devices or the wider connected home.

82%
OF PEOPLE KNOW A LOT ABOUT SMART HOME TECHNOLOGY WHERE THEY OWN MORE THAN THREE DEVICES

Knowledge of top technology trends







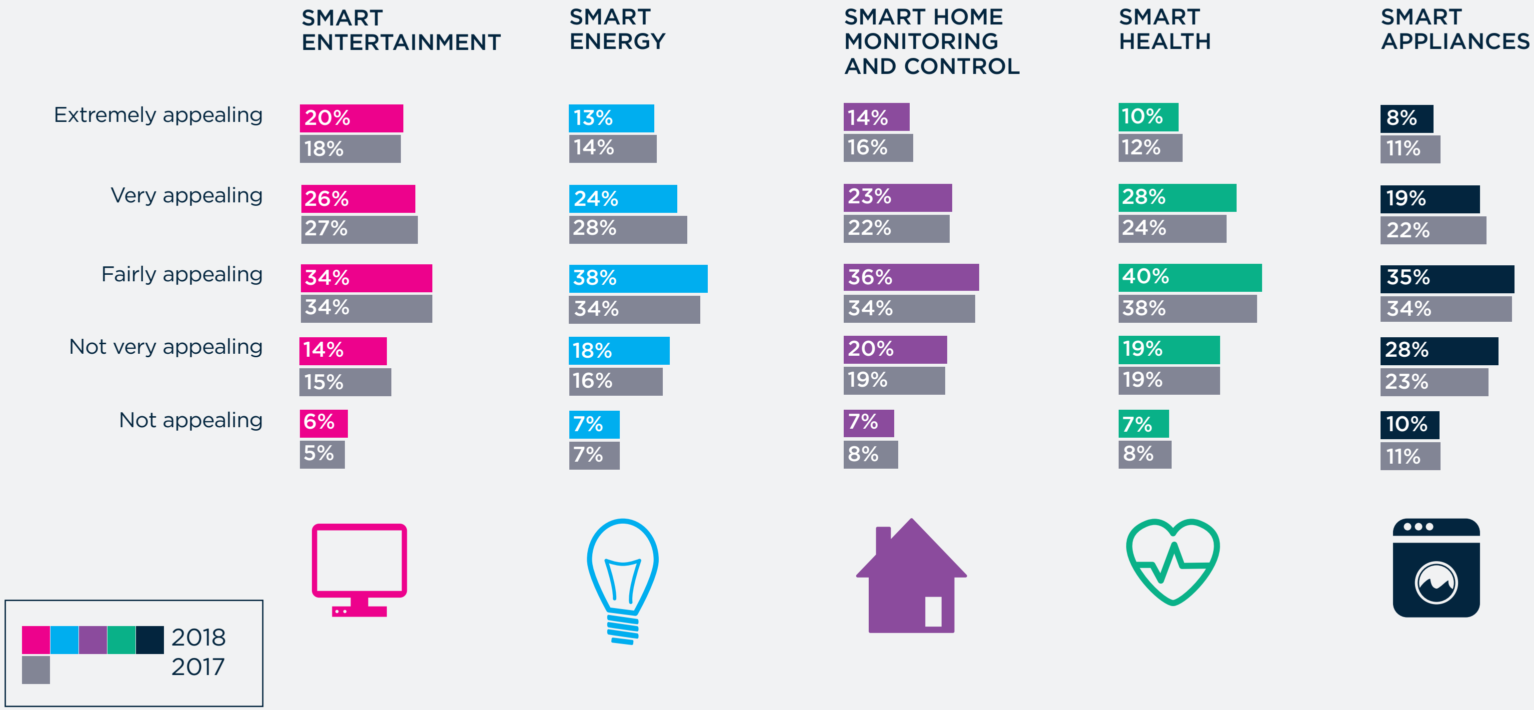
How appealing are connected home products?

Since the last report, there has been a small improvement in the appeal of the connected home, signaling that people are responding to the next generation of products being introduced to the market.

However, the overall appeal of smart products has seen a very minor to insignificant decrease from 39% in 2017 to 37% in 2018.

This shows that consumers are interested in purchasing products but struggle to understand the benefits fully.

