Improving Customer Research and Engagement

United Utilities Water

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United Utilities

helping life flow smoothly

Contents

Executive Summary

PR14 represented a step change in customer engagement in price reviews and we are committed to developing this further for PR19. This paper sets out a potential framework for the approach to customer research and engagement and shows how this could be applied to the various aspects of service delivery.

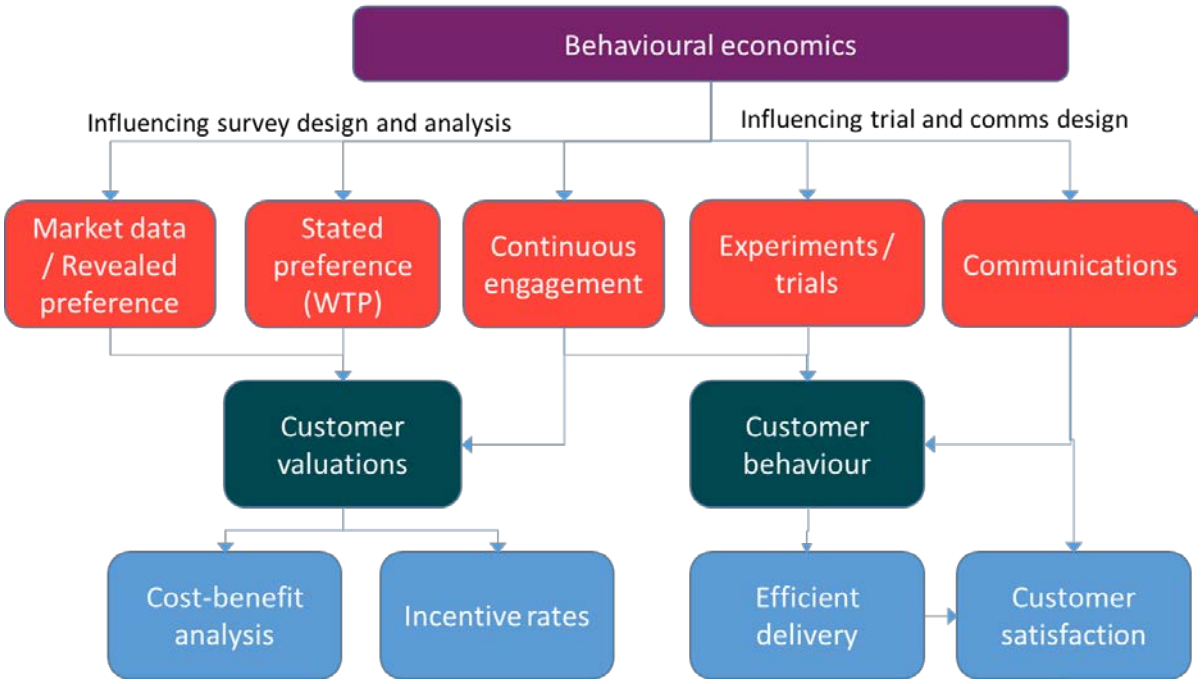
This summary sets out the framework and its potential application. In the paper the potential advantages and disadvantages of the available approaches to customer research are considered in more detail.

Customer research and interaction with customers helps to identify which areas of service customers are dissatisfied with and which they see as priorities for improvement. Monetary values for benefits of potential improvement are needed for carrying out cost-benefit analysis and to contribute to setting incentive rates for Outcome Delivery Incentives (ODIs). At PR14 these were predominantly based on Willingness to Pay (WTP) surveys but we recognise the limitations of this approach and agree that there is scope to use a wider range of information to determine benefit values. In addition, information should be obtained on values for different customer groups, establishing how values vary between different socio-economic groups and between different regions of a company's area.

The diagram below shows how the various elements of engagement can be combined:

- Customer valuations should be derived from all the available evidence – including more evidence from observing customer behaviour and from new designs for choice experiments.
- Experiments and trials, continuous engagement, and improved communication should be used to increase customer involvement in service delivery.
- Behavioural economics gives insights on the effects of psychological, social, cognitive, and emotional factors on economic decisions. These insights can be used in designing customer research, in recognising the limitations of any research and analysis, and in designing effective communication approaches.

Valuing customer priorities and involving customers



WTP surveys are likely to be a part of the valuation approach for most aspects of service. There are limits on the extent to which values can be derived from actual customer behaviour. In addition, we need to take into account customers' willingness to pay to resolve service problems which they do not actually experience. These altruistic values cannot be derived from observing customer decisions. However, a final judgement on the value to be attributed to improvements will also depend on other engagement and research. The weight which should be given to WTP results should depend on:

