Effectively engaging consumers to ensure smart meter success

O2

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About this report

The Department for Energy and Climate Change (DECC) has recognised the importance of consumer engagement to the success of its smart meter programme. This report aims to assist DECC by understanding consumer perceptions and attitudes towards the nationwide smart meter implementation programme and outline a series of recommendations to ensure a successful rollout.

The report takes into account the current understanding and perception of smart meters amongst energy bill payers, the potential of future visions such as the smart home and smart cities, as well as the views from a range of consumer groups and the lessons from smart trials globally.

The report combines data from a quantitative survey of more than 3,000 GB adults carried out by YouGov with in depth responses from a representative consumer focus group which featured a cross section of nine energy bill payers and took place in London on 13th March 2013. These findings are complemented by input from Mumsnet, Which?, Age UK and the Federation of Small Businesses as well as insights on global smart meter trials by the European Smart Metering Industry Group. This input was either from telephone interviews, consultation papers or publically available information.

About O2

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Introduction by O2

The Government's vision is for every home and small business in Great Britain to have a smart meter by 2019. Consumers will be offered a smart meter and an in-home display unit as part of this. A 'communications hub' will also be installed within the meter to transmit data to the in-home display unit, and to the energy supply company. O2 UK is bidding to be a communications service provider (CSP).

O2 believes smart meters for electricity and gas are an essential foundation for a smarter energy future for the UK. They will empower consumers by providing them with feedback on their energy usage, helping them to monitor, manage - and should they wish - reduce their energy consumption. Smart meters will help reduce or end estimated readings and make it easier for consumers to change tariffs and switch between suppliers, increasing market competition. Consumers should be able to access their energy consumption and billing data online, and new methods of payment (including pre-paid through a variety of methods such as mobile payment) will be possible.

However, the smart meter is far more than just a better way to read the meter. It's the foundation for better energy utilisation, smart grids, and new innovative products and services. A national network of smart meters – each with their own communications hub providing wireless connectivity to every household – will help accelerate the arrival of the 'smart home' and the introduction of a range of new digital services that will help to improve people's lives. These could include 'e-health' services where patients with chronic conditions such as high blood pressure, diabetes or respiratory problems are able to monitor their conditions in their own home and share the measurements with their doctor.

It is a major infrastructure project which could deliver real benefits for consumers, society, energy policy and the environment, but we must get it right. The Government has rightly acknowledged the scale of the challenge in persuading consumers to agree to have a smart meter installed in their home. All companies involved in smart metering and the Government - ideally with the support of consumer bodies, charities and voluntary groups - need to engage with consumers through the Central Delivery Body (CDB). As one of the organisations in the tender process, O2 commissioned this research to help all involved parties better understand consumer attitudes and to inform our thinking about how we can help the CDB engage with consumers to ensure a successful rollout.

O2 believes smart meters for electricity and gas are an essential foundation for a smarter energy future for the UK.

Executive summary

The UK is embarking on an ambitious programme to roll out smart meters to every home and small business in the UK by 2019 with a stated goal to help households cut their energy bill. The Department of Energy and Climate Change (DECC) has rightly spoken about the importance of consumer engagement in delivering this programme and O₂ strongly supports this view.

Our research suggests widespread awareness about smart meters is low and many consumers are unclear about the benefits. The low levels of consumer trust in energy companies is a potential barrier to the take up of smart meters and the public is sceptical about how the programme will be funded. Many consumers believe that smart meters will be paid for through higher taxes or increased energy bills, which are already seen as too high.

There are also concerns about the disruption caused by the installation process and fears about how the data will be collected, protected and used.

Despite this, when smart meters are explained, only 13 percent of those surveyed were against the programme with greater visibility into energy usage and an end to estimated bills seen as the main benefits. Interestingly there was a further increase in the appeal of smart meters once the concept of a smart home was explained and the role smart meters will play as part of this. Features such as being able to remotely manage heating, lighting or other appliances received a positive response and some discussions with consumers suggested that they would willingly pay for a mobile phone app to receive this functionality.

