

Quality of service monitoring

Utility Regulators Forum discussion paper

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The Utility Regulators Forum was established in recognition of the need for cooperation in a federal system among State-based regulators. The forum consists of regulators operating in industries where utilities that traditionally operated as monopolies are being opened up to competition as a result of the competition reform process. By acting as a focal point for regulators in different jurisdictions the forum will:

- ? foster understanding of issues and concepts faced by regulators on similar industries;
- ? minimise overlap of regulations for large users who operate across jurisdictions;
- ? provide a means of exchanging information; and
- ? enhance the prospects for consistency in the application of regulatory functions.

The following paper does not necessarily represent the views of the members of the Forum, but is released by the Regulators Forum to encourage discussion in a range of important regulatory issues.

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Summary

This paper outlines a framework for the monitoring of service quality by economic regulators; it is designed to assist regulators in fulfilling any responsibilities and exercising any powers they have in this area.

The exercise of market power by monopoly service providers can result in excessive prices and unsatisfactory quality of service. Quality of service monitoring is therefore undertaken to complement price regulation of monopoly services. It involves the assessment of a service provider's performance, usually based on prescribed indicators of quality and other information.

Quality can be taken into account in economic regulation through a program to monitor and analyse quality, which is used to establish incentives for service providers to maintain economic levels of quality. Possible incentives include the establishment and enforcement of quality standards and public reporting of quality performance to put pressure on the regulated firm to maintain its performance.

Quality of service monitoring may also provide a basis for price-based incentives to provide economic quality levels; there are, however, a number of issues which would need to be addressed in establishing such incentives.

Effective quality of service monitoring will be supported through legislative and/or regulatory provisions which give the regulators authority to undertake monitoring, require service providers to report on their quality performance, and (in some cases) impose penalties where service standards are not met.

Quality of service monitoring should focus on aspects of price-regulated services which have a significant impact on costs and/or consumer value. Further, the analysis of quality performance should take into account the levels of, and trends in, expenditure on service provision.

For capital intensive services provided using long-lived assets, a monitoring program should focus on the long-term impacts of investment on the quality of service. This requires quality to be monitored over sufficiently long periods. Assessments of whether services providers' asset management practices will provide economic service levels in the longer term may also be required, to identify emerging or latent problems in a timely manner.

A quality of service monitoring program should cover those aspects of quality directly related to price regulated services. A balance will need to be struck between comprehensively covering those regulated services while maintaining an overview of the key quality issues which impact most on prices and consumer value.

The monitoring program should be broad enough to cover services which are economically significant, and ensure that the information from the monitoring program can be placed in context. However, the program's coverage should be constrained by

the need to focus on key indicators which provide relevant performance drivers, and to contain the costs of monitoring to the regulator and the service provider.

An effective quality of service monitoring program will be based on: the periodic reporting of defined quality of service indicators, explanations and justifications by service providers of their performance; quality-related information reported by complaints-handling bodies and relevant regulators; and the results of independent performance evaluations such as benchmarking studies and audits. In general, a complementary mix of outcome, output and input measures will provide the best picture of performance.

To ensure that reported data are reliable, verifiable and comparable over time and between service providers, a clear and detailed specification of performance reporting requirements is required to be developed, in consultation with service providers; this will require periodic review. An independent expert opinion of data quality may also be sought. Publication of data generally results in improvements in data quality.

In publishing quality of service monitoring results, consideration should be given to:

- ? the extent to which service quality is influenced by factors or other providers which are not under the direct control of the service provider, so as to appropriately attribute responsibility for performance;
- ? the views of other regulators responsible for monitoring aspects of the quality performance of the service providers;
- ? identifying the audience quality of service monitoring reports and ensuring that the reports meet the audience's diverse needs; and
- ? the appropriate interval between reports.

The regulator should take into account the fact that performance is likely to differ between service providers. There may be potential to correct for these differences through detailed analysis and benchmarking, but in some cases there is no clear calculus for doing so. In such cases, trends and fluctuations in performance over time are important.

A 'whole of business' approach to performance reporting — combining the analysis of indicators of price, profitability and service — ensures that a complete picture of performance is presented.

Background and purpose

Quality of service in economic regulation

It is well accepted that the exercise of market power results in excessive prices and unsatisfactory quality of service, and that economic regulation must therefore consider quality together with price. If quality is not considered, regulated prices may be ‘gamed’ by reducing quality levels, which is economically the equivalent of a high price.