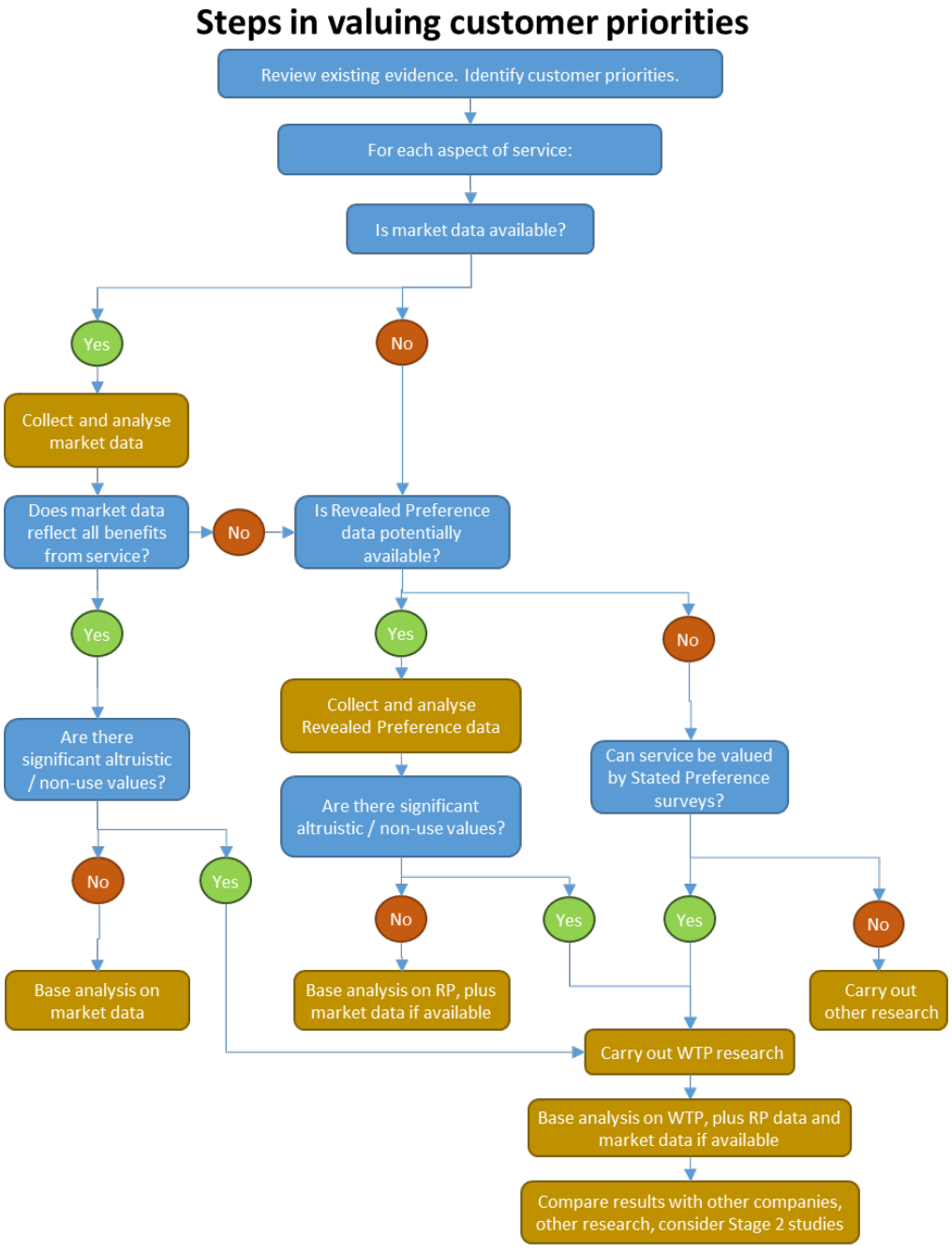
- Do WTP results match evidence from day-to-day engagement with customers and any other evidence on priorities?
- Are WTP results outliers compared with previous results and results from other companies?
- How statistically robust are the results compared with results from other approaches?

The importance of carrying out complementary research depends on the conclusions from these questions and on:

- How significant are potential improvements where there is an element of choice over levels of service?
- What is the relative importance of prioritisation at a company level and national standards?
- How much difference would alternative valuations make to business plan proposals?

In combining the results from a range of evidence, there will inevitably be an element of judgement in determining a value to be used for evaluating proposals. Companies should involve CCGs in making these judgements and the balance chosen will also be subject to review through testing the overall acceptability of a plan.

A framework for determining the appropriate approach to valuation is set out below. A value based on observed behaviour is generally preferable but the limitations on obtaining complete values from such observations means that in many cases WTP results will form a part of the estimate of appropriate value. Customer priorities need to feed in at the beginning, in to decisions about which aspects of service to value and at the end to validate the values arising from research.



1. Introduction

PR14 represented a step change in customer engagement in price reviews and we are committed to developing this further for PR19. Key aspects of this are:

- Improving customer research so that it more accurately reflects customer priorities.
- Ensuring that research and engagement is continuous rather than driven by price reviews.
- Involving customers in service delivery.

This paper concentrates on improving customer research, in particular in relation to determining valuation of potential improvements, but also considers the closely related issue of increasing customer involvement in delivery.