What becomes clear is that the programme will launch to a largely un-educated public with few pre-conceptions, providing the opportunity for the Government and its partners to tell a positive and compelling story which excites the public about the concept of a smart home, explains both the short and long term benefits, and clearly addresses their concerns.
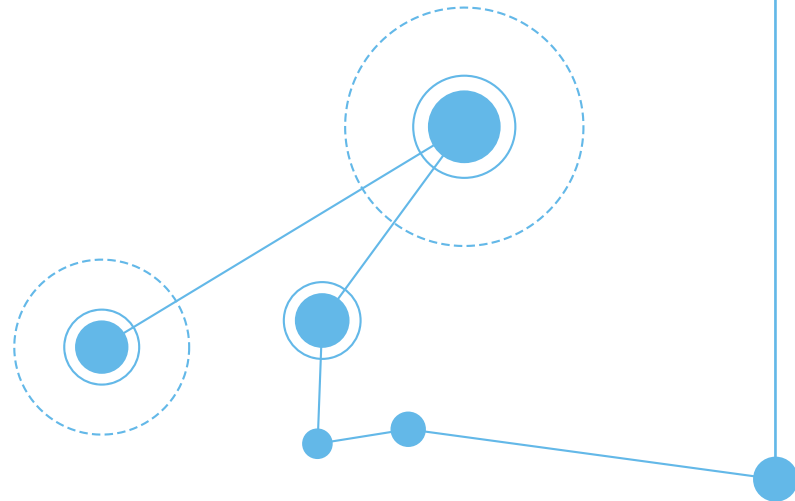
To fully overcome resistance and mitigate the threat of a mass opt out, we must make a compelling case, make it easy and simple, and take a proactive, partnership approach to educate installers and engage consumers at every step of the process. As DECC has said following its own large scale trials, the Energy Demand Research Project, the way householders are engaged before, during and after the roll-out is crucial to the success of the smart meter implementation programme. This was reinforced by a report commissioned by the European Smart Metering Industry Group which evaluated 100 trials globally and found that the most successful were those that featured strong and innovative engagement throughout.

Effective consumer engagement should address three key areas: how consumers are sold the benefits of the smart meter; the installation process and ongoing experience; and how consumers engage with the smart meter data over the long term. To achieve this O2 makes five recommendations:

1. **Ensure a partnership approach to consumer engagement** with all the companies involved in the programme clearly articulating the benefits of smart metering and the smart home while utilising the trust and expertise of third parties such as consumer groups, charities and other voluntary bodies

2. **Address concerns around privacy and security** through open and honest communication around the measures undertaken to protect consumer data and the role of the DCC as an independent entity which consumers can trust to protect their data and its usage

3. **Build an ecosystem** through open standards and defined specifications, which will encourage and incentivise third party innovation to extend the benefits of smart metering to consumers through additional applications and services

4. **Create a code of practice for installation** to ensure installers are highly trained, trusted, certified, and aware of the needs of different consumer segments

5. **Create a network** which can support future applications by being scalable, open, and able to support the smart home vision from day one

With these in place, O2 believes that a nationwide smart meter roll-out will be successful in the short term, but also provide the infrastructure which will allow for future advancements and developments to support DECC's wider remit to ensure that the UK has a secure, clean and affordable energy future.

Key research findings

40 percent of respondents felt that the concept of the smart home would make smart meters more appealing.

1. **There is currently a low level of awareness and understanding about smart meters.** A YouGov poll of 3,000 British adults found that 63 percent of people said they don't know what a smart meter is. However those that do know what a smart meter is (37 percent) were broadly accurate in their understanding that it will "*monitor exactly how much energy you are using and can help you to reduce the amount you use.*" (source: YouGov survey)

2. **It is likely smart meters will change energy consumption behavior.** When asked if real-time feedback on household energy consumption would change their behavior, 64 percent said they would definitely or probably change their behavior in regard to energy usage. The general response from the consumer focus group was that more insight into energy consumption would change behaviour if it was easily presented. One example given was using the kettle: "*It would be good to see how much energy different appliances use. When I found out that the kettle takes a lot of energy to boil, I now only fill up for the number of cups I'm making.*"

3. **Visibility into energy usage and an end to estimated bills were seen as the top benefits** of smart meters, alongside the ability to save energy and reduce costs. However, the level of cost reduction needs to be substantial to shift opinion. Only 18 percent felt they would be motivated to adopt a meter for savings of less than £50 per year alone and less than quarter (23 percent) of those surveyed thought that lower energy prices would be a benefit of smart meters. Feedback from the focus group also suggested that more control and visibility into the bill is widely regarded as a big positive. There was a feeling amongst the group that they "dread the quarterly bill" with no idea how to predict it. A number of the group had shifted to pre-pay tariffs to get more visibility into their usage and avoid bill shock.

4. **The population is split over the appeal of carbon reduction.** Just over a half (52 percent) felt that if there was a measurable reduction in carbon emissions this would make smart meters more appealing. However, only 38 percent felt that smart meters could lead to reduced carbon emissions and pollution, although just over a third (34 percent) weren't sure.

5. **The explanation of the future benefits of smart meters, in particular the vision of a smart home, is an important story to increase appeal.** 40 percent of respondents felt that the concept of the smart home would make smart meters more appealing. However, when further examples were given as to what this would actually look like this figure increased to 60 percent. Clearly articulating this story with real examples will be an important strategy to drive smart meter adoption.

