

Report for Ofcom

Accreditation scheme for
price comparison
services: audit guidance
document

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1 Introduction

Ofcom is committed to ensuring that consumers have access to the most transparent, accurate and comprehensive price comparison information, and in December 2006 it launched a new accreditation scheme for providers of price comparison services. In November 2013, Ofcom updated the scope of the scheme to ensure it remains valuable and relevant to consumers and price comparison services.

Price comparison services have diversified considerably in recent years, spurred on by the increased number of communications providers and the increased range of services on offer. The current accreditation scheme aims to accredit price comparison services for a wide range of relevant services, including fixed and mobile telephony, broadband Internet access (fixed and mobile), and digital TV.

This accreditation scheme requires candidate price comparison services to undergo a formal audit, carried out jointly by Ofcom and Analysys Mason. Ofcom is in charge of the ‘soft’ qualitative checks, such as compliance with consumer rights (for example, Ofcom requires accredited organisations to comply with existing relevant legislation, including the Data Protection Act and Disability Discrimination Act, and any other applicable legislation). Analysys Mason concentrates on a technical audit (that is, assessing the quantitative elements of the price comparison service) and the supporting processes involved in keeping it up to date. This document describes the process by which the technical audit is executed. The structure that underpins our approach consists of two main elements:

- the **methodology** underlying the applicant’s price comparison model
- the **processes and management systems** in place to ensure the integrity of data-flows throughout the model and to maintain the quality of the information provided to the user via the price comparison service.

In designing the audit process, we have attempted to ensure that the overall application process for accreditation is fair and transparent to candidates, minimise reporting overheads and procedures, and be as streamlined as possible. Accordingly, we have not only set out the technical details of what will be audited and how, but we have also included a series of annexes containing a set of reporting templates which simplify the audit process generally.

Ofcom may make changes to the guidance provided in this document in the future. For minor changes it is likely that Ofcom will consult directly with accredited price comparison services.

The remainder of this report is structured as follows:

- Section 2 outlines the scope of the audit
- Section 3 contains individual sections describing the key evaluation criteria that will be explored in the two components of the technical audit (methodology and process and management systems)
- Section 4 details the timescales for carrying out an audit

- Section 5 sets out the audit procedures, defining the steps we will take to make sure the audit is carried out in line with the defined scope
- Section 6 describes the process for reviewing accredited price comparison services 12 months following initial accreditation and then every 18 months subsequently.

The report also contains several annexes:

- Annex A: documentation required for technical audit
- Annex B: template for technical audit report
- Annex C: documentation required for further review
- Annex D: template for further review report.

2 Scope of the audit

This section describes our expectations regarding the scope of the audit process.

2.1 The audit process

The core audit process will be made up of three phases:

Phase 1: Qualitative audit The initial phase will address the qualitative aspects of the applicant's price comparison service, including, for example, the level of interactivity, issues of data protection, ease of access for disabled users, and the nature of the business model (i.e. consumer access charges, ownership, revenue streams) – required to assess its independence. This phase of the audit will be carried out by Ofcom.

Phase 2: Technical audit The second phase will consist of an independent technical audit of the calculation engine and processes, primarily addressing the quantitative features of the price comparison service. This phase of the audit will be carried out by Analysys Mason and will involve:

- an initial review of documentation from the applicant and sanity check
- a comprehensive audit of the applicant's model methodology, processes and management systems
- a telephone or face-to-face meeting with key staff of the applicant to assess implementation and question them further on any issues of concern.

Our approach is described in detail in Section 5. For each applicant, our findings, including our recommendations for accreditation or otherwise, will be written up in our technical audit report (see the template in Annex B) and forwarded to Ofcom.

Phase 3: Minor adjustments (optional) The third and final phase is optional. If there are a relatively small number of minor issues that need to be rectified before we can recommend accreditation, we will notify Ofcom of the required changes. Ofcom will liaise with the applicant to determine whether the applicant wishes to proceed with the minor adjustments proposed, and to agree a timescale. It may be possible for Ofcom to offer accreditation at this point conditional on changes being made within a set period of time, or it may be more appropriate to require the changes to be completed before accreditation is given: this will depend on Ofcom's view of the nature of the adjustments required.

If Ofcom considers it necessary, Analysys Mason will review the changes and issue a revised final version of the audit report.

If the required adjustments are of a very minor nature, then Analysys Mason may liaise directly with the applicant to agree rectification as part of Phase 2.

2.2 Scope of the technical audit

The technical audit carried out by Analysys Mason will consider price comparisons for one or more relevant services, including (but not limited to):

- fixed telephony
- mobile telephony including data services
- international roaming
- fixed broadband Internet access
- mobile broadband
- voice over IP (VoIP)
- digital TV
- bundled services.

We will not consider the effects of bundling other unrelated services such as gas and electricity, and we will focus only on services which are offered to consumers. Accreditation is open to price comparison services delivered over a variety of formats including websites and telephone services.

In some cases price comparison services may choose to provide a ‘white label’ version of their website to third party companies which can then provide the same price comparison service on a non-accredited website. In such cases, and at the sole discretion of Ofcom, the Ofcom price comparison accreditation scheme logo may be used on the non-accredited website (without a separate audit). The white label service must be similar to the accredited service and rely on the accredited calculator. All qualitative information required for accreditation should also be included as part of the white label service. It is the responsibility of the accredited price comparison service to ensure that the white labelled services are being operated correctly by non-accredited websites. This includes, but is not limited to, ensuring that the Ofcom accreditation logo may only appear on the non-accredited website directly in relation to the accredited calculator.

2.3 Our expectations of applicants’ price comparison services – and associated consumer services

Under the accreditation scheme, applicants will be approved based on a number of broad criteria, as outlined in Ofcom’s statement document *Accreditation Scheme for Price Calculators: Decision on changes to the scope and operation of the Scheme*. The table below lists these and describes where each is discussed in more detail.

Figure 2.1: Summary of approval criteria for accreditation of price comparison services [Source: Analysys Mason, 2013]

Criteria category	Approval criteria	Further details	Party responsible
Access	The price comparison organisation must ensure its services are accessible to disabled users	Section 3.2	Ofcom
	All price comparison organisations must make sure they comply with the Disability Discrimination Act and the Data Protection Act and any other relevant legislation	Section 3.2	Ofcom
	Only providers of online price comparison services who also offer consumers the ability to get advice offline can be accredited	Section 3.2	Ofcom
	The price comparison organisation should have in place clearly explained, fair and timely processes for handling complaints	Section 3.2	Ofcom
Charging	Organisations seeking accreditation must provide a free service or impose only a reasonable charge on consumers accessing their services	Section 3.3	Ofcom
Accuracy	Data used to calculate price comparisons must be kept up to date	Section 3.4	Analysys Mason
	The price comparison service must calculate accurately	Section 3.4	Analysys Mason
	The organisation must provide, on their result pages, information about any limits on data usage that apply to services identified in comparison searches	Section 3.4	Analysys Mason
	For broadband comparisons, the service must display 'up to' broadband speeds	Section 3.4	Analysys Mason
	The methodology must be internally consistent, appropriate, and correctly implemented.	Section 3.4	Analysys Mason
Transparency	Assumptions and limitations of the service must be clearly set out	Section 3.5	Analysys Mason
	The organisation must be transparent about any commercial agreements or links they have in place with one or more communications providers	Section 3.5	Ofcom
	The service must enable consumers to sort the results of any calculation by price and the default sort metric must be appropriate	Section 3.5	Analysys Mason
	The organisation must make it clear to consumers how it makes money or funds its activities. Whether it receives any commissions (although not the actual amount) should be disclosed	Section 3.5	Ofcom

<i>Criteria category</i>	<i>Approval criteria</i>	<i>Further details</i>	<i>Party responsible</i>
	The service must alert consumers that their provider may increase the cost of their monthly deal and that they should be allowed to exit their contract without penalty if this happens ¹	Section 3.5.4	Ofcom
	The organisation must provide a link to Ofcom's work on broadband speeds and provide tools, or links to tools, for consumers to test the speed of their line	Section 3.5.4	Ofcom
	Services must explain that traffic management policies may apply and provide links to communications providers' policies where available	Section 3.5.4	Ofcom
	The service must provide links to Ofcom's comparative information on customer service and complaints handling	Section 3.5.4	Ofcom
	The service must explain that actual broadband speeds experienced may vary from the 'up to' speed provided by a package	Section 3.5.4	Analysys Mason
<i>Comprehensive-ness</i>	Services must include an appropriate number of communications providers, including key players	Section 3.6	Analysys Mason
	The process used by price comparison service providers to select which communications providers to include should be transparent to the auditor and should not discriminate against particular communications providers.	Section 3.6	Analysys Mason
	Where only a selection of packages is included, this should not result in an unfair or biased representation of an operator.	Section 3.6	Analysys Mason
	Services should take into account a consumer's location when presenting information on what services are available	Section 3.6	Analysys Mason

2.4 Audit fees

Charges passed on to price comparison services for the initial accreditation audit and subsequent review audits are determined by Ofcom and set out on the Ofcom website.

¹ This does not apply to any increase to non-subscription prices that fall outside of the relevant core monthly subscription, and which are billed incrementally when such services are used by the customer. For mobile customers such incrementally billed items typically include: charges incurred when they exceed their monthly inclusive allowance, charges for premium rate services, non-geographic calls, directory enquiries, making calls and sending texts internationally and roaming services.

3 Key areas addressed in the audit

This section outlines the key areas of interest that will be explored in the audit. Sections 3.1 to 3.6 discuss how we will assess the methodology proposed by the applicant, and the clear presentation of important information by the price comparison service. Section 3.7 addresses the proposed process and management systems.

We recognise that much of the detail in these sections may not be relevant to every price comparison service. For example, details on what is expected when calculating the cost of fixed telephony calls will not affect a price comparison service that focuses on broadband Internet access and explicitly considers only ‘in-bundle’ charges. However, the aim of this document is to provide a specification for audits of all types of price comparison service which may be accredited by Ofcom under the accreditation scheme for price comparison services.