The following sections cover:

2. The need to improve understanding of customer needs.
3. The contribution of behavioural economics to customer research and engagement.
4. A review of the use of Willingness to Pay.
5. Valuing customer priorities – deriving values from actual water service choices.
6. Valuing customer priorities using market data for related goods – revealed preference.
7. Obtaining altruistic and non-use values.
8. Overall satisfaction approaches
9. Improving stated preference surveys
10. The proposed framework for choosing the customer research approach
11. The framework for valuation
12. Conclusions

2. The need to improve understanding of customer needs

In its recent December 2015 Water 2020 document, Ofwat stated that:

> "we would like to see a reduction in the reliance on stated preference survey-based approaches and more emphasis on a richer set of evidence to genuinely understand customers' needs and requirements. […] This includes making more use of evidence obtained through their day-to-day contact with customers (such as complaints data, queries and tweets). It also includes thinking about more radical, frontier-shifting, approaches to engaging with customers, such as using revealed preference research and choice experiments" [1].

The wish to change the approach to understanding customer priorities reflects concern that willingness to pay surveys may not accurately reflect the value placed on service improvements – there are large differences between values for different companies, and over time, which are unlikely to reflect real differences in customer valuation. In addition, a different approach to

[1] Ofwat (2015), Water 2020: Regulatory framework for wholesale markets and 2019 price review – Explanatory document

engagement is seen as part of getting to know customers better, more actively involving customers in decision-making and encouraging their participation in developing service delivery solutions. This will contribute to building customer trust and confidence in water companies.

The recent UKWIR project reviewing PR14 engagement also emphasised the need for continuous engagement:

> "Ongoing engagement, while requiring greater commitment, will have significant benefits for the industry. As the following figure shows, instead of mobilising a large engagement programme to serve the price review, ongoing engagement via research and consultation will enable companies to develop plans iteratively and over time (Ongoing). For some companies this will require realigning the corporate culture around the views of the customer (Real). An integrated communications strategy will also help companies demonstrate how the customer is influencing decision-making (Transparent)"[2].

We agree that customer engagement should be a continuous process and that customers should be involved in decision-making. We already make use of quarterly brand tracking and customer satisfaction surveys, text message feedback from customer contacts and regular customer communication campaigns. We are aiming to develop these approaches further.

For establishing valuations of different aspects of service we, along with other companies, have relied primarily on willingness to pay surveys. However, Ofwat, as noted above, has reservations about such surveys and these were also expressed in the UKWIR review:

> "[…] engagement practitioners in the industry have concerns about the reliability of the industry-standard WtP methodology. Whilst the data provided by WtP is vital for cost benefit analysis within business planning, this review challenges the industry to develop a new WtP instrument that conveys choices in a way customers fully understand".

This paper aims to develop the approach to valuing customer priorities, taking into account the views expressed in the UKWIR project. It also draws on an UKWIR project currently under way on setting outcome delivery incentives[3], and on previous UKWIR projects on cost-benefit analysis and willingness to pay surveys.

3. The contribution of behavioural economics to customer research and engagement

Behavioural economics studies the effects of psychological, social, cognitive, and emotional factors on economic decisions. Its findings can be used in designing customer research and in recognising the limitations of any research and analysis. Some key concepts are:

- Framing – what context has been given (particularly important for stated preference surveys).

[2] Blue Marble for UKWIR (2014), Post PR14 Customer engagement, communications and education

[3] Frontier Economics for UKWIR (2016), Setting performance commitments and output incentives to deliver best value for money

- Social proof – what others do is influential in determining behaviour.
- Ease / habit – which option is easiest or most convenient? (important for revealed preference studies e.g. failure to take up insurance against water supply problems does not necessarily reflect low valuation of water supply).

Behavioural economics can be used not only in designing approaches to engaging customers more effectively through informing them, and involving them in service delivery. This includes issues such as:

- Encouraging water efficiency.
- Discouraging use of the sewer system for disposing of fats, oils and greases. In common with other companies, we regularly run campaigns designed to improve customer understanding of what not to flush. As a development of this activity, we are planning a number of trials of different approaches to educating customers on collecting fats, oils and greases.
- Encouraging sustainable approaches to surface water drainage.
- Promoting catchment management to improve water quality.
- Encouraging bill payment – we have commissioned research into this area and are intending to carry out some trials of alternative approaches.

Behavioural economics can contribute to determining which approaches are most effective in getting messages across and in changing behaviour. For example, social norms are influential in determining behaviour. Therefore customers may be encouraged to save water or to pay their bills if they are told how many customers in their local area are already doing so. This approach has been shown to be effective in relation to collection of tax payments.

More effective customer engagement may not only result in more effective service delivery but also improve overall satisfaction with services, as noted in the presentation by Advizzo at the Ofwat workshop on customer engagement[4].

4. A review of the use of willingness to pay

Customer research and interaction with customers helps to identify which areas of service customers are dissatisfied with and see as priorities for improvement. However, in making choices between different potential improvements, costs and benefits then need to be weighed up. This needs monetary values to be attributed to aspects of service (choices could be made through use of judgement but this would involve implicit values being placed on alternative improvements). In addition, monetary values are needed as an input to setting incentive rates for Outcome Delivery Incentives.