6. **Data privacy is the highest-ranking concern** amongst those who don't want a smart meter installed at their home followed by fears over inaccurate billing and concerns about the installation. Articulating clearly DECC's regulations restricting how suppliers can use the data for marketing and sales activity will be important – when these regulations were explained during the YouGov survey, more than a third felt more reassured about the idea of a smart meter. Given the low level of trust which exists for energy suppliers (51 percent of those surveyed don't trust their supplier), it will also be important to articulate the role of the third party Data Collection Company and other parties involved in the program; for example 64 percent of those surveyed said they trusted their telephony provider.

7. **Interoperability and simplicity of use were highlighted as key concerns** by consumer bodies Age UK and Which? as well as the Federation of Small Businesses in their responses to previous government consultations. The standardisation of technology to allow simple supplier switching to increase competition has been consistently highlighted as a key requirement for the program. O2 also suggests that the sophistication of the smart meter and communications hub is also crucial to realise the smart homes vision which should be an important part of the program. It reflects the Government's preference for open standards where possible in IT deployments as outlined in its *Open Standards Principles*[1].

8. **The installation process is a cause for concern.** Installation ranked as the third most popular reason for those opposed to smart meters in the YouGov survey and the focus group discussion raised concerns about the challenges to accommodate installations during the week. Age UK has also stressed in their responses to government that installation needs to take into account the nuances of different situations, such as the placement of a meter within the home.

The importance of consumer engagement

An extensive study of global smart meter trials by the European Smart Metering Industry Group (ESMIG) concluded that trial success is significantly enhanced with proactive consumer engagement. Dr Howard Porter, International Alliances Director, ESMIG said that the overall conclusion after studying the global trials was that the mere provision of smart meters to consumers is not sufficient to drive behavioural change by itself. However, when accompanied by proactive engagement, education and the provision of the right types of information, then energy savings increase.

In the study, *Empower Demand*[2], Dr Porter highlights a number of global examples of smart meter trials where consumers were engaged either through direct marketing or above the line advertising to educate them about smart meters and encourage behavioural change. He highlights the importance of using a range of different programmes and notes that 'more is more' at every stage of the roll out. For example, those which use consumer segmentation to create directed marketing messages for a particular consumer group increase consumer uptake and results. The study also suggests an increase in consumer involvement when using a variety of programme dynamics such as feedback, pricing, education, interaction etc.

Anecdotally, one member of the focus group told how her father-in-law was trialing a smart meter display but hadn't even plugged it in for three months. This is despite the fact that moving from estimated bills to accurate billing as part of the trial had saved him a substantial amount. It highlights the challenge of ensuring ongoing engagement with the meter which, as the ESMIG study suggests, is a key way to affect behavioural change.

The importance of tailored messages is also supported by the results of the YouGov survey. It shows clear differences amongst different demographic and socio-economic groups.

- **Awareness of smart meters is higher amongst older consumers.** Only 14 percent of 18-24 year olds know what a smart meter is, whereas more than 40 percent of those over 35 were familiar with it.

- **Emissions reduction is more of a concern to the young.** 60 percent of the 25-34 year olds felt emissions reduction would make smart meters more appealing whereas less than half (49 percent) of the over 45s agreed.

- **Privacy is less of an issue for the under 34s; the number one issue for older consumers.** Data privacy ranked second as an issue for the 18-34 year olds surveyed who don't want smart meter whereas everyone over 25 said this was the number one reason they were opposed to smart meters and the 45-54 year old category was the most concerned about data privacy.

- **Installation concerns young people.** The younger generation was more concerned about the installation than anything else (49 percent), whereas only a quarter of those over 35 cited this as a reason for opposing smart meters.

Language is also important. Helen Rowley at Mumsnet, the UK's biggest social network for parents, explained that it is important to overcome the perception that adopting a smart meter will be too hard by highlighting the real world benefits and avoiding complicated jargon. She also notes that there are lots of people within the Mumsnet community who are very conscious of their energy usage and understand that it is a finite resource. Rowley suggests that more communication around cost savings, alongside real world examples, will have a positive impact on behavioural change.

Based on these findings, we can categorise consumer engagement in three ways:

1. **How the consumer receives and uses the information collected by the smart meter** – this relates to the way data is displayed (via in home displays, via mobile phone, via a website etc.)

2. **How and when the consumer is sold the benefits of having a smart meter** – this encompasses the communications programme and what messages are delivered to whom

3. **The experience the consumer receives through the installation process and beyond** – the success of installation and the ongoing experience

2 http://www.esmig.eu/press/filestor/empower-demand-report.pdf

Awareness of smart meters is higher amongst older consumers. Only 14 percent of 18-24 year olds know what a smart meter is, whereas more than 40 percent of those over 35 were familiar with it.

The discussion in the focus group was consistent with the YouGov finding that only a third of the population are aware of what a smart meter is, and that amongst the rest of the population there is a great deal of confusion over its benefits and why the government is investing in such a programme. When asked what could be done to reassure them about the smart meter programme the following emerged as key points:

- Incentives – a ten pound credit for example (one member of the focus group gave the example of how some pre pay mobile phones come with £10 of pre-installed credit).