In order to carry out the audit, Analysys Mason will require appropriate documentation from applicants, outlining their methodological approach, their data handling processes, and their management systems for maintaining their price comparison service and associated consumer access methods and keeping the information presented accurate and up to date. Annex A contains a list of the main issues we expect to see addressed in the applicants’ documentation.

3.1 Overview of factors addressed in the methodology audit

The methodology audit will assess the method proposed by the applicant, using Ofcom’s approval criteria. These criteria can be broadly divided into five categories, namely Access, Charging, Accuracy, Transparency (including the clear presentation of important information) and Comprehensiveness. We will consider all five categories for each type of service considered in the applicant’s price comparison service. Sections 3.2 to 3.6 discuss the criteria in each of these categories and describe how they will be assessed. In addition, we discuss the checks we undertake of the procedural aspects in Section 3.7

Naturally, the level of complexity required to describe each of these issues will vary, depending on the service considered and the particular context of the service. For the purposes of this audit, ‘context’ is the term used to describe the particular market focus of the applicant’s price comparison service. For example, an applicant may wish to provide a service to residential users which will compare prices of calls to the USA. In this case, the context dictates that only those tariff components relating to calls to the USA, and a limited subset of discount schemes, will be important, and it may not be unreasonable to ignore call set-up/minimum call charges in the pricing of calls. However, if these assumptions are made, we would expect this to be matched with a usage profile or specification based on a carefully constructed model of call frequency and duration. In this context, it would also be appropriate to include any one-off charges for registration, if fair comparisons between service providers are to be made. Alternatively, the applicant may just be providing a list of headline charges for calls to the USA: this would be acceptable if it is made clear to the consumer that this is not necessarily the full price of the calls.

The generic approach we outline is intended to cover as many of the factors determining pricing and spend as possible. In carrying out a specific audit, the approach will of course be tailored to the specific context defined by the applicant. Price comparison services which do not attempt to provide all of the features described below will not necessarily be required to make changes, provided that their presentation does not suggest these features are included, either directly or by implication (i.e. implied by the level of accuracy claimed).

3.2 Access

This area will be fully addressed by Ofcom in its qualitative audit. In particular, it will assess compliance with the following criteria:

- The applicant must ensure its services are accessible to disabled users. For online services, this may include ensuring blind and partially sighted users can use a screen-reader, or can enlarge text. For telephone services this may include provision of a Textphone service for deaf users.
- The applicant must ensure that it complies with the Disability Discrimination Act and the Data Protection Act, as well as with any other relevant legislation.
- Only providers of online price comparison services who also offer consumers the ability to receive advice offline will be considered for accreditation.
- The price comparison organisation should have in place clearly explained, fair and timely processes for handling complaints.

3.3 Charging

This area will be fully addressed by Ofcom in its qualitative audit.

Organisations seeking accreditation must provide a free service or impose only a reasonable charge on consumers who access their services.

3.4 Accuracy

This area will be addressed by Analysys Mason in its technical audit.

Analysys Mason will assess the following criteria:

- Data used to calculate price comparisons must be kept up to date
- The price comparison service must calculate accurately
- The organisation must provide, on their result pages, information about any limits on data usage that apply to services identified in comparison searches
- The service must display 'up to' broadband speeds. Please note that section 3.5.4 covers further required explanation of 'up to' speeds.

In terms of the technical audit, the methodology used by the applicant's price comparison service should:

- be internally consistent in its treatment of factors such as usage profiles, tariffs and service pricing models
- be appropriate to the service envisaged (e.g. it may be realistic to ignore call set-up charges within an international telephony price comparison service).
- be implemented correctly.

Analysys Mason will assess the accuracy of an applicant's price comparison service in several areas:

- the description of usage profiles
- the treatment of tariffing information
- the handling of discounts
- the calculation of call pricing and bill comparisons
- the handling of bundled services.

Additionally, it is essential that the data used is kept up to date so that consumers are presented with accurate information on prices and tariffs. The information should reflect the availability of special offers and upfront costs, for example installation and equipment. In particular, it is required that data is updated at least every two weeks, and the price comparison service must indicate when it was last updated. This indication may either be provided on a per-package basis or preferably as a global date at which all data on the site was known to be up to date and correct.

3.4.1 Usage profiles

User profiles are relevant to all price comparison services that provide an estimated bill for a voice service, either for a single call or for a group of calls (and perhaps line rental), or for other services which calculate required bandwidths and/or maximum required download limits for broadband packages. This may also be relevant for some pay-TV services where the number and price of events ordered could, in part, determine the estimated bill.

We will evaluate the basis on which customer usage levels are defined. This is typically achieved using a mixture of the following:

- **Pre-defined calling patterns or call baskets.** We will examine the source(s) of information employed, any simplifying modelling assumptions made, specific quantitative assumptions and the benchmarks used to set them, the segmentation policy employed, the way in which customers are assigned to (or are invited to choose) which segment they belong to, and any statistical information regarding the accuracy of these customer segments. We would expect it to be clear to users that the accuracy of the results depends upon the closeness of match between the predefined profile and their actual profile.

- **User-supplied usage profile.** We will examine the range of information requested from the user, and any additional modelling assumptions made. If significant additional modelling assumptions are necessary, we would expect these to be clearly stated and, wherever possible, benchmarked with real data.

For a fixed or mobile telephony service we will also evaluate the basis on which single calls are priced.

- **Pricing of single calls.** We will examine the range of information requested from the user, and any additional modelling assumptions made. Where the user is not required to input specific information regarding the duration of the call, we would nevertheless expect call set-up charges, minimum call charges and variable billing increments to be taken into account.

In each case we will evaluate the supporting information given to the user about how this data is used, and the additional assumptions made. This data should be clearly displayed and understandable to consumers. If the assumptions made have the ability to significantly affect the results of the price comparison, then this should also be clearly indicated.

We will explore how the applicant treats specific issues for different services. For fixed and/or mobile telephony, these may include:

- the level of detail used to describe calling patterns for the main call types (local and national calls) that typically make up the bulk of a user's bill, and extrapolation of Internet usage characteristics to bandwidth requirements
- the level of detail used to describe calling and Internet usage patterns for, for example, international and premium-rate services; tariffs for these services are typically expressed at a high level of granularity and appropriate decisions need to be made about the associated usage profiles
- the variation in the definition of peak, off-peak and weekend categories by different operators and the additional usage-profile information this requires. We expect that where differences in these definitions are not accounted for within the methodology, it should be clearly stated whenever these occur
- the variation of call duration with destination and time of day: for price comparison services that provide an aggregate customer bill, we would expect to see a call-length distribution modelled in order to account for the impact of call set-up charges and different billing increments
- the use of flat-rate charging
- the usage level associated with on-net calls (both mobile and fixed telephony)
- the distinction between on-net and off-net calls, for example across cable networks and the various mobile networks, including any assumptions regarding the relative proportion of calls that remain on-net
- the use of calls qualifying for specific discounts such as Friends and Family

- for mobile telephony, the use of data services and SMS
- for mobile telephony, the usage of international roaming services (with reference to call duration, time of day, number of calls per month), and any assumptions regarding the countries that are considered to be roaming destinations, and the choice of roaming networks within those countries.

For broadband Internet access (fixed and mobile) and other services, we will explore how the applicant treats the following issues:

- the use of usage constraints on flat-rate packages, such as those for broadband Internet access, which may impose limits on the number of megabytes downloaded per month
- the treatment of differentiated viewing of different pay-per-view events on digital TV
- the treatment of bundled services offered by some operators, compared with single services offered by other operators.

In all cases, we expect the level of detail and accuracy with which these issues are treated to be consistent with the accuracy that it is implied is being offered to the user. We do not necessarily expect all services to be included in the comparison, but where these are not included we do expect this to be clear. Examples of services which may not be included are premium-rate services, directory enquiry services, calls to non-geographic numbers, SMS, international roaming, charges to extend a download limit, charges for broadband VAS such as anti-virus services, interactive TV services and pay-per-view TV.

3.4.2 Tariffs

We will investigate the treatment of tariff information, including:

- the level of detail used to define the tariff structures needed to capture, for example, the variation in international and non-geographic telephony destinations and pay-per-view events
- the level of detail used to define time-of-day variations in tariffs
- the degree of consistency in structural specification that exists between the tariff model and the usage profile, and the consistency of deployment of both these sets of input data in the price-comparison model's calculation of user spend: we will investigate whether this consistency applies to the treatment of each of the specific issues described above for usage profiles
- the level of tariff detail captured for use in pricing calls such as call set-up charges and billing units (see Figure 3.1), and the justification for any simplifications used
- the incorporation of fixed-fee call destinations
- variation in the definition of peak, off-peak and weekend categories by different telephony operators
- variation in usage caps and subsequent charges for additional usage employed by broadband ISPs.

Call set-up charge
Minimum call charge
Minimum call duration
Various call metering units (time units, per call)
Usage charge per billing unit
Maximum call charge (call cap)

Figure 3.1: Components of telephony call pricing
[Source: Analysys Mason, 2013]

3.4.3 Discounts

We will look closely at the treatment of discounts. Particularly in the case of telephony, the design of discount schemes has become increasingly complex. Our assessment will include both automatic discount schemes (such as discounts for on-net calls) and optional discount schemes (such as discounts on international calls in return for payment of a monthly fee). Figure 3.2 below contains the main categories of discounts that have been offered by relevant service operators.