Appeal of smart home devices



The appeal of smart entertainment appliances has grown from 18% in 2017, to 20% in 2018

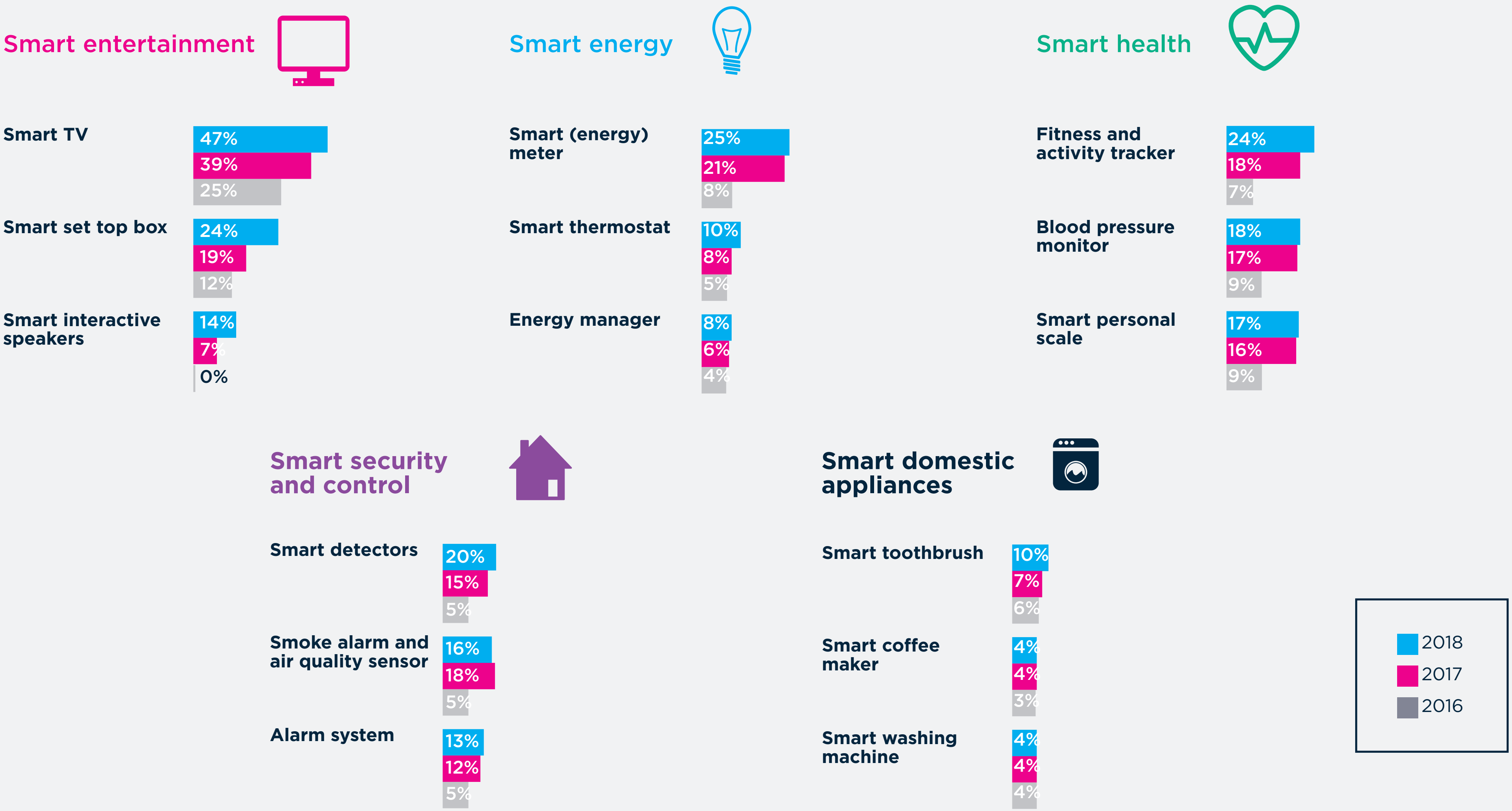
Smart health is generally becoming more appealing to consumers

Smart home monitoring appeal has grown since 2017

What connected home devices do consumers own?

Take-up in some categories is driven by the market, and in smart entertainment in particular. Yet, consumers do not often realise the benefits of smart functionality of their devices. For example:

Smart TVs are most popular with 47% of households owning one Smart TV and only 6% claimed that they are not interested in buying or using a smart TV capabilities.



Smart energy

Smart meters adoption is on the rise as the energy suppliers roll out the technology.

- The smart thermostat category has grown **10%** compared to **8%** in 2017. People are a lot more likely to engage and change behaviour when they own a smart meter.
- **34%** of people stated they most probably will buy a smart thermostat.
- **33%** are interested in purchasing an energy management device.

Research by Citizens Advice confirms the figures from 2017, **55%** agreed they have changed behaviour towards their energy usage, since having a smart meter. Citizens Advice has also developed a concept paper for consumers to be able to see a dashboard of who is accessing their data at any point in time. As the Government reviews the Data Access and Privacy Framework, Citizens Advice reports that concepts should play a key role in conversations.