[4] Advizzo (2015), Ofwat workshop for CCG Chairs on future customer engagement in the water sector

Willingness to Pay surveys were used by all companies at PR14 to establish values for potential service improvements. These are a form of stated preference survey:

> "Stated preference techniques rely on asking people hypothetical questions, rather like a market research interview. The aim is to see how people respond to a range of choices, and thus to establish the extent of collective willingness to pay for a particular benefit (or their willingness to accept payment in exchange for bearing a particular loss)"[5].

WTP surveys at PR14 showed a wide range of results. Some examples are shown in the table below (taken from an analysis by Accent of PR14 WTP survey results)[6].

Household willingness to pay – PR14 surveys

Service characteristic	High value	Low value	Median
1 property affected by 1 drinking water taste and smell incident	£28,537	£196	£2,008
1 property affected by an unexpected interruption (3 to 6 hours)	£1,670	£50	£206
1 property affected by 1 internal sewer flooding incident	£367,291	£22,530	£110,800

Although some differences between customer WTP values could be expected, due to differences in factors such as household incomes and bill levels, the differences are much larger than could be explained by these factors. In addition, the high values, and possibly the median values, could be considered implausibly high. For example, people would probably expect most people being willing to accept a short-term water supply interruption for much less than £1,670, and probably less than £206, relative to what a customer might be expected to accept.

It may be that willingness to pay expressed in answer to hypothetical questions tends to be higher than real willingness to pay when presented with real choices. A paper by Murphy et al[7] suggested that "Individuals are widely believed to overstate their economic valuation of a good by a factor of two or three", although the analysis in this paper generated a median value of the ratio of hypothetical to actual value of only 1.35.

A factor in explaining differences between company values is likely to be the scale of improvement put to customers in surveys. A government study on alternative approaches to benefit valuation[8] referred to a number of studies where willingness to pay is relatively

[5] DETR (2002), Economic Valuation with Stated Preference Techniques: Summary Guide

[6] Accent (2014), Comparative Review of Willingness to Pay Results

[7] Murphy et al (2005), A Meta-Analysis of Hypothetical Bias in Stated Preference Valuation

[8] HM Treasury / DWP (2011), Valuation Techniques for Social Cost-Benefit Analysis: Stated Preference, Revealed Preference and Subjective Well-Being Approaches

insensitive to the size of improvement. This appears to apply mainly to surveys covering a number of subjects (as WTP surveys do). It is likely that customers focus on the areas which they think should be improved, rather than the scale of improvement, because it is very difficult to take in all the information presented. Therefore companies presenting a relatively small improvement will tend to get a relatively high value per unit.

Another factor which is likely to affect WTP values is the way in which questions are posed to customers and the background information provided. The Treasury / DWP study noted that preferences and valuations are highly dependent on the framing of the question.

In view of the limitations of putting hypothetical questions to customers, then we need to consider:

- Whether it is possible to derive values from actual behaviour, either for water services or for related goods.
- Whether it is possible to improve the reliability of WTP survey results.

5. Valuing customer priorities – deriving values from actual water service choices

Ideally, choices would be based on observations of customers' service choices, given the price which they have to pay. However, for water and waste water service customers have limited choice (and this will still apply even with extension of competition because there is very limited scope to give choice for a service supplied through a network). It is possible to quantify the value customers place on additional water by observing changes in demand when metering is introduced or when metered prices change. For environmental improvements, it is sometimes possible to apply a market price, for example the UKWIR report on willingness to pay recommended:

> "Use market data for the relevant habitats, whenever available. For instance, the price of shellfish if the objective is to estimate the benefits associated with the preservation of shellfish habitats"[9]

It is, however, difficult or impossible to observe market behaviour on alternative levels of, for example, frequency of interruptions to supply, because the choice is not available (except for a few business customers in some company areas who may be able to choose interruptible supplies). There is very limited opportunity to offer different levels of service to some customers at different prices and observe the impact, because of the limitations on ability to vary service and because it would cut across our regional averaging of charges.

[9] NERA / Accent for UKWIR (2011), Carrying out willingness to pay surveys

6. Valuing customer priorities using market data for related goods – revealed preference

If market data are not available, then it may be possible to observe monetary values through "revealed preference" approaches, assessing demand for some related good for which there is a market price. This was set out in the study commissioned by Ofwat in 2011[10]:

- There may be a **substitute,** for example bottled water is a substitute for tap water, and in response to a service failure customers can switch to bottled water**.** Expenditure on bottled water can then be used to assess a value for drinking water.
- There may be a **complement**, where joint consumption of a market good and some aspect of water service is required to derive the benefit. For example, time and money spent on travel to a recreation site where there is a clean river may be used to value the benefit from river quality improvement.
- Water service provision may be an **attribute** of a market good. For example, demand for housing depends on the surrounding environment. House prices may be affected by sewage treatment works odour or sewer flooding – the impact on house prices can be regarded as the value of the negative amenity caused by the aspect of water service.

There have been a number of studies applying revealed preference approaches. For example:

- The ChREAM (Catchment Hydrology, Resources, Economics and Management) study found a significant relationship between improvements in water quality and increased recreational visits[11].
- An UKWIR study[12] analysed the impact of sewage treatment odour on house prices but did not find any significant effect.