Figure 3.2: Main types of discount scheme [Source: Analysys Mason, 2013]

Type of discount scheme	Example of type of discount scheme
Volume discounts	<ul style="list-style-type: none"> Triggered by a volume of calls (minutes) or a bill threshold (e.g. for particular call types, over a given period [e.g. daily, monthly])
Discounts on calls to specified destinations	<ul style="list-style-type: none"> On a single number (for instance, BT's Best Friend) On a (set or unset) group of numbers (a calling circle such as BT's Friends and Family) On all numbers to a single international destination On a group of destinations (for example, all calls to mobiles or all international calls [such as Virgin Media's Talk International])
Discounts on calls made at specified times of day	<ul style="list-style-type: none"> On calls made during a predefined time of day, for example all off-peak calls, or a subset of a predefined time of day, for example between 7.00am and 8.00am
Unmetered usage	<ul style="list-style-type: none"> On a single number (for example, a chosen dial-up Internet access number) On a group of numbers (such as free on-net calls with Talk Talk) On a group of destinations (such as on all local and national UK calls)
Bundled services	<ul style="list-style-type: none"> Single payment for calls up to a predefined limit such as a number of free minutes of calls each month to certain destinations, or a number of free SMS, or a combination of the two
Price-capped calls	<ul style="list-style-type: none"> Possibly in conjunction with calls made within specified times of day, or to specified destinations
Duration-capped calls	<ul style="list-style-type: none"> Additional charges incurred on calls exceeding pre-defined duration limits
Sign-up promotions	<ul style="list-style-type: none"> For broadband, TV or telephony, offering reduced line rental or monthly fees for a set period of time Cashback type offers provided either automatically on signing up to a service or reliant on customer action such as posting bills to the organisation running the promotion at the correct time

We will also explore the following factors within the applicants' methodology:

- the inclusion (or exclusion) of discounts across all tariff packages and for all operators on a consistent basis which is clearly explained to the user
- the appropriate application of discounts to only those tariff packages which are eligible
- the correct ordering of discount calculations in estimating user spend, taking proper account of whether discounts are additive or multiplicative
- the assumptions made in estimating the proportion of calls eligible for a given discount (for example, the proportion of on-net calls, the proportion of calls made to a calling circle such as BT's Friends and Family)
- whether or not one-off incentives, such as reduced price calls to Europe for the first three months of subscription, are routinely included in the price comparison; and if so, how this is explained to the user.

In all cases, as with the usage profiles, we expect the level of detail and accuracy with which these issues are treated to be consistent with the accuracy implied to the user by the price comparison service. We do not necessarily expect a sophisticated methodology, but we do expect the limitations of the methodology to be evident to the user.

3.4.4 Call pricing and bill comparisons

We will consider the full range of factors affecting the calculation of spend on an individual call (in the case of telephony), overall bill estimation, and the intricacies of comparing bills across different packages and operators/service providers. Conceivably, bills for other services can be built up from fixed charges and usage-based charges: for example, flat-rate fixed or mobile broadband offers with extra charges beyond a certain usage cap, or pay-TV offerings with incremental charges for pay-per-view. Across the different services we will look for:

- consistency between the level of detail in the specification of usage profiles, tariffs and discounts
- equivalence of the services compared or, where this is not possible, a clear statement to the user of the differences between services
- the proper treatment of call allowances, Internet usage allowances, inclusive 'free minutes' and the potential for roll-over into the next billing period
- where multiple operators are involved (e.g. BT plus an indirect-access operator for fixed telephony services), a clear statement of the services provided by each operator, including any assumptions regarding 'leaked' calls onto the access provider's network

- a reasonable approach to the incorporation of non-usage-related charges which form part of the comparison (see Figure 3.3 below), including:
 - the inclusion of monthly rental and other recurring charges
 - the inclusion of line rental for fixed-line-based services in a consistent manner across packages and providers (line rental need not necessarily be included in ‘headline’ pricing metrics but must be prominently displayed and consistently calculated)
 - the inclusion of one-off charges related to connection or installation of equipment, particularly where service providers routinely trade off connection/installation charges with monthly rental charges
 - the treatment of user equipment costs (such as mobile handsets and cable modems), particularly where, if not properly accounted for, these can introduce bias into bill comparisons (e.g. between prepaid and contract-based mobile services)
 - a reasonable period of time over which one-off and equipment costs are amortised in the estimation of bills, in the case that they are included within the overall cost of service.

Where the applicant’s model performs bill comparisons across multiple tariff/discount combinations, or across multiple service providers, we will assess the method by which such comparison is made (for example, cheapest operator only, comparison to user’s existing provider/package), in order to ensure that results are presented fairly.

Connection charge
One-off charge for end-user equipment
Line rental charge
Included call time in line rental (in minutes or value of calls, for example BT’s Call Allowance)
Recurring charge for end-user equipment

Figure 3.3: Non-usage-related issues in bill estimation [Source: Analysys Mason, 2013]

We will also check the treatment of various financial issues such as:

- the incorporation of VAT, which is likely to be appropriate for residential users, though not for businesses
- the inclusion of any financial incentives, for example, to users electing to pay by direct debit.

Once again, we expect the level of detail and accuracy with which these issues are treated to be consistent with the accuracy implied to the user by the price comparison service. We do not necessarily expect a sophisticated methodology, but we do expect the limitations of the methodology to be evident to the user.

Finally, we note that some price comparison services now offer bill comparisons which allow users to enter usage profiles, by uploading recent bills from their current provider. In such situations, Analysys Mason will usually, for practical reasons, test the calculation engine through manually entered user profiles rather than by uploading bills.

Price-related metrics which should be considered

Even if the price comparison service does not use a sophisticated approach to calculate individual call prices and build up an overall bill estimation, there are certain calculated metrics which should be included, so as to reflect the total costs of the package to the user.

In particular, a price comparison service must include a measure of the total cost of a package, taking into account both one-off and recurring costs. Commonly this is done using the metric of ‘first-year costs’. First-year costs should include:

- Monthly recurring charges which may include or exclude (as long as consumers are informed of this) out-of-bundle charges such as calls beyond any included allowance
- One-off set-up costs, including all installation, equipment (e.g. handsets, satellite dishes, Wifi routers etc...), delivery and connection charges
- Discounts to either one-off or recurring charges, with account taken of the period for which the discount is offered.

Line rental charges should be included in the monthly recurring charges, although it may be possible for price comparison services to provide first-year costs with and without line rental, since it is often possible to purchase this from a separate provider.

Alternatives to calculating a first-year cost include a total contract cost (calculated on the same basis but over the total life of the contract) or a ‘true monthly cost’ (either a first-year cost or total contract cost divided by the relevant number of months).

Whichever of these metrics is used, at least one should be consistently displayed in the main results table produced by the price comparison service for all types of package / bundle offered.

3.4.5 Service bundling

When bundles of services are considered, the price comparison task becomes inherently more complex. For example, a simplistic comparison of the costs of fixed telephony across a range of service providers or packages is unlikely to be either fair or informative if some of the inputs are for stand-alone telephony offers while others are derived from packages that bundle telephony with pay TV. In this relatively straightforward case of bundled fixed telephony with pay TV, there are (at least) three sets of price comparisons which might be presented to users depending on their particular situation:

- **User wishes to buy both fixed telephony and TV services** (but does not already purchase pay TV). In this case, the price comparison service should present both options built upon all possible combinations of unbundled telephony services and TV services and options based on bundled packages from pay-TV operators. It may be the case that only services from providers offering the bundle of fixed telephony and pay-TV services are shown, but in such cases it should be clearly stated that unbundled offers from multiple providers are not included.

- **User already subscribes to pay TV** but wishes to select the best telephony service. Here the price comparison service should include all available telephony packages: both the incremental cost of those bundled with the existing pay-TV service, and the stand-alone cost of those that are non-bundled.
- **User has no interest in pay TV** but wishes to select the best telephony service. In this case, if the ‘bundled’ telephony packages offered by pay-TV operators are included, the total cost of the bundle should be presented.

Applicants should make it clear that some price information derives from bundled packages and may not be available independently if these are displayed as options for individual services.

Conversely, where a price comparison service does not consider bundled services, it should be made clear that bundling (multi-play) offers may provide cheaper options than buying each service on a stand-alone basis.

If consumers are interested in the price of a bundle of services then it must be made clear if there are key differences in the quality of service provided by different options. For example, if a triple-play bundle of telephony, broadband Internet and pay TV is examined, it should be highlighted if one provider uses VoIP to provide the telephony service whilst others do not. This requirement also applies to individual service comparisons, but the impact is larger when considering multiple services sold together in a bundle.

In carrying out the audit, Analysys Mason will evaluate the applicant’s approach to pricing bundled services based on the guidelines set out above.

3.5 Transparency

Assessment in this area will be carried out both as part of the qualitative audit by Ofcom and the technical audit by Analysys Mason. Ofcom will check that:

- the applicant is transparent about any commercial agreements or links they have in place with one or more communications providers
- the applicant makes it clear to consumers how it makes money or funds its activities (e.g. whether it receives any commissions from communications providers).

In our assessment of the accuracy of the price comparison service, we expect that any simplifying assumptions made should not consistently result in favourable price comparisons for any one operator, which would lead to a biased set of results. Providing that the calculations are performed accurately, then we will be concerned mainly with issues relating to the presentation of the results:

- the approach taken and the assumptions made should be clearly stated and presented in a way, and in an area, which is easily visible to consumers
- the limitations of the methodology used should be made clear to the user

- the service must enable consumers to sort the results of any price calculation by different relevant metrics and the default sort order must use an appropriate price-based metric (so that, for example, certain providers do not always appear at the top of the list).

We consider each of these issues in turn in more detail in the sub-sections below.

Finally we consider the issues related to clear presentation of important information.

3.5.1 Approach taken and assumptions made

There are several important points which should be clearly explained on the applicant's price comparison service website, which are set out below. In general, both these points and those described in Section 3.5.2 on the limitations of the methodology should be presented in a clear way and in an easily accessible location. This information should be accessible from a direct link (or pop-up window / separate tab) on the main results page.