Smart appliances

28% of people find this category very appealing, it is one where people are most reluctant to buy due to concerns over value with **49%** of people stating cost is a barrier to purchase. The challenge to demonstrate value is understandable; without time-of-use, tariff information from a smart meter (which is only currently available to small set of customers), users are not able to benefit from smart functionality to choose an optimal time to operate and save money in the process. Coupled with the potential development for consumer's participation in demand-side response schemes, we still believe that the outlook for smart appliances is a bright one.

Smart home monitoring and control

37% of people find this category appealing. Cost is still the main barrier (43%), followed by privacy (28%) and cyber security (27%). Home monitoring control includes smart alarm systems, motion sensors, security cameras, and smart locks. Integration in this category such as coupling a motion sensor and security camera, could add significant benefit to the consumer. The ability to access these devices remotely is particularly beneficial – of the 32% of households with a burglar alarm less than half switch it on when they go on holiday for fear of false alarms or forgetting to do so. With an increasing switch to wireless devices, these products now offer an attractive proposition to renters and home owners alike.

Smart health

34% of people find smart health very appealing. Smart health is the strongest category where people don't see any barriers to purchasing an activity or fitness tracker, blood pressure monitor, baby monitor, or a smart personal scale. Where people do perceive barriers, the main hurdles are costs (34%), and personal privacy (24%). Appeal of smart health devices such as fitness and activity trackers, has continued to rise. The market opportunity in smart health and wearable technology is clear but there is more that we can do to utilise the data that these devices are generating, as well as utilising the technology to a greater extent in the social care sector.

Smart entertainment

47% of people find this category very appealing. Consumers still find cost to be the main barrier (41%) followed by personal privacy. This is the most appealing category, mainly because the entertainment sector is perhaps the more advanced. Voice control automation is spreading quickly both via bespoke smart assistants and via other appliances and devices. This is a category where we can see that the market has driven prices down and smart is now the 'standard'. The key is to see whether the market can maintain its momentum and bring consumers into other connected home markets.

What stops consumers buying connected home products?

17% THINK THAT SMART TECHNOLOGY WILL NOT MEET THEIR NEEDS

ONLY **9%** STATED THAT THEY DIDN'T KNOW ANYTHING ABOUT SMART DOMESTIC APPLIANCES

17% SEE NO BARRIERS TO PURCHASING SMART HOME APPLIANCES

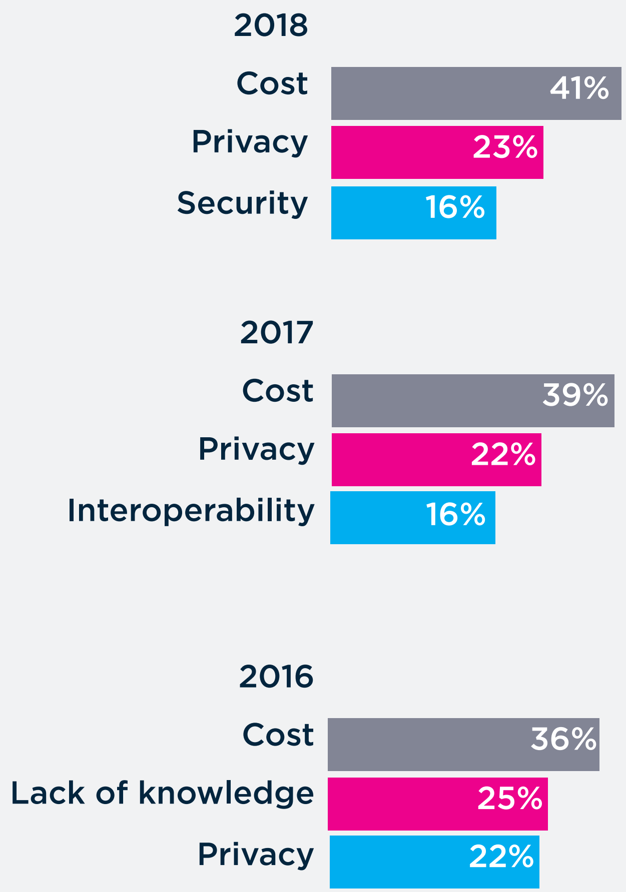
Cost is still the biggest barrier for consumers at 41%. The age group of 25-34 year olds worry most about cost

Personal privacy is the second highest concern at 23%

Cyber security is a barrier for 16% of people and would prevent them from buying a connected home product

The younger population is becoming less concerned with privacy which is 4% lower than 2017. Over 55s are most concerned about their personal privacy

Top barriers to purchase



What are the consumer expectations for installation and payment?

People expect to own and maintain their connected home products themselves rather than move into a different business model scenario of “tech as a service”.

