

Section 9: Appendix B

Price review model: final validation report: September 2001 Report prepared by Scott Moncrieff

Introduction

This report has been prepared as the final stage of the validation of the Price Review Model used by the Water Industry Commissioner for Scotland to calculate his recommendations on revenue caps.

The work has been carried out by the Business Technology Group of Scott-Moncrieff, in order to provide both financial and software design expertise in the consideration of the model.

This report sets out the project approach, how we assessed the areas of risk identified during our initial review and our approach to substantive testing, carried out to support our analysis and conclusion as to the reliability and integrity of the Price Review Model.

This report is being issued at the completion of the review, to the Water Industry Commissioner for Scotland.

Study objectives

The primary purpose of this audit was to provide the Water Industry Commissioner for Scotland and the Scottish Executive with assurance as to the reliability and integrity of the information generated by the pricing model.

In particular the audit work sought to ensure that there was no opportunity for material errors in the recommendations made by the Water Commissioner as a result of errors in the model.

This report summarises the work carried out, the primary risks identified and our opinion on the reliability and integrity of the pricing model.

Project assumptions

No consideration or challenging of the accounting principles within the model, or their application, was undertaken as part of this project.

Our review of the various assumptions entered into the model is restricted to confirming that they were supported by verifiable evidence approved by the Commissioner's professional staff.

Other methodologies and formulae developed and used to calculate or justify those assumptions have also been accepted as read.

Project approach

In order to allow us to commence our review of the Price Review Model, a series of meetings were undertaken with staff at the Water Industry Commissioner for Scotland's office in Stirling. The aim of these meetings was to obtain a degree of background knowledge both of the model itself and the importance and significance of the system to the Water Industry Commissioner for Scotland.

The meetings also provided background to the development of the model and the compilation and uploading of data into the model.

During this initial phase of the project we obtained a thorough understanding of the model and the environment within which it is operating. Part of this initial appraisal was a high level risk analysis to ensure that the audit focused on those areas of greatest risk.

The risk analysis was broken down into four main elements:

- Identification of the assets employed (e.g. the pricing information, the model itself);
- Evaluation of the impact of an adverse event on those assets;
- An assessment of the likelihood of the adverse event occurring;
- The identification of appropriate countermeasures to protect the assets or limit the damage caused by an event.

The areas we evaluated were those which we expected to present the highest risks, and included:

- Management
- Security
- Data quality
- Design quality
- Sensitivity analysis

The outcome of this phase identified the key risks and allowed us to finalise our approach to the review and testing of the model reflecting these risks.

Based on the outcome of the above we carried out a detailed review of the pricing model and supporting systems.

Risks were assessed on an ongoing basis throughout the project, with the programme of work adjusted accordingly.

In addition to reviewing the design parameters we undertook a range of detailed systems tests using a variety of Computer Assisted Audit Techniques. These were designed to test for system failures such as the incorrect processing of data, acceptance of invalid data, corruption of data or the generation of invalid data in reports.

Conclusion

Based on our understanding of the Commissioner's approach and our analysis of the pricing model, we are satisfied that it incorporates all of the principles set out in his approach to calculating his recommendations on revenue caps.

Our scrutiny of the Commissioner's audit trail for the data used in the model, supplemented by intensive deconstruction, analysis and substantive testing of the actual model, allows us to conclude that:

The model is accurate in all material respects and represents fairly the challenges faced by the water authorities.

Although we are satisfied that:

- the modelling approach adopted; and
- the data processing and manipulation procedures used to both populate the model and subsequently calculate summary reports and graphs;

is unlikely to result in material errors in the price review process; we did have concerns over the robustness, operational flexibility and ultimately data integrity of the price model, outwith a supported and managed environment.

We were able to satisfy ourselves that in its current operating

environment within the Commissioner's office, there is a level of support and development knowledge of the system that enables the key operators to monitor the model's performance and ensure it continues to reflect the Commissioner's desired approach and generates valid results.

We have supplied the Commissioner with a separate report detailing a range of system development, management and monitoring procedures which would enhance the reliability and integrity of future price review models.

We have also confirmed that appropriate arrangements are in place to secure the final version of the pricing model, used to generate the figures that are presented in the Commissioner's published Review.

The Water Industry Commissioner for Scotland is asked to consider the contents of this report and accept the conclusions drawn as a result of the work carried out.

We would like to thank all members of the Water Industry Commissioner for Scotland's staff we dealt with, for their co-operation and assistance during the course of this review.

Scott-Moncrieff
Chartered Accountants
September 2001