Some major elements of the approach taken which we would expect to see clearly explained, where relevant to the service offered, include (but are not necessarily limited to) the following:

- the calculation of first-year costs, total contract costs, true monthly costs and any other metric by which the results table can be sorted
- the approach to determining which packages and providers are included and excluded from the price comparison service
- the approach taken to calculate fixed line rental, including whether this is included or excluded in the key pricing metrics by which results can be sorted, and whether any assumptions on which provider line rental must be purchased from have been made.

There are also several assumptions which we would expect to see clearly explained. These include, but may not be limited to, the following:

- any key methodological assumptions made, including, for example, the treatment of legacy packages which are no longer offered by providers
- whether it is assumed that users will adopt a particular method of payment (e.g. direct debit), and a note as to whether this may affect the package prices which are displayed.

3.5.2 Limitations of the methodology

There are various methodological limitations of the price comparison service which we would expect to see clearly explained, where applicable. These mainly involve cases where likely out-of-bundle charges (e.g. for calls) are not calculated, but there may also be others depending on the exact nature of the price comparison service offered by the applicant.

If sites do not consider variable costs such as those for out-of-bundle calls then this should be clearly stated and some information should be made available to enable users to calculate the likely magnitude of any charges (for example, call prices to common destinations). A consistent level of detail should be provided for each provider and package covered by the price comparison service.

In addition, we would expect the number of minutes included in-bundle for each package to be prominently displayed. This should include any specific allowances for calls to individual destinations (for example, if a separate allowance for calls to landlines is included in a mobile phone contract).

3.5.3 Sort order

The price comparison service should enable users to sort the results in different ways. There is a degree of flexibility over the exact sorting metrics offered, but as a minimum users should be able to sort by the provider and a total-price metric such as first-year costs, total contract costs or true monthly costs, as described above. Ideally, it should be possible to sort by other relevant metrics, including, but not necessarily limited to, the following (where relevant):

- monthly cost (possibly inside or outside of any initial discounted period)
- inclusive monthly minutes / texts / data allowance
- contract length
- download speed
- upfront costs (e.g. for mobile handsets).

Furthermore, the default sorting metric must be price related. We would expect that this should always be one of the total-price metrics described above, such as first-year costs, although it is possible that other metrics such as the monthly cost may be used in exceptional cases.

A secondary sorting metric should also be carefully chosen, to determine the order in which results are shown if two packages score equally on the default sorting metric. We would expect this to either be another price-related metric or to be based on a measure of what is provided by the package (e.g. included monthly minutes).

In all cases we would expect the results to be sorted in the order which is likely to be most attractive to the user by default. For example, from lowest cost to highest cost, or most included minutes to least included minutes (rather than the other way around).

The criteria used for sorting results should be clearly explained to users in an easily accessible location, either on the main results page or linked directly from it.

Finally, we would expect a reasonable number of results to be shown by default on the results page. This number should be at least ten, and ideally somewhat higher.

3.5.4 Clear presentation of important information

Review of this area will be carried out both as part of the qualitative audit by Ofcom and the technical audit by Analysys Mason. The responsible party is indicated after each factor listed below.

We have already mentioned the importance of avoiding bias in presentation by clearly indicating the assumptions made and the limitations of the methodology used, as well as allowing users to sort results. In addition there are other factors which price comparison services may need to make clear², specifically:

- The service must alert consumers that their provider may increase the cost of their monthly deal and that they should be allowed to exit their contract without penalty if this happens. (Ofcom)
- Any organisation must provide a link to Ofcom's work on broadband speeds and provide tools, or links to tools, for consumers to test the speed of their line (Ofcom)
- Services must explain that traffic management policies may apply and provide links to communications providers' policies where available (Ofcom)
- The service must provide links to Ofcom's comparative information on customer service and complaints handling. (Ofcom)
- The service must explain that actual broadband speeds experienced may vary from the 'up to' speed provided by a package. For example if distance from the exchange is not taken into account in a calculation, then users should be informed that the actual speed of a DSL connection will depend on this, whereas for cable this may not be the case. (Analysys Mason)
- In the case of digital TV, it should be made clear to users that they might need a special type of Freeview box if they want to get services such as Top Up TV. (Analysys Mason)
- If the cost of switching for the consumer is different as a result of using the switching service provided by the price comparison site, then this should be fully transparent to the consumer. (Analysys Mason)
- The length of contract which the user must sign if they switch should also be clearly displayed. (Analysys Mason)
- Listings of VoIP services should inform the user that the service may differ from a standard PSTN service in terms of quality of voice. The user should also be informed whether the service uses a standard phone, a soft phone, or a phone which must be plugged into a PC. (Analysys Mason)
- For VoIP services, any requirement to maintain telephony services with a certain company, or to maintain DSL services with a certain company, should also be highlighted to the user. (Analysys Mason)

² Some of these criteria may only apply to price comparison services dealing with (fixed or mobile) broadband services.

The exact approach to providing this information may vary by price comparison service and between the above points, but should nonetheless always be sufficiently prominent. For example, a disclaimer at the top of the results page may be appropriate in some cases whilst in others the information may be provided on background pages describing the general assumptions and limitations of the price comparison service.

3.6 Comprehensiveness

This area will be addressed by Analysys Mason in its technical audit.

In order to give consumers accurate advice on whether they would be better off switching provider, price comparison information must be full and comprehensive.

Data should include a reasonably comprehensive number of providers to reflect the level of choice available in the relevant market, and should include all key players. By reasonably comprehensive we mean that we would generally expect the chosen providers to hold a collective market share of over 90% of subscribers within the chosen market.³

The price comparison service should also include a reasonably comprehensive number of tariffs from each of the included providers⁴. Furthermore, it is important that it is clear exactly which services are included in the comparison and which are not (this may be particularly important if, for example, VoIP services offer a cheaper alternative to PSTN services).

We will establish the degree to which an applicant price comparison service is comprehensive in its choice of tariffs, i.e. whether all packages and discounts offered by an operator/service provider are included in the price comparison, or just a selection. Where only a selection of packages is included, we will also address whether this results in an unfair or biased representation of an operator. For example, the omission of a range of packages representing good value for money will make the operator which offers these packages appear expensive when compared to its rivals. The set of packages included should be as consistent as possible between the included providers.

It may not always be practical for price comparison services to list all providers and all options in their price comparisons. For example, we note that commercial agreements may not always be possible with all providers. However, the process used by price comparison service providers to select which communications providers to include should be transparent to the auditor and should not discriminate against particular communications providers.

³ Certainly this should be the case for price comparison services dealing with mainstream services such as fixed or mobile (telephony or broadband) or pay-TV. For more niche services such as carrier select international calls the appropriate market share threshold would need to be considered on a case by case basis.

⁴ This would normally include all tariffs from each included provider, but there may be exceptions with legitimate reasons for not doing so.

It is important that an appropriate number and type are included, including key players. In particular, any organisation which seeks to promote a particular communications provider by limiting the number of services included in the calculation or by excluding key players would not be able to qualify for accreditation.

As regards the number of providers compared, the definition of ‘comprehensive’ will vary depending on the services being compared and the context being considered. Criteria for comprehensiveness may include:

- whether the service includes communications providers of a certain size
- the percentage of the market covered by the service
- whether the service includes the main provider in all regions of the UK.

For example, in the case of fixed telephony, relatively few providers would be required in order to cover most of the market: hence we would expect a high proportion of the market (90% or above) to be covered by a fixed telephony price comparison service. Similarly for mobile telephony there are even fewer network operators to cover, although each will have a larger number of tariff options on average. In the case of international calls a very large number of carrier select providers have a very small market share and it would be much more difficult for a price comparison service to cover the same proportion of the market as for fixed and mobile telephony.

In addition there may be certain operators that we feel must be included in the price comparison. This is obvious in the case of players with large market shares. However, there are also certain players who are small in terms of market share but very important in some areas, such as Kingston Communications which serves the Hull area.

There is also an important issue regarding the inclusion of ‘legacy’ tariffs which still have users. For example, in the world of mobile telephony, a user may be on a tariff which is no longer offered, but for their usage profile it is more advantageous to them than switching to a new tariff (even if the new tariff is the cheapest currently offered for that usage profile). We will establish the policy of the service towards these tariffs, and determine whether this is both reasonable and clear to users.

3.6.1 Geographical constraints

Price comparison services should take into account a consumer’s location when presenting information on what services are available.

Many services (for example, cable telephony and broadband access from individual providers) are only available within certain geographical regions. In particular, broadband Internet access products (especially those using local loop unbundling or fibre) and services from Virgin Media delivered by cable have limited availability, and a price comparison service listing these options in areas where they are not available could be misleading. On the other hand, the availability of some services such as mobile telephony are not so location-dependent.

It will be important for a price comparison service to distinguish between services which are and are not available to the user. We will examine the approach adopted to determine the services/operators available in the user's own specific geographical location. Two possible approaches are:

- a high-granularity model which compares the user's own postcode with the range of postcode areas covered by the operator/service provider
- a more general approach based on city/town location (we would expect to see a suitable explanation of the approximate nature of such an approach and the implications for the user).

For fixed-line telephony and broadband Internet access services, the area in and around Hull is unique. This is because this area is not served by BT, but by the incumbent operator, KCOM Group. As a result, the services available in this area are typically quite different from those in other parts of the UK. This should be taken into account by price comparison services. If a high-granularity model is used (as described above), then when a Hull area postcode is entered by a user, the price comparison service should either:

- provide information to the user explaining the unique situation in the Hull area and that this area is not covered by the price comparison service; or
- include the relevant packages from KCOM Group and take care not to include packages from other providers which are not available at that location.

Whichever approach is followed should be applied consistently by the price comparison service across all relevant postcode areas.

The aim of the audit is to evaluate whether the applicant has adopted a reasonable and consistent approach to dealing with geographical constraints: we will check location data provided by the price comparison service, but will not check the integrity of any underlying operator/service provider location data such as postcode lists or lists of towns covered.

Some services, such as pay TV from Sky, although available in almost all locations in the UK, require the installation of large customer premises equipment (in this case a satellite dish), which may not be possible for all users. Price comparison services may need to highlight factors such as this to users even when geographical considerations are not an issue.