Quality performance may be inadequate because levels of service (and prices) are excessive relative to consumers’ demand or alternatively, insufficient. Excessive quality may occur under ‘cost plus’ or a rate of return approach to regulation of prices. Poor quality may result under price controls which provide incentives to reduce expenditure, as multi-year CPI-X price caps are designed to do, or in the case of an unregulated monopoly.

Quality can be taken into account in regulation through a program to monitor and analyse quality, which is used to establish incentives for service providers to maintain economic levels of quality; possible incentives include public reporting of quality performance to put pressure on the regulated firm — directly and through the demands of informed customers — to maintain or improve its performance, and the establishment and enforcement of quality standards.

Under the price-service ‘regulatory contracts’ which are developed when a new price control is put in place — either upon privatisation or corporatisation, or review of an existing price control — the regulated firm is required to supply services at a target level of quality, or above a minimum level, at the regulated level of prices.

Quality of service monitoring programs therefore complement price regulation, and may be the responsibility of the economic regulator or a specialist quality or technical regulator. For example, the Office of Regulator General is the economic regulator of Victoria’s electricity industry and, in that role, regulates key service parameters such as quality and reliability of supply. Electrical safety is, however, regulated by the Chief Electrical Inspector. In the telecommunications industry, the Australian Competition and Consumer Commission (ACCC) is the economic regulator, but regulation of quality and technical standards is undertaken by the Australian Communications Authority. Where responsibility is divided, it remains important that price regulation is coordinated with quality of service regulation and monitoring.

Purpose of this report

The purpose of this paper is to outline a framework for quality of service monitoring to assist regulators to decide what to do in this area, consistent with their powers. It draws on the experience of Australian regulators in this area, and has been the subject of

consultation with regulated service providers. The particular focus of the paper is on regulation of infrastructure services, although it may have wider relevance.

The particular questions addressed in this paper are:

- ? What are the objectives of monitoring quality of service from the perspective of economic regulation, and what value may be derived from this activity?
- ? What services should be monitored, using which indicators and other sources of information?
- ? What value may be derived from publishing performance results, and how is this best done?
- ? What issues need to be considered in analysing performance results?

Legislative or regulatory basis

Effective quality of service monitoring will be supported through legislative and/or regulatory provisions which give the regulator authority to undertake the monitoring function, require service providers to give relevant information relating to quality of service to the regulator and may impose penalties where service standards are not met. Legislative provisions will vary with the circumstances of the industry being regulated. An example of a legislative provision relating to quality of service monitoring is illustrated in the box below:

Airports Act 1996 (Cwth) and Explanatory Memorandum

Part 8 of the Act provides for the ACCC to monitor quality of service at certain privatised airports. Part 8 contains provisions in relation to quality of service monitoring and reporting. More specifically Part 8 provides for:

- ? quality of service indicators to be specified in regulations;
- ? the ACCC to monitor and evaluate the quality of airports services and facilities against specified indicators and other such criteria as the ACCC determines in writing;
- ? records to be kept in relation to quality of service and for information to be provided to the ACCC by airport operators and other relevant parties including airlines;
- ? certification, by statutory declaration, of information provided; and
- ? the ACCC to publish reports on monitoring and evaluation of quality of service against the prescribed indicators.

The Explanatory Memorandum to the Airports Bill 1996 states that the quality of service monitoring and reporting provisions in the Bill complement the ACCC's enabling legislation in relation to pricing oversight arrangements. Further, the Memorandum states that in monitoring quality of service, the ACCC must not set the standards for the facilities or services provided.

Objectives of quality of service monitoring

The ultimate objective of quality of service monitoring is to ensure that an economic quality of service is provided to the users of regulated monopoly services, taking into account the price of the service and users' preferences.

