



Data and Systems Integrity

Questionnaire

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Table of contents

1	Introduction	1
2	Instructions	1
3	<<Application name>>	1
3.1	Introduction	1
3.2	Contact details	1
3.2.1	Owner	1
3.2.2	Manager	2
3.2.3	Administrator	2
3.3	System description	2
3.3.1	Purpose	2
3.3.2	Version	2
3.3.3	Operating system	2
3.3.4	Hardware	2
3.4	Operating environment	2
3.4.1	Environmental criteria	2
3.4.2	Policies and procedures	3
3.4.3	Monitoring method	3
3.4.4	Reporting details	3
3.4.5	Outcomes realised	3
3.5	Integration	3
3.5.1	Systems integration	3
3.5.2	Internet integration	4
3.5.3	Business integration	4
3.5.3.1	Complaints	4
3.5.3.1.1	Procedures	4
3.5.3.1.2	Monitoring method	4
3.5.3.1.3	Reporting details	4
3.5.3.1.4	Outcomes realised	4
3.5.3.2	Training	4
3.5.3.2.1	Conducted	4
3.5.3.2.2	Monitoring method	4
3.5.3.2.3	Reporting details	4
3.5.3.2.4	Outcomes realised	5
3.5.3.3	Procedures	5
3.5.3.3.1	Policies and procedures	5
3.5.3.3.2	Monitoring method	5
3.5.3.3.3	Reporting details	5
3.5.3.3.4	Outcomes realised	5
3.6	Performance quality	5
3.6.1	Operational details	5
3.6.1.1	Procedures	5
3.6.1.2	Monitoring method	5
3.6.1.3	Reporting details	5
3.6.1.4	Outcomes realised	5
3.6.2	Performance criteria	5
3.6.2.1	Criteria specification	5
3.6.2.2	Policies and procedures	6
3.6.2.3	Monitoring method	6
3.6.2.4	Reporting details	6
3.6.2.5	Outcomes realised	6
3.6.3	Business impact	6
3.7	Data quality	6
3.7.1	Introduction	6
3.7.2	Record criteria	7

- 3.7.3 Record information.....7
- 3.7.4 Business impact.....8
- 3.8 Backup.....8
 - 3.8.1 Procedure.....8
 - 3.8.2 Monitoring method.....8
 - 3.8.3 Reporting details.....8
 - 3.8.4 Outcomes realised.....8
 - 3.8.5 Business impact.....8
- 3.9 Recovery.....9
 - 3.9.1 Procedure.....9
 - 3.9.2 Monitoring method.....9
 - 3.9.3 Reporting details.....9
 - 3.9.4 Outcomes realised.....9
 - 3.9.5 Business impact.....9
- 3.10 Archiving.....9
 - 3.10.1 Offsite archiving.....9
 - 3.10.1.1 Procedure.....9
 - 3.10.1.2 Monitoring method.....9
 - 3.10.1.3 Reporting details.....9
 - 3.10.1.4 Outcomes realised.....9
 - 3.10.2 Onsite archiving.....10
 - 3.10.2.1 Procedure.....10
 - 3.10.2.2 Monitoring method.....10
 - 3.10.2.3 Reporting details.....10
 - 3.10.2.4 Outcomes realised.....10
 - 3.10.3 Expiry.....10
 - 3.10.3.1 Procedure.....10
 - 3.10.3.2 Monitoring method.....10
 - 3.10.3.3 Reporting details.....10
 - 3.10.3.4 Outcomes realised.....10
- 3.11 Security.....10
 - 3.11.1 Environmental.....10
 - 3.11.2 Unauthorised editing.....11
 - 3.11.3 Introduction.....11
 - 3.11.3.1 Procedure.....11
 - 3.11.3.2 Monitoring method.....11
 - 3.11.3.3 Reporting details.....11
 - 3.11.3.4 Outcomes realised.....11
 - 3.11.3.5 Estimate the loss to the business.....11
 - 3.11.4 Unauthorised access.....11
 - 3.11.4.1 Introduction.....11
 - 3.11.4.2 Procedure.....11
 - 3.11.4.3 Monitoring method.....11
 - 3.11.4.4 Reporting details.....11
 - 3.11.4.5 Outcomes realised.....11
 - 3.11.4.6 Estimate the loss to the business.....12
- 4 History reconstruction.....12
 - 4.1 Introduction.....12
 - 4.2 Court case.....12
 - 4.2.1 Scenario.....12
 - 4.2.2 Procedure and policy.....12
 - 4.2.3 Information sources.....12
 - 4.2.4 Lost information.....13
 - 4.2.5 Business impact.....13
 - 4.3 Customer dispute.....13
 - 4.3.1 Scenario.....13
 - 4.3.2 Procedure and policy.....13
 - 4.3.3 Information sources.....13

- 4.3.4 Lost information 13
- 4.3.5 Business impact 13
- 4.4 Statutory reporting 14
 - 4.4.1 Scenario 14
 - 4.4.2 Procedure and policy 14
 - 4.4.3 Information sources 14
 - 4.4.4 Lost information 14
 - 4.4.5 Business impact 14
- 5 Signoff 15

1 Introduction

This questionnaire is designed to help clients with their data integrity issues and to assist in lowering hidden costs. A series of questions about their data, data quality and related procedures are presented and clients are asked to complete as many questions as possible. The results obtained from this questionnaire form the bases of a review that is reported to the client.