The use made of revealed preference studies has been limited because:

- Not all aspects of water services have market goods associated with them which can be used to value water service.
- Relevant data are often not readily available.
- It may be difficult to separate the impact of water service provision from other influences (as in the UKWIR odour study).
- It requires that customers, in making decisions, have full information. For example, a study of the impact of sewer flooding risk on house prices would not reveal true benefit values if customers were not aware of the risk.

[10] The Use of Revealed Customer Behaviour in Future Price Limits (2011), Cascade / eftec

[11] Professor Ian Bateman et al (2010), Integrated and spatially explicit modelling of the economic value of complex environmental change and its knock-on effects

[12] Arup for UKWIR (2008), A Framework for Cost Benefit Analysis in Odour Control Projects

- Revealed preference studies may only reflect part of the value of an aspect of water service, for example
  - A study of travel costs to recreational sites would not reflect benefits to those living locally.
  - Collecting information about purchase of bottled water in response to water quality issues would only partially reflect the inconvenience of such a problem.

A particularly important issue is that revealed preference techniques only reflects the benefit of those directly benefiting from the service. It does not reflect altruistic or non-use values from customers in general:

- Customers may be prepared to pay for improvements such as addressing sewer flooding problems which will benefit other customers but not themselves.
- Customers may see environmental improvements as valuable regardless of whether they or other customers benefit from them.

This issue is addressed further in the following section.

Despite these limitations, revealed preference studies can contribute to developing benefit values. Their role within the framework is discussed further in Section 11.

7. Obtaining altruistic and non-use values

Reliable water and wastewater services can be seen as essential services, to which customers have a right. This is analogous to the arguments made in relation to extending broadband services. The Government's press release announcing the Universal Service Obligation, referred to:

> "the government's intention to put access to broadband on a similar footing as other basic services like water and electricity[…] Access to the Internet shouldn't be a luxury; it should be a right – absolutely fundamental to life in 21st century Britain"[13].

Similarly, reliable water services and homes not subject to sewer flooding can be regarded as something to which customers are entitled and fundamental to modern life. As with broadband, the cost of this is not borne by the specific customers affected but by customers in general. The calculation of whether service improvements are worthwhile should not just be determined by

[13] Government press release (November 2015), Government plans to make sure no-one is left behind on broadband access

the willingness to pay of those affected; if it were, then probably universal broadband would be judged to be uneconomic.

The speed at which service improvements can be delivered is constrained by ensuring that any bill increases are affordable. The customers who will pay for the improvements have a right to have their willingness to pay taken into account in determining the rate at which improvements will be made. Previous research shows that customers are generally willing to pay for improvements even when they do not benefit themselves.

Revealed preference and market value approaches focus on the value to the customer receiving the benefit. Therefore they do not identify this willingness to pay amongst the customer base as a whole.

Similarly, for environmental improvements people who do not actually visit the areas benefiting from improvement are often willing to pay for improvement. This non-use value is reflected in people paying to join organisations such as the RSPB or Wildlife Trusts even if they do not visit reserves owned by these organisations.

These altruistic and non-use values can only be captured by stated preference surveys, rather than market valuations. The appropriateness of taking into account these altruistic values was recognised in the 2011 report on WTP surveys.

It is not appropriate to take into account altruistic values for all potential improvements. If it is an aspect of service that may affect all customers, such as short-term interruptions, then the combination of altruistic willingness to pay for improvements for others, and a customers' valuation of the benefit to themselves, could lead to an overstatement of total benefit. The aspects of service for which it is appropriate to take into account altruistic / non-use values are discussed in Section 11.

8. Overall satisfaction approaches

The HM Treasury / DWP study referred to life satisfaction approaches, which use reported life satisfaction in surveys such as the ONS's Integrated Household Survey to value non-market impacts. The approach uses econometric methods to estimate the life satisfaction provided by non-market goods, which is converted into a monetary figure by also estimating the effect of income on life satisfaction.

The approach therefore assesses the impact of policies on how people think and feel about their lives as a whole, instead of assessing impact based on what people say they want and what they choose. The reason for adopting this approach is that behavioural economics and psychology studies suggest that people's preferences (revealed or stated) may not be good indicators of their actual welfare or well-being.

It might not be practical to estimate the impact of changes in water services on overall well-being as they would probably be impossible to detect, given all the other influences (unless a survey was carried out specifically for those customers who had benefited from a significant change, such as a sewer flooding problem being removed). There could be potential to adapt the approach by examining the impact of some change, such as a long-term interruption or a change in water quality, on customers' overall satisfaction with water companies, compared with another group of customers who have been unaffected. A number of companies have used such measures of satisfaction as performance measures for AMP6. It may be difficult to convert such impacts into monetary values but it could be used to establish the relative impact of different service events on customer satisfaction, to compare with results from stated preference surveys.

9. Improving stated preference surveys

The limitations of WTP surveys have been discussed in section 4 above but there are also difficulties in obtaining robust data from alternative approaches. In addition, WTP surveys ensure that all aspects of service have been tested using a consistent approach and allow for trade-offs between the different aspects of service. Therefore there will be a continuing role for WTP surveys, but there is a need to try to improve the robustness of results.