The question then is whether and how quality monitoring is required to underpin incentives which will ensure that service providers provide the appropriate quality levels. Possible incentives include the following:

- ? Comparative reporting of the service performance of service providers encourages providers to maintain and improve service quality by exposing them to judgment by informed customers, media and other key stakeholders. It also facilitates informed negotiations between customers and service providers on local or generalised quality improvements.
- ? Enforcement of service standards (e.g. through the application of statutory penalties) by the regulator. This option carries high transaction costs and is allocatively inefficient, in that penalties do not reflect the loss of consumer value and are not paid to the effected consumers in proportion to their loss of value. Nevertheless, this can be an effective incentive of last resort, in that service providers generally seek to avoid such a consequence. The establishment of standards requires sound historical data on quality performance to ensure the standards are realistic and meaningful.
- ? Price controls may provide for price adjustments in response to service performance. The usual form of this incentive is that prices are reduced when performance falls below benchmark levels; prices may also rise when performance exceeds benchmark service levels. The size of the adjustment would generally be proportional to the difference between actual and benchmark service levels, but may be capped at particular levels. This particular form of incentives raises a number of issues¹

1 The following issues are raised by this form of incentive regulation:

- ? If the same price adjustments are provided to all customers (that is, if the adjustments do not reflect the different levels of service actually received by individual customers, or the value placed by different customer segments on that service), the regulated business faces a distorted incentive: that is, to make service improvements so that they cost least rather than maximise net benefit to customers. This may encourage 'gaming' behaviour by providers, rather than responsiveness to customers' needs. If price adjustments are targeted more carefully, the system becomes more complex and difficult to implement. In other words, a trade-off exists in this case between allocative efficiency and transaction costs.
- ? Rewarding service providers for over-performance, as well as penalising them for under-performance, creates a symmetrical incentive, but may be seen by customers as requiring them to pay twice (for the incentives as well as the costs of achieving the enhanced performance). In electricity, surveys generally show that customers generally place less value on improvements in reliability than in reductions, so a symmetrical incentive would not reflect their preferences.

- ? The regulator may require service providers to make guaranteed payments to customers who receive service below a worst-case benchmark²
- ? Service providers also face incentives from the possibility of awards of compensation by the courts or complaints handling bodies for sub-standard service which causes loss or damage. This form of incentive is allocatively efficient but carries high transaction costs which limit its impact.

The first three forms of incentive require the regulator to implement a quality of service monitoring program. The enforcement and price adjustment incentives have potential benefits but also significant limitations. Because the comparative reporting option is relatively straightforward to implement, it is generally seen as an effective regulatory tool, and is arguably a pre-requisite of other forms of incentive. It is examined in more detail later in this paper.

Designing a quality of service monitoring program

Relating quality of service to costs and consumer value

In designing a quality of service monitoring program, and analysing its results, consideration needs to be given to the critical relationship between service quality and:

- ? the service provider's expenditure on price-regulated services; and
- ? the value derived by consumers from the service.

It is well understood that the level of expenditure influences quality of service. Insufficient or inefficient expenditure may have an impact on the level of congestion, service delays, reliability, safety, aesthetic quality, ease of user, ease of payment,

-
- ? Incentives should exceed the reduction (increase) in the regulated business's costs arising from the reduced (enhanced) performance, but should be less than the value placed by customers on the reduction (increase) in performance. However, there may be no agreed method of measuring customers' valuations of service, and the methods that are used may suggest a wide range in valuations between customer segments. This is certainly true in electricity; reliability is valued much more highly by industrial and commercial customers than by residential customers.
 - ? Service levels may vary significantly from year to year, so that annual adjustments may be made in response to variations beyond a service provider's control. This could be avoided in part by only making adjustments following significant variation in service from benchmark levels.
- 2 This is effectively a particular, targeted example of the price-based form of incentive. Generally, guaranteed payment schemes provide a minor financial incentive, although they may have a significant symbolic value to customers and the service provider. Transaction costs are low but allocative efficiency is at best moderate, given that payments are of a fixed size and bear no necessary relationship to the value placed by the customer on the reduced service.

accuracy of billing, responsiveness to customer complaints and the provision of information to customers.

Some quality indicators may have a significant relationship with expenditure. Others — such as availability of payment options — may have less effect on costs but a large impact on consumer value. For example, the extent to which supply is denied to customers with payment difficulties is likely to be a relatively significant issue for supply of gas and electricity services to households.

Quality of service monitoring should therefore focus on aspects of service which have a significant impact on costs and/or consumer value. Further, the analysis of quality performance should take into account the levels of, and trends in, expenditure on service provision.

For capital intensive services which are provided using long-lived assets, an important focus of a monitoring program should be on the long-term impacts of investment patterns on the quality of service, for example the effect of under-provision of capacity. Monitoring quality trends over sufficiently long periods will be important. Further, assessments of whether service providers' asset management practices will provide economic service levels in the longer term may be required to complement the monitoring of historical trends on quality of service, so that emerging or latent problems are identified in a timely manner.