To address data integrity, you also need to address the systems in which the data are held.

2 Instructions

When using this questionnaire, please consider the following guidelines:

- The purpose and use of this document shall be explained to the client and completed in collaboration with the client.
- Provision of comprehensive and authoritative answering of the questions is in the best interest of the client. The results are not a criticism of the data integrity issues reviewed.
- When completing the document, please over-write the symbols and the text between “<<” and “>>”. If the information is not applicable or is unknown please state accordingly. Update the table of contents at the end.
- Leave all of the questions in the document. The absence of information is as important as its presence.
- Repeat for each system in the business.
- Then complete the final section – History reconstruction – to measure the cross system integration.
- Please ensure signoff by the client.

3 <<Application name>>

3.1 Introduction

To properly assess data quality so that recommendations can be made on resolving it, the systems used need to be understood. Poor data quality is often related to difficulty of data entry of which the system used is a major factor. Use this section to establish system details.

3.2 Contact details

3.2.1 Owner

Name: <<name of owner>>

Position: <<position of administrator>>

Responsibility: <<list responsibilities>>

Reports to: <<name and role of the person reported to>>



3.2.2 Manager

Name: <<name of manager>>

Position: <<position of manager>>

Responsibility: <<state responsibilities>>

Reports to: <<name and role of the person reported to>>

3.2.3 Administrator

Name: <<name of administrator>>

Position: <<position of administrator>>

Responsibility: <<state responsibilities>>

Reports to: <<name and role of the person reported to>>

3.3 System description

3.3.1 Purpose

<<state the purpose of the system>>

3.3.2 Version

<<state the version of the system>>

3.3.3 Operating system

<<state the operating system on which the application is running>>

3.3.4 Hardware

<<state the hardware on which the application is running and the hardware it uses, e.g. printers>>

3.4 Operating environment

3.4.1 Environmental criteria

<<List the environmental criteria specified for the system, the performance of the system to the criteria and the impact on the business of not achieving>>

Criteria	Under performance	Business impact
Temperature range 20-21oC	95% compliance	None known
Modulated power supply with peak surge protection	In-line filtering not present	Outage of at least 5 minutes a month



Secured room access	Door always open	Unknown

Table I. Environmental performance criteria.

3.4.2 Policies and procedures

<<state the policies and procedures used for setting of criteria and monitoring of the environmental conditions, refer to manuals where possible>>

3.4.3 Monitoring method

<<state the methods and tools used to monitor performance criteria of the policies and procedures, refer to manuals where possible>>

3.4.4 Reporting details

<<state the reporting completed to ensure performance, refer to manuals where possible>>

3.4.5 Outcomes realised

<<state the outcomes achieved by the reporting, refer to manuals where possible>>

3.5 Integration

3.5.1 Systems integration

<<List the other systems in the business that it integrates with and how the integration is achieved.>>

System	Purpose	How integration is achieved
Billing 3	Billing system for water discharge in pipes.	At the end of the day, export a data file and load into application.



Table II. Systems integration.

3.5.2 Internet integration

<<State the integration of the system to the Internet, e.g. can not integrate to Web or need to write a set of ODBC drivers then use any SQL system like Cold Fusion.>>

3.5.3 Business integration

3.5.3.1 Complaints

3.5.3.1.1 Procedures

<<state the procedures used for complaint lodging and resolution, refer to manuals where possible>>

3.5.3.1.2 Monitoring method

<<state the methods and tools used to monitor complaints, refer to manuals where possible>>

3.5.3.1.3 Reporting details

<<state the reporting completed to ensure resolution of complaints, refer to manuals where possible>>

3.5.3.1.4 Outcomes realised

<<state the outcomes achieved by the reporting, refer to manuals where possible>>

3.5.3.2 Training

3.5.3.2.1 Conducted

<<state the ongoing training conducted, refer to manuals where possible>>

3.5.3.2.2 Monitoring method

<<state the methods and tools used to monitor training outcomes, refer to manuals where possible>>

3.5.3.2.3 Reporting details

<<state the reporting completed to ensure success of training, refer to manuals where possible>>



3.5.3.2.4 Outcomes realised

<<state the outcomes achieved by the reporting, refer to manuals where possible>>