- A guarantee that information wouldn't be shared unless explicit permission was given.

- The installation process would need to be smooth and easy.

The smart home vision

Many analysts believe that the smart home of the future is likely to contain at least 15 to 30 connected devices and sensors[3]. Connected devices will range from ordinary household appliances through to solar panels and electric vehicle charging infrastructure that both consume and generate electricity. Smart utility meters are among the first applications within the smart home and our consumer research shows that, alongside cost savings and the ability to gain better visibility into energy usage, the smart home is a compelling element of the smart meter programme.

It is arguably more compelling than focusing on short term cost reductions when considering that the annual cost savings will be modest and the low elasticity of demand for smart meter adoption: the research showed just 17 percent would be inclined to adopt a smart meter if cost savings were under £50.

The YouGov survey showed that the prospect of a smart home and the benefits that it can deliver to consumers is highly appealing. 60 percent of those surveyed said that the additional functionality and control they would receive from a 'smart home' would make smart meters a more appealing proposition. In particular, more than half of the respondents felt the following applications had appeal:

- 61 percent said smart appliances – appliances that suggest usage based on energy prices and consumption

- 54 percent said automated climate control – remotely managing heating

- 52 percent said the ability to remotely manage home security

O2 also carried out a qualitative discussion with members of Mumsnet to further investigate the views of this demographic in regard to smart meters. What became apparent was that the appeal of applications and functionality which could be classed under the banner of the smart home were generally more appealing than modest cost savings.

Helen Rowley of Mumsnet summarised this by saying that "*the smart home vision brings it to life. Totting up moderate savings might not be the big sell but time saving activities like being able to have the oven pre-heated when you get home are more compelling.*"

The focus group also shed some interesting light on the smart home. When the concept was introduced into the discussion the general mood became more positive and there was general acceptance that the smart home was "pretty cool". The concept of being able to control your home to fit in around your lifestyle was particularly appealing with strong agreement that being able to manage heating, lights or appliances such as the oven remotely was a strong benefit. One member of the focus group even remarked that he would "pay for the app to let me do that" suggesting that this has a far stronger appeal than the basic, shorter term smart meter benefits.
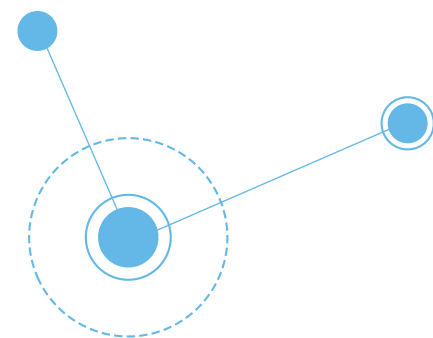
Addressing the concerns and communicating the facts

The low level of awareness around smart meters to-date (only 37 percent of the YouGov poll said they were aware of smart meters), provides an opportunity for the Government and its partners to tell a positive and compelling story to an audience which has few preconceptions. However, it is important to coherently address any potential concerns and reassure the public.
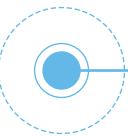
Top listed consumer concerns for smart meters from those who don't want one installed:

1. Data Privacy (59 percent)
2. Inaccurate billing (32 percent)
3. Concerns about installation (28 percent)
4. Health or safety concerns (16 percent)

Smart meters will lead to a significant increase in the amount of data captured relating to energy consumption. How this data is stored and used is the number one concern (according to the YouGov survey) and this echoes concerns raised in other countries in relation to their smart meter programmes. In particular the main concern seems to be based around who has access to the data and what they are doing with it. Helen Rowley of Mumsnet said: "*There is an extreme view amongst some in the Mumsnet community that says 'the smart meter programme is designed to get more data about me'. However the prevalent view is far more balanced understanding that a by-product of the programme means energy companies will have more marketing data.*"

The focus group revealed that there is a lot of concern over what companies are doing with their usage of data. There was concern that energy companies might sell the data to other organisations; an example given was that if a tea bag company knows how often one boils the kettle they can market more effectively and bombard consumers with offers. Overall this was associated with a deep mistrust of big business and energy companies in particular. However, the group would be reassured if there was an independent and trusted body that was responsible for regulating the use of data. DECC has established a new entity in the Data and Communications Company (DCC) which will coordinate communications between smart metering equipment and authorised smart metering data users. Its importance in gaining consumer trust in the security of data cannot be underestimated.