3.7 Factors addressed in the audit of process and management systems

This area will be addressed by Analysys Mason in its technical audit.

This part of the audit is designed to check that:

- any transfer of data between different formats (paper, various modelling environments, website inputs, tele-services, etc.) is error-free
- the applicant has well-established management processes in place to acquire and incorporate updated tariff information on a regular basis.

The process and management systems audit will examine the flow of information through the applicant's calculation engine through to the final price comparison service, including:

- the capture of inputs in terms of usage profiles, tariffs and discount information
- the calculation of call/service prices and bill estimation/comparison
- the creation of output information.

In our experience, it is not unusual for a calculation engine to be built and operated in one or more distinct calculation environments, and then the resulting output transferred to a database (or similar) from which the price comparison service draws information. In such cases, there is always the potential for error as information and data is transferred between different environments and perhaps also manipulated into a more manageable format. Our audit will explore:

- The processes that have been put in place to ensure the correct translation of tariff information supplied by operators or service providers, from its original format into a format and medium compatible with the applicant's price comparison engine. These processes often involve some degree of human intervention, ranging from simple copy-typing of data into a spreadsheet, to re-casting of source tariff data into a common tariff structure defined by the applicant. Where human intervention is involved, we would expect there to be a reasonable level of cross-checking.
- The means by which usage profiles are created and uploaded into the price comparison engine.
- Any use of multiple calculation environments within the price comparison engine, and the mechanisms for transferring data between them.
- The processes involved in the transfer and re-formatting of price comparison engine outputs to the system supporting the applicant's price comparison service.
- The processes involved in testing changes to the price comparison methodology or interface.

The audit will also verify that suitable management systems are in place to manage the flow of information between the applicant's own organisation, the suppliers of tariff/discount information, and the end user. In particular, we will investigate:

- The nature of the relationship between the applicant and the providers of tariff information, to determine whether there is a reliable and timely feed of tariff/discount information to the applicant.
- The mechanisms in place to review and, if necessary, update the usage profiles used in the model in response to, for example, systematic shifts in calling patterns or the introduction of new pricing structures such as flat rate call charges for Internet dial-up packages.
- The scanning for, and logging of, major changes needed to the functionality of the price comparison model as a result of, for example, new tariff or discount structures being introduced.

- The systems in place for recording changes to usage profiles and tariffs as they occur.
- The systems in place for version control as model updates are implemented.
- The policies and review processes which govern the additional information offered by the service.
- The systems for recording and handling customer queries and complaints.
- The nature of any information fed back to providers of tariff information.
- The nature of any differences in process or treatment of tariff data from operators funding the price comparison service, compared to the treatment of other operators.

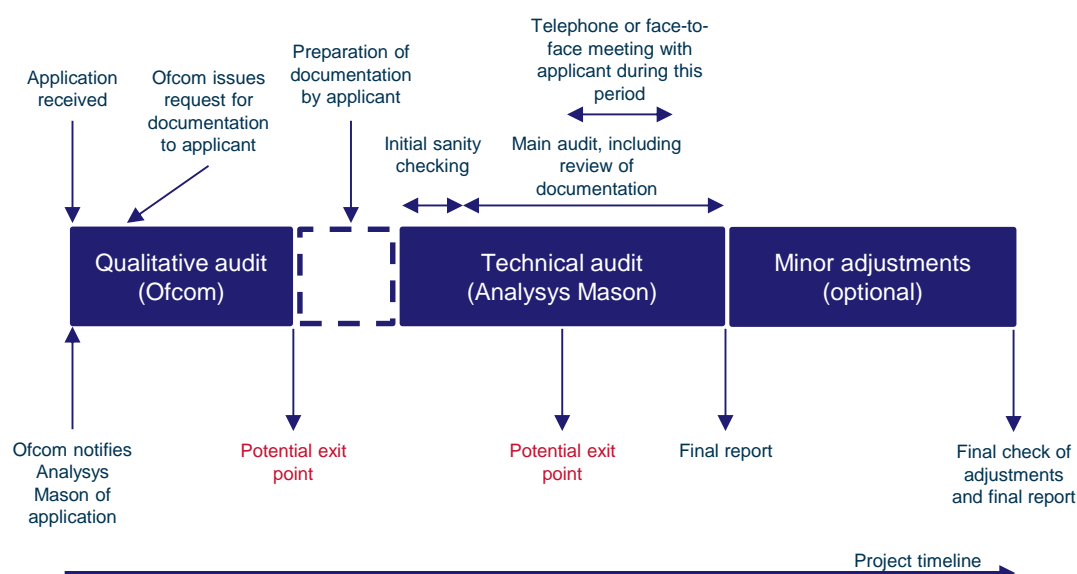
4 Timescales

This section describes our expectations regarding the timescales of the audit process.

4.1 Schedule for the audit

The schedule for the initial accreditation audit is illustrated in Figure 4.1 (not necessarily to scale).

Figure 4.1: Major action and decision points during the audit process [Source: Analysys Mason, 2013]



The audit process will be triggered initially by the receipt by Ofcom of an application for accreditation. Ofcom will notify Analysys Mason of the application and, depending on the applicant's views, may issue the Request for Documentation (contained in Annex A) to the applicant at this point.

This indicative schedule shows a brief gap between the completion of the first phase (the qualitative audit) and the start of the second phase (technical audit): this is in recognition of the fact that applicants may not wish to incur the expense of preparing the documentation required for Phase 2 until they have successfully completed Phase 1. In this scenario Ofcom will issue the Request for Documentation upon successful completion of Phase 1, assuming the audit is to continue.

Ofcom will notify Analysys Mason of the expected date of receipt of the applicant's documentation and agree the likely start date of Phase 2.

We envisage a period of approximately two weeks for Phase 1 and three weeks for Phase 2, though there is some flexibility in the timescales involved. The timeframe for preparation of the documentation (either concurrent with Phase 1 or between Phases 1 and 2) will be agreed by Ofcom and the applicant,

and subsequently communicated to Analysys Mason by Ofcom, although Analysys Mason will require a minimum of three weeks' notice before commencing work. The timescales involved in Phase 3 (if required) will depend on the nature of the changes that need to be made. Although the time required will be negotiated between Ofcom and the applicant, Analysys Mason will be pleased to advise Ofcom as to the level of effort involved to implement the required changes.

4.2 Audit exit points

We have indicated two potential exit points in Figure 4.1 where we will consider halting the audit process: these occur at the end of the qualitative audit carried out by Ofcom, and following the review of the documentation and sanity checking.

If during Phase 1, Ofcom decides that the applicant's price comparison service does not meet the criteria tested in the qualitative stage, or the applicant decides not to pursue accreditation, the process will be terminated and Analysys Mason will not begin work on the technical audit.

If the application merits further consideration, we will commence the first stage of the technical audit. If our initial sanity checks and review of the methodology reveal serious problems with the applicant's approach which suggests that accreditation is not merited, we will notify Ofcom of the situation and discuss whether we should continue with the audit. The audit may terminate at this point.

Our review may also show that the applicant's documentation is insufficiently detailed to provide us with a clear understanding of the approach adopted. In such a case, we will notify Ofcom and the applicant that we are unable to evaluate the methodology effectively and that more detailed documentation must be provided before the applicant can be considered for accreditation. Once this has been provided, Ofcom will need to provide Analysys Mason with three weeks' notice once again to recommence work on the technical audit.

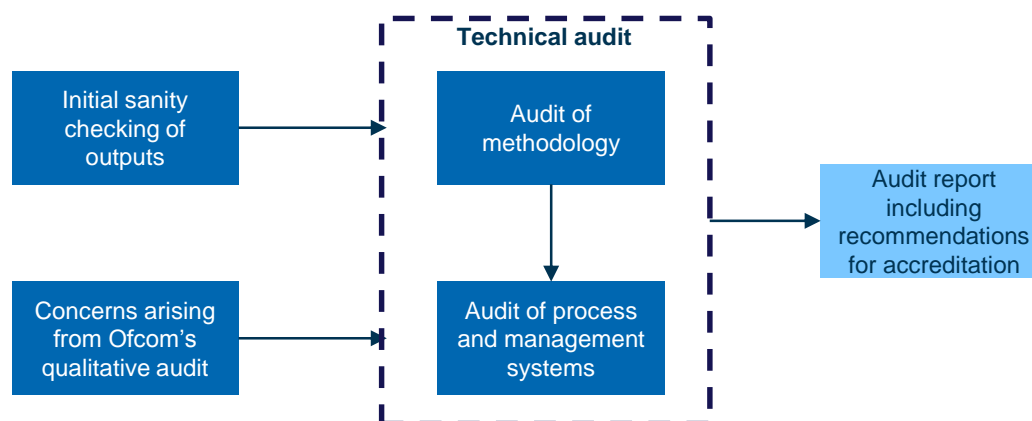
Analysys Mason will provide a brief interim phone update to Ofcom partway through the main technical audit, and at the end of the audit we will meet Ofcom to discuss the final audit report.

5 Audit procedures

This section sets out the processes involved in carrying out the technical audit of an applicant's price comparison service. The audit will comprise three elements, as shown in Figure 5.1 below:

- An initial sanity check of the outputs generated by the applicant's price comparison service
- An audit of the model methodology underlying the service
- An audit of the data-handling processes involved in transforming customer usage profiles and operator/service provider tariff information into a format suitable for input into the price comparison model. We will also look at the equivalent process by which output results are transferred into the database employed by the service and the management systems in place to maintain the accuracy and timeliness of the information presented.

Figure 5.1: Overview of the audit process [Source: Analysys Mason, 2013]



The following sections outline our approach to each of these three stages.