Most people expect that if there is a recurring subscription fee, it would be included in the initial cost. They are also not willing to pay for smart home products and subscription/recurring fees associated with running the product.

Most would expect to pay just once for the purchase but equally would expect installation cost to be included in that purchase. Similarly to 2017, **79%** would expect to pay once.

39% of people expect to install a device themselves which has not changed since 2017. However, **35%** of people disagree and expected an installation service.

The age category of 35-44 year olds would strongly expect to install products themselves

Those that are 65 years old or above have higher expectations that the provider or a third party will install their connected home product. This trend also correlates with expectations around the maintenance of their product

The age group between 16 and 64 would prefer to maintain and self-service their own smart products, the 65+ category disagrees with 41%

Recommendations and next steps

This report illustrates that, whilst the appeal of connected home products has stalled since 2017, consumers are continuing to purchase devices. The number of households with more than three products grew by more than a quarter over the last year. This growth is predominantly being driven by the smart entertainment sector with 20% of people finding these products extremely appealing.

Explaining the value

Significant barriers remain which prevent wider adoption of connected home products. By far the greatest of these is the value that consumers attribute to the connected home products and services. Clearly, industry needs to do a far better job of conveying the benefits of the connected home.

For us, the benefits are clear; greater control over our most personal environments, cost savings, and that most valuable of commodities, peace of mind. But we do need to develop compelling examples of how the connected home will deliver these and find new ways to educate and communicate to consumers – be that digitally or through more innovative offerings in brick-and-mortar stores.

In addition to finding ways to demonstrate value we must also take steps to address other concerns which tend to revolve around privacy and security. The recent introduction of the General Data Protection Regulation (GDPR) puts in place a proportionate framework for personal data but there may be additional lessons to be learned from work being undertaken by Sustainability First and the Centre for Sustainable Energy on smart meter energy data.

Regardless, it is understandable that consumers have concerns about how data from their homes is used. We need to find a way of communicating this with them.

The rush to market for some connected home products has clearly led to cyber security being relegated as an afterthought in some instances. techUK has supported Government in its efforts to develop a code of practice for retailers, manufacturers and service providers. This helps embed the key concept of Secure by Design into consumer facing IoT products from the get go and should drive out the worst practices in the market.

Recommendation one: Industry should work towards implementing the DCMS Secure by Design Code of Practice. This is both the right thing to do and is necessary if we are to reach the full potential that the connected home can deliver.

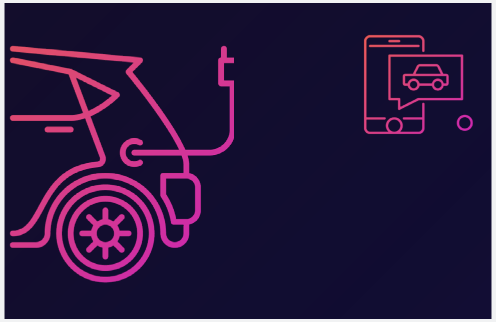
Sparks of a revolution

On current trends, the market appears to be one of evolution rather than revolution. There are, however, three interventions which may change this.

The first is from within the market; smart speakers and assistants. Their ownership has doubled in the last year. We will continue to monitor both their take-up as well as their impact as a potential gateway product – ownership of such a product significantly increases the likelihood of ownership of other devices. Next year's report will address whether this trend continues.

Second, an external intervention can be found in the form of smart metering. 89% of people with smart meters have made a change in their behaviour and interestingly 80% were satisfied with their installation – a high proportion when you consider the work involved.

This can be attributed to the high levels of training these engineers have had and demonstrates that there is value in offerings outside of the plug and play approach. Smart meter ownership is also linked to additional smart energy products, acting as a narrower gateway product than smart speakers and assistants but one that is still significant.



The third potential intervention is the take-up of electric vehicles (EVs).
Not only will this require smart charging from an energy network perspective but a third of drivers would be more willing to purchase an EV if they could utilise smart charging.

Time of use tariffs will clearly be key to encouraging consumer utilisation of smart charging and these will largely depend on smart metering functionality.

Recommendation two: Government should continue to prioritise the smart meter programme and ensure that their full functionality is maximised.

Our report next year will focus on whether EVs are having an impact on the connected home market, particularly if we start to see energy-as-a-service offerings which may change consumers' behaviour and expectations in other connected home segments.

techUK will continue to work with industry, Government and stakeholders (such as housing associations and property developers) to ensure that the connected home market in the UK is both an attractive one in which to test, develop and launch products as well as ensuring that it delivers value and benefits to consumers.

If you want to find out more about our work, visit: www.techuk.org/connected-home