Billing accuracy and flexibility is a concern that was also raised by several consumer groups who have responded to DECC's consultations on smart meters. Age UK is calling for flexibility on payment with a particular focus on pre-paid tariffs and reasonable steps taken to ensure that suppliers do not disconnect vulnerable customers. Which? has called for explicit plans to protect consumers in the event of evidence of any exploitation of the consumer, such as mis-selling. A Mumsnet debate also highlights concerns about how energy companies might be able to more easily disconnect customers or credit-load their accounts.

Age UK also underlined some specific concerns to do with installation to ensure that smart meters or the electronic display aren't installed in locations that are awkward to access or unsuited to the customer. For example, if it is easy to change the tariff to a pre-paid option then the provider must ensure that the meter is appropriately positioned to allow easy access. Which? is also calling for plans to be in place for a regional approach to installation so that energy suppliers and third parties co-operate to focus on installing smart meters in neighbourhoods at the same time.

The focus group revealed some additional concerns about the installation process with a strong call for installation work to be done on Saturday so people don't have to take time off work to accommodate the installers. There was also an interesting dynamic when people thought the installation would be compulsory, several within the group took a more negative view of smart meters on that basis. It suggests resentment towards programmes that are forced upon consumers regardless of the motivations, whereas when given a choice they are far more likely to be positive. Stressing the optional nature of the programme to consumers is likely to create a more positive response.

To address public concerns around billing and privacy DECC has introduced tough new guidelines which stipulate that there should be no sales during the installation process[4]. The YouGov research shows that if these regulations are communicated effectively, over a third of consumers (40 percent) are more likely to adopt a smart meter.

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Picking the right technology

According to the Empower Demand[5] report released by ESMIG in 2011, "the benefits demonstrated by the 100 worldwide installations could, if delivered across Europe, contribute to the EU goal of a 20 percent reduction in energy use by 2020 if similar installations were set up. Smart meter data delivered through In-Home-Displays alone has been shown to be a quick, effective and high-performing tool for raising consumer awareness and education, leading to an average 8.5 percent energy reduction."

This ESMIG report highlights the importance of having the right technology in place to deliver the right information to consumers; the YouGov survey highlights the importance of selling the smart home vision to excite customers about the benefits of smart meters; and the economics of rolling out such a widespread network underlines the importance of flexibility and scale.

Future proofed

Selling the smart home vision requires a network which is able to support it over the long term. It is essential that the network can be easily and cost effectively upgraded to support future innovation, additional functionality and services. The technology being procured now has to last for over 15 years so it needs to be able to be able to cope with the fast paced evolution of digital technology.

Engendering an open ecosystem

The smart home relies on the ease with which new technologies can be integrated into the infrastructure so the network must allow innovation and be open enough to engender a new ecosystem of services which provide consumer and societal value. The focus group revealed a lot of excitement for applications and services which allow them to remotely control their home and there is already innovation in this market with new entrants like Nest, founded by the inventor of the iPod, launching smart appliances such as thermostats. Nurturing this innovation requires a secure infrastructure which is open enough to make it easy and commercially viable.

The environmental question

The YouGov research shows that consumers are divided on the question of environmental benefits with only 52 percent indicating that carbon reduction would increase the appeal of smart meters.

Combined with the low level of belief that smart meters would reduce carbon emissions (only 38 percent) the environmental benefits rank low amongst the public.

This split was reflected in the focus group with views ranging from "why should I care about my carbon footprint, what does it mean to me?" to "why doesn't the government spend this money on more wind farms if it wants to cut emissions?"
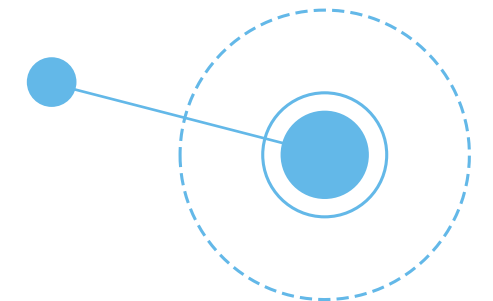
Combined with the low level of belief that smart meters would reduce carbon emissions (only 38 percent) the environmental benefits rank low amongst the public.

O₂'s recommendations

Based on the findings of the quantitative research and the qualitative interviews undertaken as part of this report, O₂ has outlined a number of recommendations to help ensure the success of the UK's smart meter roll-out.

1. Place a high focus on consumer engagement
There is plenty of evidence to show that consumer engagement has perhaps the biggest impact on smart meter programme success. DECC recognises this and has taken some important steps already in this area. Based on its research, O2 believes consumer engagement should:

- Be actively managed by all the companies involved in smart metering and the Government - ideally with the support of consumer bodies, charities and voluntary groups - through the Central Delivery Body (CDB). A partnership approach will undoubtedly be more effective.

- Communicate a compelling vision for a smart home alongside short term benefits such as greater visibility into energy usage and more predictable bills, as potential financial savings and environmental benefits may not be enough to convince many consumers.

- Explain what a smart meter is and how it can inform and empower consumers and help them to reduce their energy consumption if they wish.