Coverage of the monitoring program

The primary focus of quality of service monitoring should be on aspects of quality which relate directly to monopoly services which are price-regulated; there may also be a case for monitoring the quality of services which are open to competition; but the extent of actual competition is limited.

The monitoring program should be broad enough to:

- ? cover services which are economically significant, as discussed above; and
- ? ensure that information gleaned from the monitoring program can be placed in its proper context in assessing performance (this will require, for example, information on the characteristics of the service provider's assets and customers).

The breadth of coverage should, however, be constrained by:

- ? the need to maintain a focus on key indicators which provide relevant performance drivers to the service provider; and
- ? the cost of monitoring, from the perspective of both the regulator and service provider.

Information sources

Performance indicators are typically used to monitor and evaluate the quality of service provided. However, while they reveal trends in service levels, and the relative performance of providers, they will generally not provide a full explanation of the underlying causes of those trends or differences. Indicators therefore act as triggers to seek further information to assist with interpretation of results.

An effective quality of service monitoring program will therefore be based on:

- ? the periodic reporting of defined quality of service indicators which are, as far as possible, comparable across service providers in the relevant industry; the indicators may measure:
 - ? outputs, such as the level of service congestion and availability;
 - ? outcomes, such as customer complaints and customer satisfaction; and
 - ? inputs, such as the level of expenditure on services and contextual information on the cost and performance drivers of the firm.
- ? explanations and justifications by service providers of their performance;
- ? analysis of other service and financial performance information published by the service providers, such as annual reports;
- ? analysis of other quality of service-related information by industry bodies responsible for complaint and dispute resolution (e.g.: industry ombudsman schemes);
- ? reports by quality of service regulators responsible for quality parameters which are significant cost drivers, such as safety, health or environmental performance; and
- ? the results of independent performance evaluation such as benchmarking studies, audits of compliance with quality of service obligation and assessments of the long-term implications for quality levels of current asset management practices.

In defining performance reporting requirements, consideration will need to be given to the following.

- ? The extent of geographic, demographic and temporal segmentation of performance results. A variety of factors need to be considered, such as the significance of the indicator to different customer segments, and its volatility over time and across regions.
- ? The frequency with which data is reported, which is also determined by the significance of a particular indicator and its variability with time (for example, the Office of the Regulator-General receives data on regional electricity supply reliability each month, data on billing-related indicators each quarter, reports on the reliability of individual high voltage feeders annually, and the results of audits of asset management less frequently, but at least once every five years).

- ? The indicators and other information used by the service providers in managing their businesses. These form the starting point for defining performance reporting requirements for regulatory purposes. However, regulators, in consultation with the service providers and other key stakeholders, may need to consider:
 - ? introducing new indicators where a significant service is not the subject of effective monitoring, and there is a net benefit in introducing such monitoring; and
 - ? varying the definitions of indicators used by service providers, for example to achieve consistency of reporting among service providers or to better measure the service in question;
- ? The balance between output, outcomes and input measures.
- ? The reliability, verifiability and compatibility of the information to be reported.
- ? As indicated above, the cost of providing performance information.

The last three issues are addressed below.

The balance between outcomes, outputs and inputs

Ideally, quality of service monitoring would focus on an appropriate balance between outputs (which provide stable measures of delivered service) and outcomes (which indicate user perceptions of the service, and therefore provide a guide to their evolving preferences as well as the performance of the service provider).

Inputs, in the form of costs, will need to be measured to inform judgements about the efficiency with which services are being provided. Inputs alone are not sufficient, however, to determine whether cost reductions have been achieved by reducing service quality. This is therefore necessary to measure service outputs — through quantitative measures or assessment of compliance with regulatory obligations — which are directly influenced by the service provider’s expenditure.

However, reliance on outputs alone is also problematic because price and service regulation must ultimately meet users’ reasonable service expectations and willingness to pay. In the absence of user perception data, it is difficult to establish what the appropriate price-service mix is. It is therefore necessary to also measure outcomes. Outcome measures may include complaint statistics, but more representative information will be obtained from customer surveys. However, reliance on outcomes alone is problematic because it will be unclear whether changes in the results reflect changes in user expectation or a change in output performance.

The appropriate mix of approaches depends on the service being measured, but in general, the three forms of indicators complement each other and are all required, subject to the constraints such as costs, economic significance and measurability discussed above.