5.1 Initial sanity check of outputs

Although our approach to auditing complex price comparison services is based on the firm conviction that it is more effective to examine the model methodology and model inputs rather than carrying out a statistical testing of model outputs, we will nevertheless carry out a simple sanity check of the applicant's model outputs (as reported by the service). This check will commence once Ofcom notifies Analysys Mason that the candidate price comparison service has passed the qualitative audit and that the applicant's model documentation has been received.

The sanity check will serve two important purposes. Firstly, it will permit Analysys Mason to become familiar with the service, and the services and information it offers. We will also obtain a preliminary view of the scope of the price comparison, the transparency of key assumptions, and the reliability of results. These will be useful in setting our expectations prior to examining in greater depth the precise details of the model methodology. Secondly, the initial review will identify inconsistencies or

anomalies in the model's output, which will give a clear indication of potential structural problems with the model, and lend focus to our efforts during later stages of the audit.

At this stage we will carry out a number of simple tests such as the following:

- Cross-check the outputs against established external benchmarks to ensure that they lie within the expected range of 'reasonable' levels. For example, we will compare outputs with those from industry-standard sources such as company tariff sheets.
- Internally cross-check the outputs to identify any apparent outliers – for example, individual bill estimations that are, for a given usage profile, significantly higher (or lower) than similar packages from the same or other operators.
- Test using predefined usage profiles. For price comparison services which invite the user to enter their own usage profile (for example, characteristic telephony or broadband Internet usage), we will use a set of very simple profiles which can be easily estimated offline and can be used to test various different dimensions of the applicant's price comparison model. These tests may include, for example, the price of a 30-minute call to a wide variety of international destinations to test the accuracy and level of detail involved in modelling international calls; the bill for alternative operator and cable telephony users with only free on-net calls; zero-usage calling profiles to test the correct treatment of monthly rental charges; off-peak local/national-only call basket to test fixed-rate packages; spot checks of input data (particularly tariff information); the bandwidth requirements for certain Internet applications – used by some price comparison services to determine the maximum user bandwidth required. Although not statistically significant, these spot checks will raise confidence in the quality of the input data used in the applicant's model.
- Check geographical information. Under this accreditation scheme Ofcom expects that price comparison services take into account the consumer's location when presenting information on what services are available. For services which invite the user to supply information regarding their location, we will enter a small number of address details, representing areas served by different subsets of operators. In selecting appropriate addresses, we will make use of information available direct from operators regarding their coverage and, where relevant, data collected by Ofcom. For example, broadband retail providers generally provide a postcode availability checker on their websites. Again, we note that although these tests are not statistically significant, they will raise confidence in the quality of the input data used in the applicant's model.
- In addition we may conduct a specific sanity check of any telephone-based price comparison service offered by the applicant. This will consist of a small number of calls to the service with the aim of cross checking the advice received over the phone with the outputs of the price comparison service in other forms when using the same search criteria.

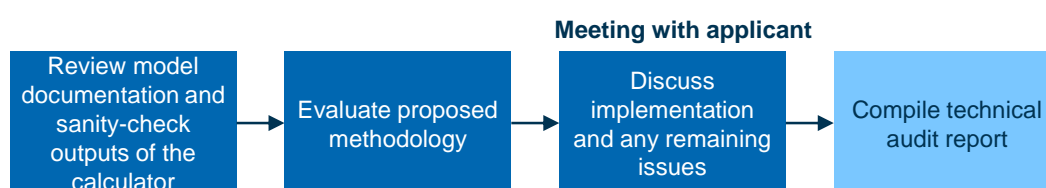
We will provide a summary record of the actual checks carried out in the technical audit report to Ofcom (see Annex B), including details of user profiles and addresses used in the tests. The

specific checks we use will necessarily depend on the precise nature of the applicant's price comparison model: for example, for the testing with predefined usage profiles, the user inputs required by each applicant's model are likely to differ. We will, however, seek to provide consistency between audits by conducting equivalent tests on models with a similar scope.

5.2 Audit of the methodology

Analysys Mason will review the applicant's documentation describing the methodological approach used, including (as a minimum) the treatment of tariffs, bundling of different services, definition of customer profiles and price comparison model. The various stages of the methodology audit are illustrated in Figure 5.2 and described below.

Figure 5.2: Procedure for methodology audit [Source: Analysys Mason, 2013]



We will first review the documentation from the applicant to assess whether there is sufficient information available to continue with the audit and carry out the initial sanity checks described above. We will note any concerns we may have regarding the scope or objectives of the applicant's service.

In the second stage, if satisfied with the documentation, we will evaluate the precise details of the pricing methodology employed, including the modelling simplifications used and any assumptions made (and whether or not these are justified).

We will compare the applicant's model methodology with Analysys Mason's expectations, in this context, of what a fully comprehensive and rigorous methodology involves. This gap analysis will allow us to pose probing questions about what is included in the applicant's model and, equally importantly, what has been omitted. It will also provide the basis for: forming expectations regarding the implementation of the model; identifying the model assumptions likely to be required (whose reasonableness we will also assess); and highlighting a number of concerns that we will need to explore further with the applicant.

In the final stage, we will hold a telephone or face-to-face meeting with the applicant to discuss directly the various issues and concerns that have arisen during our audit. This will be an important part of the audit process, allowing us to talk with the management team, to review the implementation of the applicant's comparison model, and to assess the systems and processes supporting the operation and maintenance of the service, including the updating of tariff information and inclusion of new operators and service providers. We will also take the opportunity to explore issues of concern arising from our sanity checks and review of model documentation.

The successful completion of this stage of the audit process will depend on the co-operation of the management and staff of the applicant organisation. It is difficult to identify in advance which individuals we will need to talk to, as this will depend on the specifics of the agenda, as well as the organisational structure of the organisation. However, we envisage that the meeting will typically involve those responsible for:

- ongoing development of the service (scope, scale, functionality)
- original specification and design of the price comparison model
- implementation and ongoing maintenance of the model
- liaison with operators and service providers to acquire tariff, discount and other data
- quality management
- data input and transfer
- implementation of customer interface
- customer service, including offline customer access services.

For some price comparison services we recognise that these collective roles may be shared among only one or two people. Analysys Mason will generally liaise directly with the applicant to arrange a date for this meeting.

5.3 Audit of processes and management systems

The procedures involved in the process audit will be similar to those adopted in the methodology audit, except that there is no initial sanity-checking stage. We assume that the relevant documentation has already been requested and received. Although the request for documentation will ask for information on the data-handling processes employed, we anticipate that the meeting with the applicant will provide more insight than the documentation.

Our procedure for auditing the applicant's management systems will also be broadly similar in approach to that described above. Although we do not require applicants to have formally accredited quality management systems such as ISO 9001 in place, during the audit we will be looking for evidence of similar practices and system checks. These include:

- standard templates for collecting tariff and other data
- a clearly documented process for collecting and maintaining data
- a structured database or filing system for data storage
- review procedures to ensure accuracy and reliability of information
- procedures for logging and responding to complaints.

We recognise that the amount of supporting documentation that is appropriate may depend on the size of the applicant's organisation. As in the process part of the audit, we expect that our greatest insight into the management systems will come from our meeting with the applicant.

At the end of the audit process, we will submit a report to Ofcom summarising our findings. The template for this technical audit report can be found in Annex B.

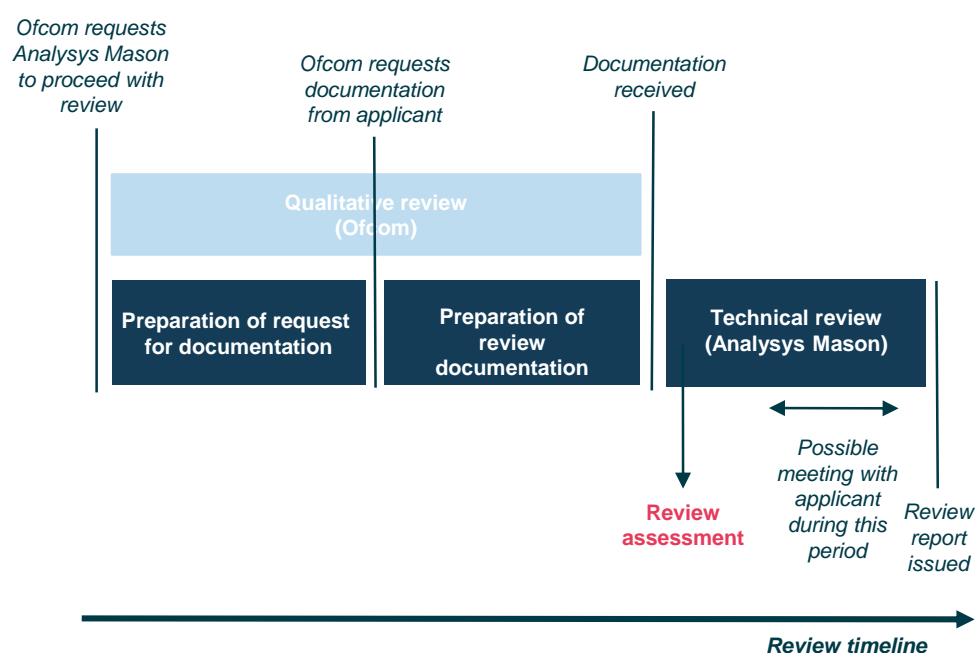
6 Further review of accredited services

Each price comparison service that has been accredited under this scheme will be reviewed 12 months after initial accreditation and every 18 months thereafter, by Analysys Mason, in order to ensure that it continues to satisfy the requirements specified by Ofcom, in particular that the information presented is accurate and up to date. This section describes how we will carry out this monitoring review, and its likely scope.

6.1 Review schedule

Each accredited provider of a price comparison service will be invited by Ofcom to seek renewal of its accredited status 12 months after the initial audit, and every 18 months thereafter. The schedule for this further review (shown in Figure 6.1) is somewhat simpler than that for the initial accreditation audit. Note that the timescales are not shown to scale.