- Continue post-installation through an ongoing dialogue with consumers about their smart meter to help them derive the maximum benefit.

2. Address data security and privacy head on
Privacy concerns are the number one fear so it is essential that all technological steps are taken to secure the privacy of data, but also protect the integrity of the infrastructure against malicious attack.

A security by design approach needs to be taken to ensure end to end security is maintained between the meter and the energy supplier, and that appropriate encryption, signing and certification between the components, of what is Critical National Infrastructure, is applied.

Each component part of the smart metering eco-system needs to have the appropriate levels and layers of security to give the consumer the confidence that data privacy and security are being addressed. Cellular technology, for example, is inherently secure and when combined with additional layers of protection can provide the consumer with confidence that their data is being protected.

Secondly, transparency is needed to overcome consumer scepticism and concern around the privacy of data: who holds what, for how long and for what purpose? Communicating the regulations and codes of conduct as to how data can be used is shown to have a positive effect on the desirability of smart meters.

As the owner of the customer relationship, the energy companies will have to play a key role in protecting privacy but given the public's lack of trust (50 percent of customers don't trust their energy supplier), there is also a key role to be played by Ofgem, the Government and additional third parties to re-enforce the levels of protection.
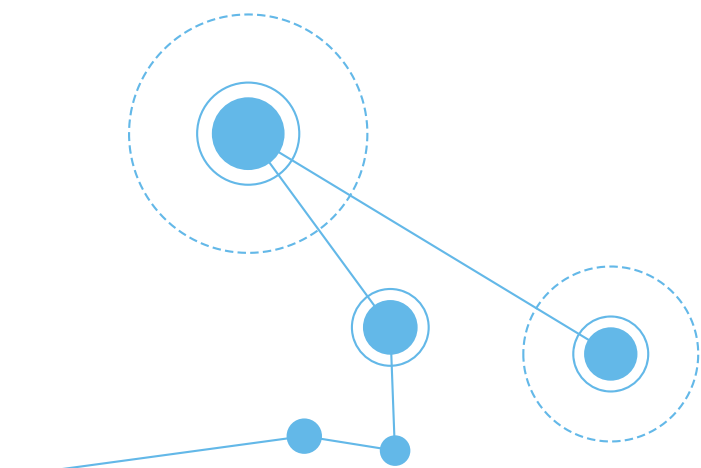
O2 believes that the credibility of the data carrier will have a positive impact on alleviating some concerns as to how data is collected, protected and used. O2 believes that this requires partners who are trusted by consumers and have a track record of success in delivering secure, innovative technology to the household.

It is essential that the regulation and security procedures which DECC has put in place through the creation of the DCC, are clearly articulated to consumers from the start to prevent incorrect and negative assumptions being made. The research shows that consumers are open to a trusted third party regulating data privacy so we must ensure that this entity is trusted through open and honest communication.

3. Build an ecosystem for success
To realise the promise of the smart home, the smart city, smart mass transportation and more, we must ensure that one of the key foundation layers – a smart meter network – can support new innovation through open standards. Using the mobile phone market as an example, the innovation has come from phone manufacturers, service providers and application developers all working together. Creating a similar ecosystem for smart meters would encourage developers to innovate new services adding more value to consumers and encouraging more competition in the energy market. Specifications and standards need to allow for interoperability and inbuilt security and scalable enough to support future applications.

Creating this requires strong partnerships between many different parties – DECC, the utility companies, the technology providers, installers and developers.

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It is O₂'s belief that a solution using existing cellular networks rather than a proprietary technology will be more future proof.

4. Create an installation code of practice

It is vital that consumers' experiences of this process are positive in order to build trust and integrity in the smart meter programme as a whole. As such, a robust code of practice for all suppliers installing smart metering systems is of paramount importance, not only to reduce the need for repeat visits, but to reduce the burden placed on vulnerable households where the installation process could present overwhelming concerns. Ofgem is currently consulting on a proposed code of practice - SMICOP. O2 believes that any code should reflect the following:

- **Roll out planning** – It is important to ensure that when a smart meter is installed the communications infrastructure is already in place, otherwise the consumer experience of smart metering could be a negative one. Cellular networks are already in place and ready to support a smart metering rollout from day one.

- **Installation requirements** – the availability of a sufficient number of trained and accredited installers in order to meet the deployment rates required for the Government's 2019 targets. As the installers are conducting home visits they need to be trusted as well as trained to the correct standards in the interests of safety. They also need to be held accountable for adhering to the correct installation procedures.

- **Meters certified and ready to go** - All of the equipment (the smart meter, the communications hub, the display device) must be certified and interoperable. Different energy providers may select different manufacturers to build their meters and display devices. All of the different meters and display devices must work with the communication hubs.