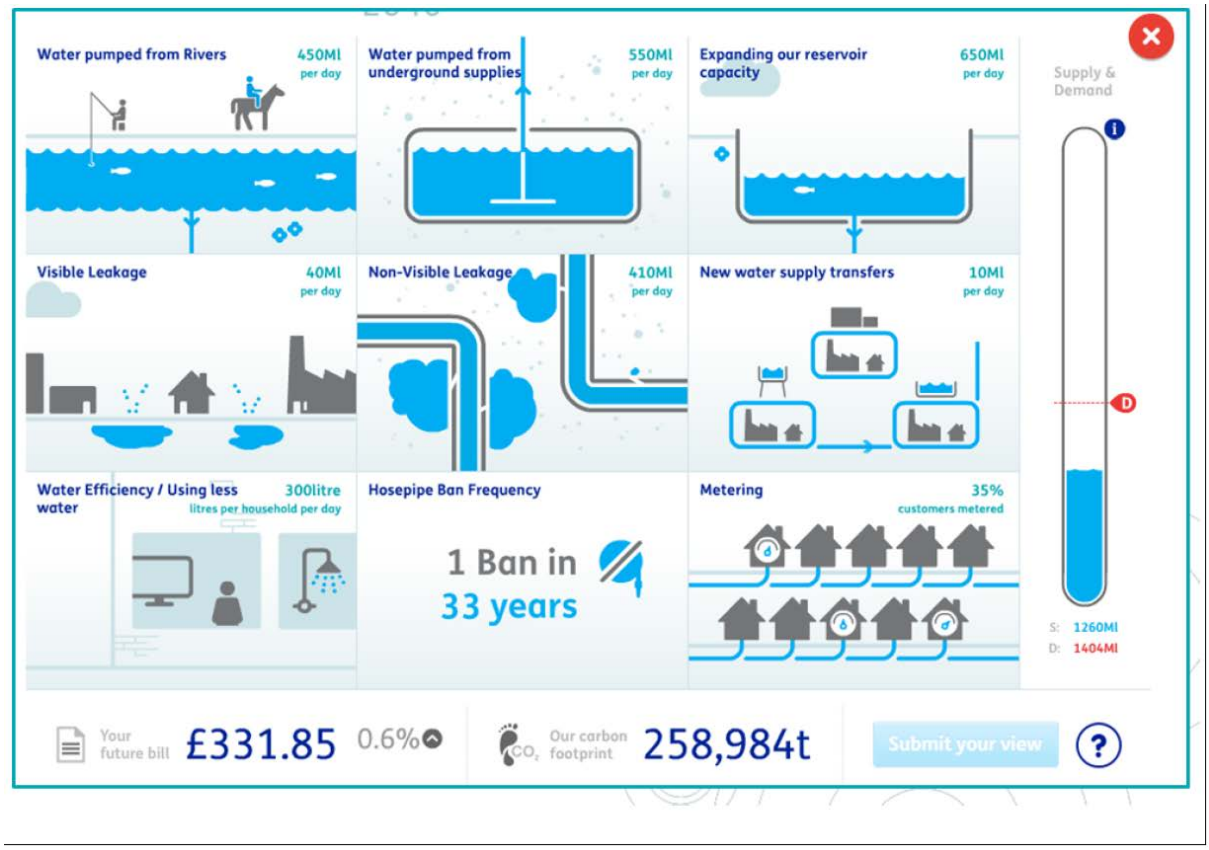
The following steps should be taken:

- Compare data with previous results and with other companies' results and methodologies – there should be an expectation of earlier and increased publication, compared with PR14. More standardisation of methodologies would be desirable but it may be difficult to achieve this for PR19.
- Carry out a reasonableness check – e.g. using CCGs or focus groups – are the results of the WTP survey, and of alternative research methods, seen as likely to be representative of customers' real willingness to pay? Where results are not felt to be reasonable, carry out further research.
- Check the statistical validity of the results.
- Test the impact of alternative questions and context, including provision of information on comparative performance.
- Test the impact of changing the range of performance improvement.
- Consider carrying out more in-depth surveys of specific aspects of service, using methods which make clearer the trade-offs available.

In relation to the last of these points, a number of companies used approaches which enabled customers to build their own set of service changes and bills. An example is shown below, carried out by Severn Trent for supply-demand options (taken from the UKWIR report on PR14 customer engagement). This approach allowed customers to vary options up or down and see the effect

on the supply-demand balance on bills. This approach is more transparent and may produce more realistic results. A similar type of survey was used by DECC to test energy supply options. It may be that such approaches could replace the traditional WTP survey.