Figure 6.1: Major action and decision points during the further review process [Source: Analysys Mason, 2013]



Once the applicant confirms that it wishes to renew its accredited status, Ofcom will notify Analysys Mason and we will prepare a brief request for documentation outlining the information needed. Ofcom will forward this request to the applicant and agree a timeframe for receipt of the documentation. We envisage an overall timescale for the review of around six weeks (two weeks for each of the three main stages). Please note that Analysys Mason will require a minimum of three weeks' notice before commencing the technical audit. In cases where it will help with the review, we may hold a meeting with the applicant, but we do not expect to do this as a matter of course. Both the qualitative and the technical elements of the audit can be carried out in parallel, and Ofcom will have flexibility over the stage at which its qualitative audit is carried out.

6.2 Scope of the review

The review will focus on a series of key issues which are driven either by changes that have been made to the applicant's price comparison service over the preceding 12 or 18 months (as appropriate), or any areas of concern flagged in the initial, or any subsequent, audit. We will not, however, attempt to conduct a comprehensive investigation of issues carried out as part of the initial audit. The review, and the request for information from the applicant, will be based upon:

- Any significant changes made to the price comparison engine during the preceding 12 or 18 months (as appropriate). Any such changes will form an important element of the review and we will subject them to audit with the same level of rigour we applied in the initial audit. When changes occur, we will discuss with Ofcom on a case-by-case basis whether or not these are sufficiently significant to warrant a full and rigorous re-audit (see Section 6.3 below).
- The tariff/package changes and additions made since the last audit. We will expect to receive a comprehensive log of these changes, detailing the type of change that was required: this might comprise a simple adjustment of input data, restructuring of tariff model, changes to the information presented by the service, any consequent changes in the way usage profiles are modelled and/or any additional assumptions made, an increase in the functionality of the price comparison model to capture innovative discount schemes, etc.
- Any changes made to the data-handling processes involved in maintaining the price comparison service.
- Any changes made to the systems which support the operations and management of the price comparison service.
- Any issues arising from our review of the price comparison service itself. We will conduct a range of tests similar to the sanity checks in the initial audit (see Section 5.1). We will also examine any changes made to the operators/service providers covered by the price comparison service, or indeed changes to the range of relevant packages and/or services included in the price comparison.
- Any issues that arose during the initial technical audit and that we documented in the audit report. We will focus particularly on those aspects of the service where we specifically requested changes to be made in order to reach the standard required for accreditation (if appropriate).

6.3 Need for a full re-audit

In consultation with Ofcom, Analysys Mason will make an early assessment of the scale of the technical audit required, based on the changes the applicant has made to its model methodology, data-handling processes and management systems during the preceding year. If the scale of audit required is beyond that envisaged in the review, Ofcom will invite the applicant to undergo a more extensive audit akin to that carried out as part of the initial accreditation process. Circumstances that may require this more extensive re-auditing include the following:

- The applicant has undertaken a wholesale re-creation of its price comparison model in a new software environment, such as a conversion from a database tool to a spreadsheet environment.
- The service has been radically re-positioned, such as extending its scope from fixed telephony services to also include other relevant services.
- The methodology has been extended, from simply costing individual calls to one which offers full bill comparisons (this would entail substantial new thinking about how to model usage levels and bill comparisons, additional implementation, and substantial re-design of the way information is presented).

6.4 Review process

Once the decision to proceed with the review has been reached, Analysys Mason will consider in turn each change described in the applicant's documentation, evaluating the approach taken (for example, the particular modelling approach used to capture a new form of discount), and assessing the quality of the implementation. Because the specific focus of the review will depend on the organisation, it is impossible to detail the precise technical features and characteristics that will be examined. In general, our review will be guided by the factors relating to model methodology, data-handling processes and management systems that we have already described in this report.

At the end of the review process, we will submit a report to Ofcom summarising our findings. The template for this review report can be found in Annex C.

Annex A Documentation required for technical audit

NOTE: This information is required for the technical audit conducted by Analysys Mason; this stage of the audit will only be carried out should your application successfully pass Ofcom's initial audit stage.

In order to carry out the technical audit, it is essential that we have the information requested below in order to understand how your price comparison service works, and the inputs it requires. We also need to evaluate the data-handling processes by which you obtain and manipulate information from operators and service providers (for example, information regarding tariffs and discount packages), and the management systems you use to ensure that the information you provide is as accurate and up to date as possible. We describe below the main issues that your response to this request for information should address.

Each section outlines the core information we require from you. However, if there are other issues which we do not specifically mention, and which you consider important, please feel free to include additional information. Please provide as much detail as possible, and where relevant provide supporting files such as spreadsheet calculations and copies of internal process documents.

We recognise that some of the detail in this data request may not be relevant to every price comparison service. For example, details on usage profiles may not be relevant for a service providing a list of package prices rather than a full bill comparison. However, the aim of this request is to cover the data which we may require for all price comparison services which may be accredited by Ofcom under the accreditation scheme.

All documentation should be sent to Ofcom in electronic form to the address below:

<Ofcom recipient and address>

A.1 General information

Please provide a short description of the nature of the price comparisons you offer, including any particular service focus you have (e.g. low-cost international calls), and the main target market for your service (e.g. sophisticated broadband users).

Please provide a list of the operators and service providers whose services are included in your price comparison, and describe the rationale for this selection.

A.2 Software systems

Please identify the modelling environment(s) in which your price comparison model is built (e.g. Excel spreadsheets, Access or SQL database, general purpose programming language). If more than one such tool or environment is used, please indicate the role of each in your model.

If it is likely to be useful, please provide a copy of your model (or model components). Examples of any input/output templates, or mechanisms used to transfer data between different modelling environments, would also be useful.

A.3 Model methodology

We require a complete and detailed description of the calculations you perform in producing the results presented to users of your price comparison service. This is particularly important if you are not able to provide a copy of the actual model. This description must include (as a minimum) details of how your service:

- determines which operators/service providers offer service in the **geographical region** where the user is located
- estimates **usage levels**, i.e. how it specifies how much consumers use the services that you are comparing (including calling patterns detailing the number of calls made, the type of call – such as international calls, calls to fixed lines, calls to mobile – the assumed duration of these calls, whether calls are made at peak or off-peak times, bandwidth requirements and usage capacity limits for broadband services, channel line-up for TV services)
- applies **tariff information** received from operators and service providers (such as pence per call minute, call set-up charges, varying billing increments, monthly rental charges, usage caps, event-based charges, etc.): you should describe in detail the algorithms used to account for each of the tariff structures considered
- accounts for the various types of **discount scheme** offered by operators and service providers (such as calling circles, inclusive ‘free’ minutes or reduced rates for on-net calls, introductory offers) which affect the consumer’s overall bill: for each type of discount scheme that is included in your model you should describe in detail how it is accounted for and any assumptions that are made
- makes **bill comparisons** across multiple tariff/discount combinations or multiple services – please describe how the bill comparison calculation is carried out (for example, cheapest operator only, comparison to user’s existing provider/package)
- accounts for different **payment mechanisms** and associated prices such as premiums charged for payment by credit card

- treats **legacy tariffs** that are no longer available for new supply, but may still be in use by some consumers
- deals with services sold as part of a **bundle of services** compared to those sold independently
- determines any **specific tariff packages** (for the operators included in the comparison) which are excluded from the service (such as BT Basic)? In such cases, please give the reason for this exclusion.

Please indicate whether your price comparisons include or exclude VAT.

Please also provide details of information sources that have been used to derive any assumptions that are relied on by your service, such as proportion of calls that are on-net, average call duration, average time online per day, etc.

A.4 Data handling processes and management

Please describe the processes by which input information (such as tariff data) is incorporated into your service and, in addition, how the resultant pricing or billing results are transferred to the interface with consumers. If you have internal documentation describing processes that are followed, please provide a copy of this. Your description should include (as a minimum) the following information.

Tariff input

- From where do you obtain information about tariffs and discounts? Is this information collected on a regular basis or do you rely on your sources to provide updates when they consider it appropriate?
- In what format (electronic, paper-based) does the tariff information reach you from your sources?
- What is the physical process by which you convert the tariff information provided by your sources to the tariff information used in the model (for example, this could involve manually re-keying information or an automated computer-based process)?

Usage levels

- What are your sources of information about usage levels, bandwidth requirements, etc.? Please describe in detail the sources used for any assumptions you make about usage patterns that are not explicitly requested from users of your price comparison service.
- In what format (electronic, paper-based) does this usage information reach you from your sources?

- What is the physical process by which you convert the usage information provided by your sources to the usage information used in the model (for example, re-keying or an automated computer-based process)?

Calculator

- Do you make use of more than one kind of modelling environment to price calls/services and carry out bill comparisons? If so, please describe how data is transferred between these environments.

Model output

- Please describe the physical process by which output information from your calculator is transferred to the consumer interface: for example, is the process purely electronic or is some manual intervention required?
- If the output of your model undergoes further manipulation (for example, in order to display bill comparison information to users in a particular format), please explain what additional calculations are performed.
- What information (if any) do you feed back to operators? Does this differ by operator, and if so, why?

Management of information

- How often do you update core input information (tariffs, discount structures, usage profiles) in your price comparison model? Is this a regular event or triggered by tariff changes etc.?
- What records are kept of source tariff information and the history of systems updates? Who is responsible for carrying out tariff/discount updates?
- How often do you review/update your usage profile information and assumptions? What would drive you to consider changes to your usage profiles?
- How often is the model itself upgraded (for example, to incorporate new functionality to cope with innovative discount schemes)? What steps do you take to manage and document version control as you update your price comparison model?
- What systems do you have in place to record changes to usage profiles and tariffs?
- Please describe how you determine the additional information provided to consumers which reflects the objectives, scope and limitations of the price comparisons you provide.
- What systems do you have to capture and respond to queries from customers? How many queries do you typically receive each week and what is the normal response time?