5. Create a network which can support future applications from the start

As the research findings in this report show, there is an appetite among consumers for smart home applications. It is therefore important that the communications network is capable of supporting the growth in bandwidth that these applications will require. O2 believes that the network must:

- Be able to scale effortlessly to cope with new and unpredictable innovations in services and products and thus data traffic

- Allow innovation and be open enough to engender a new ecosystem of services which provide consumer and societal value

- Have the ability to reach everyone in the UK

- Have the capability to support not just today's services, but also those that have yet to be thought of

It is O2's belief that a solution using existing cellular networks rather than a proprietary technology will be more future proof, will have access to a wider developer community, will be less dependent on dedicated radio spectrum, and – unlike proprietary solutions - will have a high level of nationwide coverage from day one. This will allow other parties such as third party service or application providers to deliver consistent messages to consumers which support the core smart metering message. Leveraging the potential excitement generated by the innovation of others will be a useful tool to effectively engage consumers.

Appendix 1: Summary of the focus group

The focus was held on 13 March 2013 in Central London and featured a cross section of energy bill payers. The nine strong panel used a mix of pre-pay meters or quarterly billing and had differing understanding of what a smart meter was. As part of the session, the concept of the smart meter was explained and a discussion facilitated to understand views, both positive and negative in reaction to the concept. In addition, the concept of the smart home was explained mid-way through and the group was asked its thoughts on this and whether that changed its views on smart meters.

This summary highlights the key points which emerged from the session grouped into the main talking points.

Current energy usage

There was a split between those who currently pay quarterly and those who use pre-pay. Those on pre-pay were already aware of the benefit of seeing energy use in pounds and pence, whereas those on quarterly bills were wary of estimated bills and miss-billing.

"I currently take my reading and enter it on line every 3 months – and that's enough for me. I wonder how a smart meter will be better for me."

"It's a nightmare for me to report my meter reading because I'm never in when they come round so I have to ring up and can never get through to give my reading."

"I had a big issue with my gas bill – I was being charged for someone else's gas bill so the estimated bills are a big deal. I asked to move to a pre-pay meter but was told I couldn't have it."

"I had a bill which was wrong and they said they'd send an estimated bill. Miss-billing is a big issue for me."

"I have a pre-paid so you can see the money going down really quickly. I'm more aware of my energy use as a result."

"I dread the bill every time it comes as I don't know how much it is going to cost me."

Positive smart meter sentiment

There were some positives relating to the smart meter – mostly around having more visibility into energy usage and an end to estimated bills.

"It would be good to see exactly what I'm spending all the time."

"It would be good to see what appliances are using the most energy – I didn't know how much the kettle costs to boil but now I know it's a lot, I just put in the water for one cup."

"I'd like to know when electricity is cheaper so I can run my appliances at the cheapest time."

"Seeing is believing. If I can see how much money I'm spending I will be more aware of wasting energy. The pre-pay bill is a god example."

"It will help us in consumption because we'll be more informed, but prices will always rise."

"Estimated bills are a major issue and if you're not checking then you can get screwed. Yes, the benefit of a smart meter here is quite large."
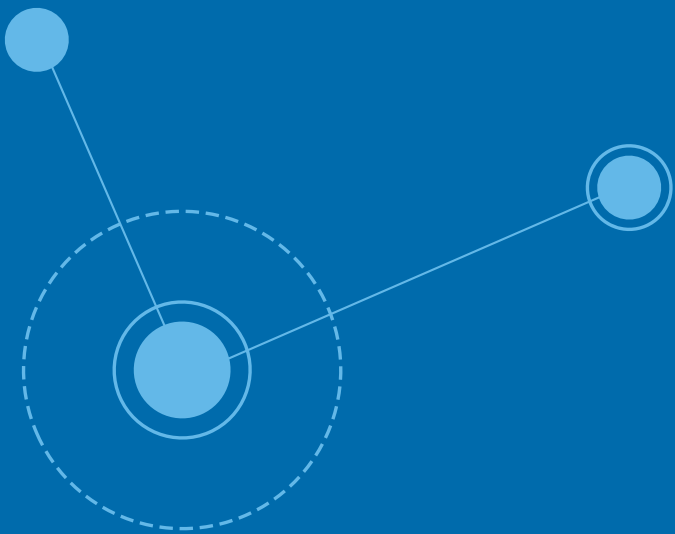
Negative smart meter sentiment

The negative comments covered a wide range of topics and reflected those highlighted in the YouGov quantitative survey. Specifically the concerns were around privacy, installation, being forced into having a meter, and the impact on energy prices.

"We would need to take time off work to get the installation done. This could be disruptive to work and pay. Could they do it on a Saturday? That would need to be the case."

"I have a cynical view around what the information will be used for. Will they sell it to tea bag companies for example to show how often I boil the kettle?"

"I don't want yet another meter under my stairs. Will it use electricity to run and cost me more money?"