Severn Trent Choice experiment for supply-demand options



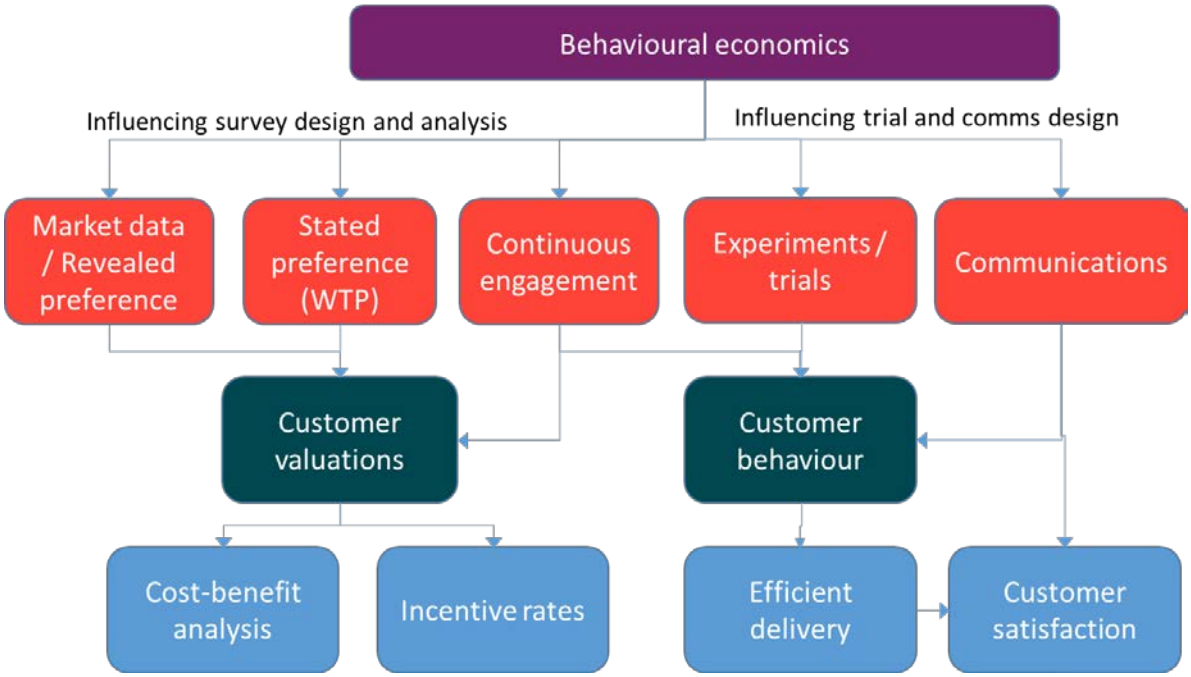
The approach should ensure that it is possible to obtain values for different groups of customers, in particular how values vary for low income groups and across different parts of the area. This may require balancing of the sample to ensure that there are enough participants from each group.

10. The proposed framework for choosing the customer research approach

The diagram below shows how the various elements of engagement are combined:

- Customer valuations should be derived from all the available evidence.
- Experiments and trials, continuous engagement, and improved communication should be used to increase customer involvement in service delivery.
- Behavioural economics should be used in designing and interpreting customer research, and in designing effective communication approaches.

Valuing customer priorities and involving customers



Customer priorities need to feed in at the beginning of the process, into decisions about:

- Where there needs to be improved communication with customers.
- How customers can be involved in improving service delivery.
- For which aspects of service valuations need to be determined.

When valuations have been obtained, the values assessed from research should be checked against customer priorities.

The following section considers the approach to valuation in more detail.

11. The framework for valuation

WTP surveys are likely to be a part of the valuation approach for most aspects of service but a final judgement on the value to be attributed to improvements will also depend on other engagement with customers and other research projects. The weight which should be given to WTP results should depend on:

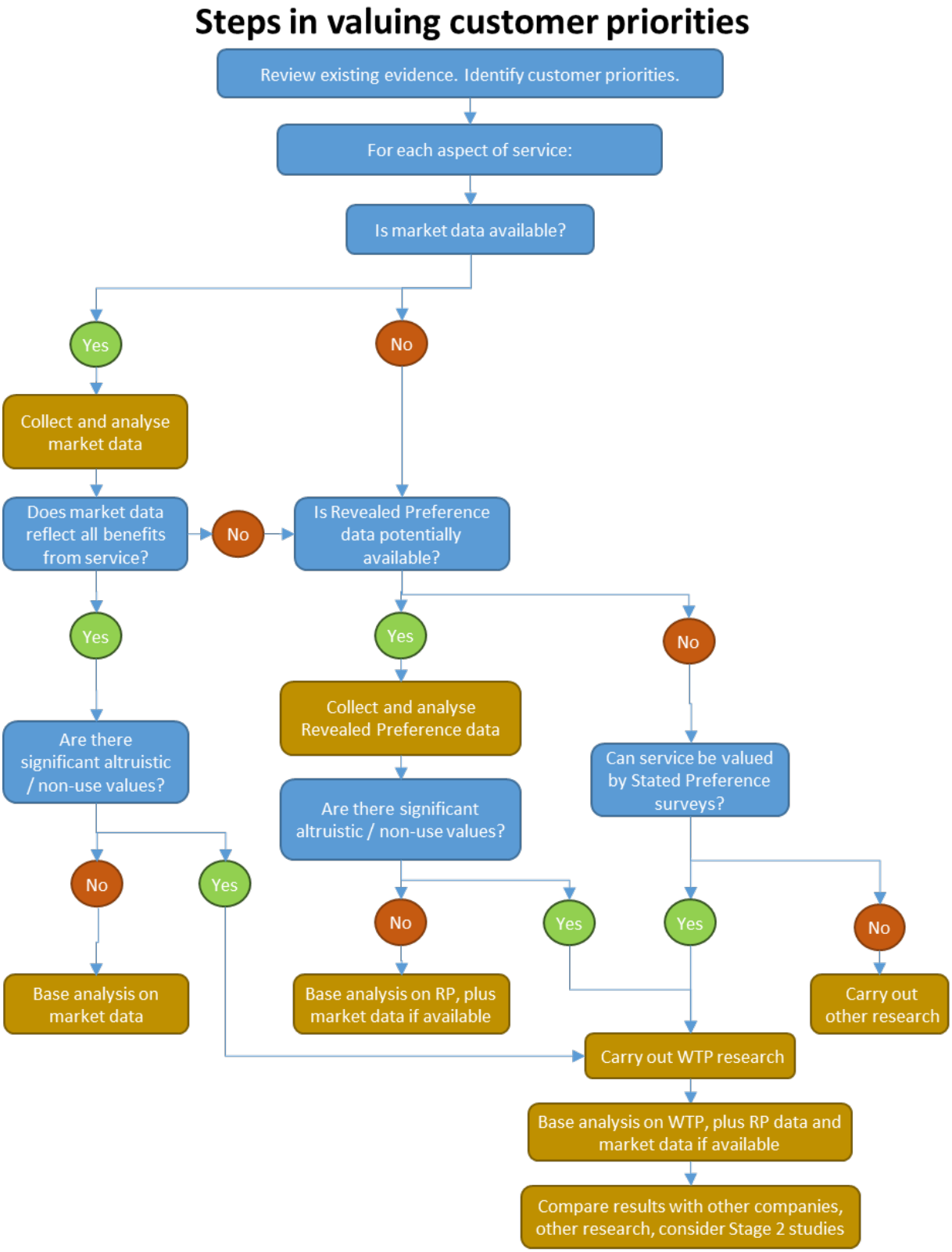
- Do WTP results match evidence from day-to-day engagement with customers and any other evidence on priorities?
- Are WTP results outliers compared with previous results and results from other companies?
- How statistically robust are the results compared with results from other approaches?

The importance of carrying out complementary research depends on the conclusions from these questions and on:

- How significant are potential improvements where is an element of choice over level of service?
- What is the relative importance of local prioritisation and national standards? (If, for example, an interruptions target was to be set nationally again, as at PR14, then for most companies there would be little value in undertaking additional work on local customer priorities).
- How much difference would alternative valuations make to business plan proposals?

In combining the results from a range of evidence, there will inevitably be an element of judgement in determining a value to be used for evaluating proposals. Companies should involve CCGs in making these judgements and the balance chosen will also be subject to review through testing the overall acceptability of a plan.

A framework for determining the appropriate approach to valuation is set out below. A value based on observed behaviour is generally preferable but the limitations on obtaining complete values from such observations means that in many cases WTP results will form a part of the estimate of appropriate value. Even where market data or revealed preference is likely to be the main basis for determining valuations, it will be desirable to retain the aspect of service in willingness to pay research as a cross-check.


Steps in valuing customer priorities
Review existing evidence. Identify customer priorities.
For each aspect of service:
Is market data available?
Yes
No
Collect and analyse market data
Does market data reflect all benefits from service?
No
Is Revealed Preference data potentially available?
Yes
Yes
No
Collect and analyse Revealed Preference data
Are there significant altruistic / non-use values?
Can service be valued by Stated Preference surveys?
No
Yes
Are there significant altruistic / non-use values?
No
Yes
Yes
No
Base analysis on market data
Base analysis on RP, plus market data if available
Carry out other research
Carry out WTP research
Base analysis on WTP, plus RP data and market data if available
Compare results with other companies, other research, consider Stage 2 studies

The table below applies the framework to some examples to show what approaches which could be adopted for different aspects of service delivery. In each case, consideration needs to be given to how needs and priorities for different groups of customers.

Aspect of service	Potential research approaches
Water	
Water quality - compliance	• Mainly determined by national standards
Short-term interruptions to supply	• Willingness to pay will be the major input. • Potential to carry out further research on values of different duration interruptions. • Reasonableness check on WTP value is essential.
Water efficiency	• Potential for trials on effectiveness of alternative approaches.
Recreational sites	• Potential to use revealed preference.
Catchment management	• Potential for trials on effectiveness of alternative approaches to encourage sustainable solutions.
Waste Water	
Sewer flooding	• Altruistic values are highly significant. Revealed preference analysis would be possible but would very much underestimate appropriate values.
River quality	• Potential for revealed preference studies but significant non-use values. Decisions are made nationally but should be influenced by local priorities. Some standardisation of company approaches would be valuable.
Treatment works odour	• Potential for revealed preference studies.
Customer service	
Bill payment	• Potential for trials on effectiveness of alternative approaches.

12. Conclusions

This paper has set out a potential framework for the approach to customer research and engagement and shown how this could be applied to the various aspects of service delivery.

We consider that this could lead to a significant improvement in customer engagement at PR19.