Annex B Template for technical audit report

B.1 Introduction

This report presents the findings of the technical audit carried out by Analysys Mason (on behalf of Ofcom) on the relevant price comparison service offered by <Applicant>. This technical audit covered two main areas, namely:

- the methodology underlying <Applicant's> price comparison model
- technical aspects of the system, including the processes and management systems in place to ensure the integrity of data used as input to the model, the flow of intermediate results through different model components, the generation of final results and the quality of the information provided to the consumer.

The report is divided into three main sections:

- a brief summary of the scope and objectives of <Applicant's> service
- our recommendations for accreditation and required next steps (if any)
- a summary of the main findings of our audit.

B.2 Scope and objectives

<Brief description of Applicant's service – services included, target market of users, range of operators/service providers featured, outline of underlying methodology, etc.>

B.3 Recommendations for accreditation

B.3.1 Summary of main issues arising from audit

<Brief outline of the headline issues>

B.3.2 Initial recommendations for accreditation

Analysys Mason has now carried out a comprehensive audit of <Applicant's> price comparison service, according to the specifications laid out in “*Accreditation Scheme for price comparison services: audit guidance document*”. Following this audit, we are able to make the following recommendations in relation to technical integrity of <Applicant's> price comparison service: <delete paragraphs as appropriate:>

- We are pleased to report that the <Applicant's> price comparison service provides accurate and up-to-date information to consumers, and merits consideration for award of the Ofcom Accreditation for price comparison services.

- At this stage, we cannot recommend that Ofcom consider awarding the Ofcom Accreditation for <Applicant's> price comparison service. We consider that a small number of minor but important adjustments (which we detail below) must be made before we are able to make a positive recommendation. We suggest that the applicant be given the opportunity to make the necessary changes before a final decision is taken regarding its accreditation.
- Unfortunately we are unable to recommend Accreditation for <Applicant's> price comparison service. We consider that there are significant technical and/or organisational concerns which mean that the service cannot be considered to offer a fair, accurate and timely service for users, as required by Ofcom. We describe these concerns in detail in the main body of this report.

Requirements for minor adjustments

<This section included only when adjustments to the service are required>

Before making a positive recommendation for Accreditation, we would require <Applicant> to make the following changes to its price comparison model service:

<insert list of issues that need attention, and any quantitative test results that should be provided to demonstrate that the changes have been implemented. These issues will also be highlighted in the sections below.>

B.4 Summary of main audit findings

This section documents the specific tests, reviews and evaluations we completed during the audit and briefly describes the main findings.

B.4.1 Initial sanity check of outputs

<Details of specific checks carried out and their outcome, including any indications of issues to be pursued in more detail later in the audit>

B.4.2 Comments on model documentation

<Brief description of main ambiguities and concerns arising, included how/if these were resolved during discussions with Applicant>

B.4.3 Evaluation of model methodology

This section comments on the following key features of the model methodology:

- usage profiles adopted
- tariff structuring
- discount modelling.

- call pricing and bill comparisons
- geographical constraints
- service bundling.
- transparency and independence
- comprehensiveness of operators and tariffs
- presentation of the price comparison service.

<Brief description of main ambiguities and concerns arising, included how/if these were resolved during discussions with Applicant>

B.4.4 Comments on model implementation

<Brief description of model implementation, including consistency with declared methodology, ease of incorporating new functionality and new input structures>

B.4.5 Comments on data-handling processes

<Brief description of the flow of data through Applicant's price comparison engine together with detailed comments on areas we consider represent potential risks>

B.4.6 Comments on management systems

<Brief description of the systems in place to manage the service and maintain the quality and timeliness of the information provided to the user. Specific comments on any aspects we feel are less than satisfactory>

B.4.7 Remaining concerns and ambiguities

<Summary of the main concerns and ambiguities that have arisen during the audit, and that we consider still remain an issue, even after discussions with Applicant>

Annex C Documentation required for further review

In order to conduct the review, 12 months after initial accreditation and every 18 months thereafter, of the technical audit for Ofcom's Accreditation scheme for price comparison services, it is essential that <Applicant> provides Analysys Mason with the information requested below in order to understand how your price comparison service works, and the inputs it requires. We also need to evaluate the data handling processes by which you obtain and manipulate information from operators and services providers (for example, information regarding tariffs and discount packages) and the management systems you use to ensure that the information you provide is as accurate and up to date as possible. We describe below the main issues that your response to this request for information should address.

Each section outlines the core information we require from you. However, if there are other issues which we do not specifically mention, and which you consider important, please feel free to include additional information. Please provide as much detail as possible, and where relevant provide supporting files such as spreadsheet calculations and copies of internal process documents.

We recognise that some of the detail in this data request may not be relevant to every price comparison service. For example, details on usage profiles may not be relevant for a service providing a list of package prices rather than a full bill comparison. However, the aim of this request is to cover the data which we may require for all price comparison services which may be accredited by Ofcom under the accreditation scheme.

All documentation should be sent to Ofcom in electronic form to the address below:

<Ofcom recipient and address>

C.1 General information

Please provide a short description of any areas where the price comparisons you offer have either increased or decreased in scope during the last 12 or 18 months (as appropriate), including any change in service focus (e.g. emphasis on low-cost international calls), or any change in the main target market for your price comparison service.

C.2 New usage profiles and tariffs

Please provide a description of any changes made to usage profiles during the last 12 or 18 months (as appropriate). This should include, as a minimum, details of any changes to key assumptions (for example, concerning average call duration and the proportion of calls eligible for certain discounts). Where relevant, please provide a copy of fresh calculations made in order to estimate these measures.

Are there any operators now included in the price comparison that were not included at the time of the initial, or any subsequent, audit? Are there any operators which are no longer included? In the case that operators have been removed from the price comparison service, please give the reason for this exclusion.

For the operators included in the comparison, are there any specific tariff packages (such as BT Basic) which are excluded? If so, please give the reason for this exclusion.

Please also provide a comprehensive log of all significant tariff/package changes and additions made during the last 12 or 18 months (as appropriate), detailing the type of change that was required in each case. These might include:

- simple adjustments of input data
- restructuring of tariff model
- changes to the information presented by the price comparison service
- consequent changes in the way usage profiles are modelled and/or any additional assumptions made
- an increase in the functionality of the price comparison model to capture innovative discount schemes, etc.

C.3 Model methodology and data-handling processes

Please identify any changes to the modelling environment(s) in which your price comparison model is built (e.g. Excel spreadsheets, Access or SQL database, general-purpose programming language). Should such changes have been made, please provide, wherever it is likely to be helpful, a copy of your model (or model components) in electronic format (for example, by email or on CD). Examples of any new input/output templates or new mechanisms used to transfer data between different modelling environments, would be particularly useful.

Please provide details of any changes to the calculations you perform in producing the results presented to users of your price comparison service. As a minimum, this should include details of any changes to how your model:

- estimates **usage levels**
- incorporates **tariff information**
- determines which operators/service providers offer service in the **geographical region** where the user resides
- calculates the final **user spend** on a call
- models the various types of **discount scheme** offered by operators and service providers
- makes **bill comparisons** across multiple tariff/discount combinations
- accounts for different **payment mechanisms**
- treats **legacy tariffs** that are no longer available for new supply
- deals with services sold as part of a **bundle of services**.

Please describe any changes to the processes by which input information (such as tariff data) is incorporated into your price comparison model and, in addition, how the resultant pricing or billing results are transferred to your price comparison service. As a minimum, this should include details of any changes in the following areas:

- sources of information
- format (electronic, paper-based) in which the information comes from your sources
- physical process by which you convert the information provided by your sources to the information used in the model (for example, this could involve re-keying information or an automated computer-based process)
- any ways in which you have to re-cast the information provided into a different data structure compatible with the input structure to your own price comparison model.
- the way in which data is transferred between different modelling environments (e.g. Excel and SQL).

C.4 Management systems

In the last 12 or 18 months (as appropriate) have there been any changes to the mechanism for obtaining tariff/discount package updates from operators and service providers?

If so, please provide a summary record of tests undertaken in the test area during the most recent methodology change.

Have there been any changes to way in which customer enquiries are dealt with, or in the average response time?

Annex D Template for further review report

This report summarises the findings of any further review of <Applicant's> price comparison service, located at <website address (if applicable)>, in order to ensure that this service continues to meet the standards for accuracy and timeliness set out in Ofcom's guidelines.

Our review is based on the issues raised under four main categories:

- any significant changes to the model methodology, data-handling process, or management systems that have been notified to Ofcom
- the pattern of data and/or model updates made throughout the past 12 or 18 months (as appropriate) as a result of changes by operator or service provider to the tariffs, packages and discount schemes they offer
- any issues raised by Analysys Mason's own sanity checks on the outputs that are presented by the price comparison service
- any issues raised in <the initial technical audit / last audit review (delete as appropriate)>, to monitor any subsequent developments.

D.1 Changes to data-handling processes

<Brief summary of changes in existing processes, and introduction of new processes or deletion of redundant processes due to changes in model methodology, use of different modelling environments, etc.>

<Analysys Mason's view on whether any of these changes undermine the price comparison service's eligibility for accreditation>

D.2 Changes to management systems

<Brief summary of any changes in management systems>

<Analysys Mason's view on whether any of these changes undermine the price comparison service's eligibility for accreditation>

D.3 Changes to tariffs

<Brief summary of the range and number of changes made, the requirement for changes either to model input or model functionality, the timescales over which changes were made and the resulting timeliness of the information presented to users, the quality of the implementation, impact on process or management systems>

<Analysys Mason's view on whether any of these changes undermine the price comparison service's eligibility for accreditation>

D.4 Review of price comparison service

<Summary of observable changes to the content and nature of the information presented by the service, results of simple sanity checks carried out during the review>

<Analysys Mason's view on whether any of these changes undermine the price comparison service's eligibility for accreditation>

D.5 Review of issues raised during previous audit(s)

<Summary of any changes/improvements made in response to earlier audits>

<Analysys Mason's view on whether any of these changes undermine the price comparison service's eligibility for accreditation>