There may also be a role for measuring inputs other than costs in the case of services which are provided using long-lived assets, such as those used to provide utility services. Significant under-investment in renewing or augmenting those assets may not cause a detectable deterioration in output performance for several years, at which point it will take several years more to reverse the decline and restore previous performance levels. To safeguard against this, the regulator may seek independent expert assurance that the service provider's asset management program is of such a size and quality as to meet quality of service requirements in the medium to long term.

The Office of the Regulator-General has established such an audit program which will provide periodic assessments of the asset management practices of Victoria's distributors of electricity, water, and gas.

Reliability, verifiability and comparability of information

If quality of service monitoring is to reliably inform regulatory decision-making, it is of fundamental importance that the information it yields is sufficiently comparable, verifiable and reliable for the purpose to which it will be put.

This requires a clear and detailed specification of the performance information to be reported by service providers, and the form in which this is to be done, in consultation with service providers³. Consideration will need to be given to the limitations of the providers' information reporting systems and the inherent measurability of each service provider.

There is also a requirement to validate data quality. In some cases, this may require an independent expert opinion to provide the regulator with adequate assurance⁴. Publication of data generally results in improvements in data quality due to the extra scrutiny to which the data is subjected by the regulator and the service provider prior to publication.

Performance information specification should be viewed as living documents. The regulator's need for information will change as experience is gathered and new service issues arise. This will sometimes result in a requirement for more detailed performance data, but may equally allow the deletion or consolidation of indicators whose value proves to be limited.

Performance information specifications should therefore be subjected to periodic review in consultation with the service providers and, preferably, the users.

3 The Office of the Regulator-General's performance information specifications for the electricity and water industries is available at <http://www.reggen.voc.gov.au/>.

4 The Office of the Regulator-General has published audit frameworks for the electricity and water industries which are available through <http://www.reggen.vic.gov.au/>.

The costs of providing and processing information

A regulator should be conscious of the need to minimise the net cost of the monitoring program to the service provider. However, this needs to be balanced against the reasonable expectation that monopoly service providers, like firms in competitive industries, will maintain comprehensive databases on many aspects of their businesses.

The regulator will need to give due consideration to the lead times involved in implementing significant changes to reporting systems.

In the process of formulating its approach to monitoring quality of service, the regulator should as far as possible seek to utilise measures based on information that is readily available — from the service provider itself, customers and other government agencies⁵.

As discussed above, however, the regulator may have cause to introduce new measures, for example more user-focused output measures than have traditionally been employed by the service provider. This should be done in consultation with service providers and users to ensure that the measure is appropriate and becomes a key indicator for the business as well as the regulator.

Regulatory costs are also driven by the frequency of reporting, which is discussed above.

The regulator's cost of storage and analysis of information are significant issues. It is essential that all information gathered has an identified purpose and be put to that purpose. Failure to do so will undermine the legitimacy of the regulator's information requirements. This requires adequate staff and software to undertake that function.

Publication of quality of service performance

Overview

Regular publication of the findings of the quality of service monitoring program is designed to increase transparency of a service provider's performance and put pressure on service provider's economic levels of service⁶.

The manner in which a regulator publishes material is important. Thought needs to be given to the targeting of information to ensure that it is relevant and interesting to end-

5 For example Airservices Australia will provide the ACCC with information on aircraft delays, aircraft movements and runway capacity at regulated airports.

6 The Office of the Regulator-General's performance reports on the electricity and water industry are available at <http://www.reggen.vic.gov.au/>.

users. The regulator may publish data on specific performance indicators, or summarise underlying trends.

The regulator should consult service providers and other interested parties on the results of performance monitoring, to understand the underlying causes of changes in quality of service. Specifically, draft copies of a monitoring report should normally be circulated to the service provider for comment prior to publication. This consultation is an important input into the regulator's assessment of quality and should be given appropriate recognition in the published findings.

Specific quality incidents (generally relating to localised or episodic under-performance) may require provision of more detailed information to facilitate an investigation by the regulator. Where relevant, a regulator may seek independent expert advice on the explanations provided. Those explanations will become subject to peer review by other stakeholders on publication.