"Where will it be? Is it under the stairs or is it somewhere else? I don't want it to ruin my décor."

"Will this scare the elderly into not putting the heat on because they can see the money going up?"

"Who's going to pay for it? Someone has to, if not in lower bills then in higher taxes."

"What if the meters are reading it wrong and charging you higher rates? I think this would be worse with a smart meter because somewhere there is a computer involved which is prone to tampering."

"What's to stop the energy companies changing the prices to keep the profits the same if energy usage is lower?"

"Will they be used to ration or allocate energy to people if we run out?"

"How often will these need to be updated? They need to keep coming to the door to upgrade it? Technology advances all the time."

"I'd be worried about Trojans or other snooping software being put on."

"Installation would need more planning than just the meter reading."

What would need to happen to re-assure you?

"Incentives, a ten pound credit for example"

"A guarantee that my information wouldn't be shared if I didn't want it to be"

"It would have to be optional"

"How is the installation going to happen – be mindful that it's someone's house"

Whose responsibility should it be to roll out and pay for this?

"Utility companies? Well they'll just put the price up and charge us for it."

"If the Government pay for it I think it's a waste of the Government's money."

"I prefer the Government taking charge and investing in it rather than the energy companies."

"The Government shouldn't spend the money on smart meters which should be spent on solar and wind."

"What is the motivation for the Government? Is there an ulterior motive?"

"Who's going to take responsibility for the meter – maintenance, upgrading it, who owns it?"

Trust

There was a lot of distrust around the motives for smart meter installation. The energy providers are not trusted and there is a perception that they are solely motivated by their profits. However this view was equally applicable to all big businesses – "You can't trust a business, they're just out to make money."

"If they know what we use then we'll be sent marketing or promotions on tea bags, kettles etc."

"I would like a trusted party to be an independent ombudsman to keep an eye on all the data."

Environmental concern

There was a split amongst the group as to how motivated they were by environmental issues but the smart meter wasn't seen as an obvious way to reduce carbon emissions.

"What does my carbon footprint mean to me, why should I care about it?"

"I do think it's good from a green point of view to be able see how much energy we're using."

"I'd rather see the money being spent on wind farms or solar."

"I don't think that smart meters will make much difference to carbon emissions."

The smart home

The concept of the smart home was explained and elicited some interesting and, overall positive, responses.

"The smart home? That's pretty cool."

"Being able to be out and turn on my heating 30 mins before I got home is really appealing."

"It would also be good to be able to turn off the heating if I'd left it on by accident to save money."

"If you were on holiday it would be god to control your lights for security."

"I'd pay for the app that let me do all this stuff."

"Some people use the timer for heating some use an automated thermostat – now they can have flexibility."

"What about the security issue if someone else could control your house"

"It opens the door for error if you are controlling things via the phone."

Appendix 2: YouGov survey highlights

Current awareness of smart meters is low, but Britain is broadly in favour

63 percent don't know what a smart meter is

75 percent haven't heard of the Government's smart meter roll out program

However, when explained what a smart meter is – 60 percent are in favour of the smart metering roll out programme

74 percent sad that more visibility into energy usage is a good thing

Britain says smart meters have several benefits for consumers and the country

When asked what the expected benefits might be:

- 77 percent said better visibility into energy usage

- 73 percent said an end to estimated billing

- 64 percent said real time feedback on their energy consumption would be likely to lead to a change in energy consumption behaviour

- 60 percent said reduced energy waste

- 23 percent said lower energy prices

When explained that smart meters could have a major impact on total emission, more than half (52 percent) said this made them more appealing.

Smart meters: a stepping stone to the smart home

A smart meter and its associated communications hub, provides the platform for a smarter appliances and a more automated home. When asked what the most appealing aspects of the smart home would be:

- 54 percent said automated climate control – remotely managing heating

- 61 percent said smart appliances – appliances that suggest usage based on energy prices and consumption

- 52 percent said the ability to remotely manage home security

Painting the vision of a smart home makes smart meters more appealing to 60 percent of those surveyed.

By contrast, moderate cost savings have limited appeal to consumers. Only 18 percent felt cost savings under 50 pounds would be a strong motivation for smart meter adoption, whereas the majority (44 percent) felt 50-200 pounds saving would be the biggest motivation.

£10 per year or less	5 percent
More than £10, up to £50 per year	13 percent
More than £50, up to £100 per year	24 percent
More than £100, up to £200 per year	20 percent
More than £200 per year	14 percent
Don't know	18 percent
Not applicable - no level of energy saving make me inclined to adopt a smart meter	7 percent

Smart meter concerns

Top ranking issues:

1. Data Privacy (59 percent)
2. Inaccurate billing (32 percent)
3. Concerns about installation (28 percent)
4. Health or safety concerns (16 percent)

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