Breadth of disclosure

Disclosure should, ideally, present a complete picture of performance. To focus only on quality of service while ignoring price and profitability is to see only one side of the coin. For the regulator, users and other stakeholders to make information judgements about performance, whole-of-business reporting which encompasses all three dimensions is preferable

The Office of the Regulator-General has introduced whole-of business reporting of the performance of Victoria's electricity distributors; similarly, regulatory reports developed by the ACCC on airports cover financial performance, compliance with price caps and price monitoring, in addition to reporting on the quality of service monitoring outcome for each airport.⁷

Identifying the audience

The principal audiences for public reports on the performance of regulated service providers appear to be:

- ? the service providers themselves, who often focus their quality management initiatives on published performance results. The Office of the regulator-General's performance reports have on several occasions prompted Victoria's electricity and Melbourne's water distributors to implement performance improvement initiatives prior to the publication of adverse trends in service quality;
- ? key stakeholders, in particular government, opposition and customer advocates;
- ? the media, the most common avenue by which the reported results are conveyed to customers; and

⁷ Airport reports can be found on the ACCC website: <http://www.acc.gov.au>

? a relatively small number of informed customers and potential service users who obtain and analyse the reports.

Analysis and interpretation of data

In cases where there is diverse responsibility for the quality of services, it will be important for the regulator to obtain qualification and further investigation before acting on information. The regulator should be conscious that interpretation of the indicators used to measure quality of service may be complex and take this into account in analysis. Further, where there is the possibility of mitigating circumstances (whether favourable or otherwise) influencing the results of monitoring, the regulator should welcome, and in some instances seek, comments and additional information from operators.

In the case of services which are not under the direct control of the operator, information will be sought on the cause or causes of adverse performance and noted appropriately in monitoring reports.

In seeking to draw conclusions from comparisons of different levels of quality of service, the regulator should take into account the fact that performance is likely to differ between service providers. There may be potential to correct for these differences through detailed analysis and benchmarking, but in many cases there is no clear calculus for doing so. In such cases, trends in performance over time are important.

Variations in performance due to seasonal influences may also justify analysing performance using multi-year averages and using variances to assess the statistical significance of fluctuations.

For example, a water distributor whose service territory is dominated by clay soils will, all else being equal, experience a higher number of pipe bursts than one which enjoys sandy soils. While comparisons of performance in a single year may not be relevant, an upward trend in one company over several years, and a corresponding downward trend in another, may be.

Similarly, an electricity distributor which services rural areas will have inferior reliability of supply relative to those which predominantly service urban customers. In addition to considering each distributor's performance trend over time, the differences between them may be adjusted by separately analysing the reliability provided by each to its urban and (if any) rural customers

Responsibility for quality of service — the issue of ‘control’

In many cases, it will be necessary for quality of service monitoring to include services over which the service provider may have only indirect or partial control. This should be given appropriate recognition in interpreting performance results. In the case of airports the ACCC has been directed as follows:

In undertaking [its prices oversight] function, the ACCC will be expected to take into account the degree of control which the airport operator has over the particular quality measures. [Department of Transport and Regional Development, Pricing Policy Paper, November 1996, p. 6]

Service providers will often identify extraneous factors which they claim are uncontrollable and should therefore not be subject to performance measurement or (more commonly) disclosure. In many cases, however, quality of service is in fact controllable, but there may be long delays and high costs incurred in exercising that control. For example, the susceptibility of powerlines to faults induced by cars hitting poles, or animals or branches contacting conductors (events which are generally characterised as outside the control of the distributor) would be largely eliminated by placing them underground. However, this would take substantial time and resources which may exceed customers' willingness to pay. When undertaken in specific high-risk locations, however, the investment may be warranted.

Multiple agencies may be involved in the provision of services, which further raises issues of control. For example, final services to passengers at airports are typically provided by airlines, government agencies, the airport operator and sub-lessees of the airport operator. The waiting time at check-in counters, for instance, will depend on the facilities provided by the airport owner and the staff provided by the airline. Similarly, water quality may be influenced by the headworks operator as well as the distributor.

In the case of airports an indication of the relative responsibilities for service performance can be obtained by using indicators relating to final outcomes, such as customer/passenger waiting times, with measures of the utilisation of facilities. The combination of long waiting times for instance, with high utilisation of facilities would suggest that the airport operator is more likely to be responsible for poor performance than other parties.

In analysing and disclosing performance in such cases, it is important that accompanying discussion reflects this division of responsibility and draws fair conclusions about the responsibility for any under-performance.

Timing of reports

The timing of reports is a significant issue. Where quality of service performance is sensitive and attracts a high level of public interest, there may be cause to issue quarterly or six-monthly reports

Reference

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