3.5.3.3 Procedures**3.5.3.3.1 Policies and procedure s**

<<state the policies and procedures implemented for business integration, refer to manuals where possible>>

3.5.3.3.2 Monitoring method

<<state the methods and tools used to monitor the adoption and implementation of the policies and procedures, refer to manuals where possible>>

3.5.3.3.3 Reporting details

<<state the reporting completed to ensure adoption, refer to manuals where possible>>

3.5.3.3.4 Outcomes realised

<<state the outcomes achieved by the reporting, refer to manuals where possible>>

3.6 Performance q uality**3.6.1 Operational deta ils****3.6.1.1 Procedures**

<<state the procedures used for quality assurance, refer to manuals where possible>>

3.6.1.2 Monitoring method

<<state the methods and tools used to monitor quality assurance, refer to manuals where possible>>

3.6.1.3 Reporting details

<<state the reporting completed to ensure quality assurance, refer to manuals where possible>>

3.6.1.4 Outcomes realised

<<state the outcomes achieved by the reporting, refer to manuals where possible>>

3.6.2 Performance criteria**3.6.2.1 Criteria specificatio n**

<<List performance criteria, how the system achieves it and the impact on the business of not achieving>>

Criteria	Under performance	Business impact
----------	-------------------	-----------------



Up time of 99%	down 50% of the time	Lost 3 major clients and \$20,000,000
Response time of 4 seconds	5% of the time the response time is inadequate	No ones estimated the loss of business
Support 150 concurrent users	Only have 30 users	None
Removal of 5 staff through cost saving	Not achieved	Had to double staff to cope with the system

Table III. System performance criteria.

3.6.2.2 Policies and procedures

<<state the policies and procedures used for setting of criteria and monitoring of performance, refer to manuals where possible>>

3.6.2.3 Monitoring method

<<state the methods and tools used to monitor performance criteria of the policies and procedures, refer to manuals where possible>>

3.6.2.4 Reporting details

<<state the reporting completed to ensure performance, refer to manuals where possible>>

3.6.2.5 Outcomes realised

<<state the outcomes achieved by the reporting, refer to manuals where possible>>

3.6.3 Business impact

<<state the impact upon the business of the results from the quality survey.>>

<<e.g. we employ 2 extra people at \$50,000/year each to enter data twice>>

3.7 Data quality

3.7.1 Introduction

Quality assurance of data can be a long and complex task. The purpose of this part of the question is to establish some basic information about the data quality through a series of related questions. A detail report of data quality is beyond the scope of this document.



3.7.2 Record criteria

For each field state the criteria used for measuring the attributes shown in Table IV. To complete the information in the table, enter a list of fields for the system (don not include database structure fields) and enter details for each of the criteria. The suggested criteria may need to be changed to reflect specific systems. If the quality of the system can not be described by three criteria, then problems exist.

- Accuracy: statement on the correctness of the record.
- Currency: statement of the version or the last time records were checked.
- Precision: the accuracy to which information is measured, e.g. transactions may be timed to the second.

Field name	Accuracy	Currency	Precision
Age	1 year	Record is verified once a year	Nearest year
Address 1	Verified against state codes	Record is verified each time a bill is not paid	N/A
Billing interval	1s	N/A	0.5s
Inventory quantity	+/-1	Annual stock count	N/A
Item description	6 digit code	Checked each time stock is ordered	N/A

Table IV. Attribute quality criteria.

3.7.3 Record information

A random sample population of the information in the system is tested against the specified criteria. Use the following instructions to assist in completing the table.

- Enter the number of records in the system.
- Enter the quality criteria from the above table.
- Enter the list of fields from the above table.
- State the number of records subjected to survey. Ensure a random sample of a representative population
- State the number of fields in the system, do not include database structure fields.
- Enter the number of mandatory fields allowed in the system (a low number is a cause for concern).
- For the records sampled state the number of null fields (many null fields is a cause for concern)
- For each field, state the number of records in the sample that meet the criteria.



Record information				
Number of records		23		
Number of fields		12		
Number of mandatory fields		5	Percentage	41.67
Number of null fields		300	Percentage	125.00
Number of records sampled		20	Percentage	86.96
Field name	Number null	Number accuracy	Number currency	Number precision
Name	2			
Address 1	3			
Address 2	5			
Address 3	2			
Country	2			
Amount	100			

Table V. Record information.

3.7.4 Business impact

<<state the impact upon the business of the results from the quality survey.>>

<<e.g. 50% of billing records were found not to meet the specified criteria or no criteria has been established so we don't know the quality of the data>>

3.8 Backup

3.8.1 Procedure

<<state the procedure used for backup of system, refer to manuals where possible>>

3.8.2 Monitoring method

<<state the methods and tools used to monitor backup procedures, refer to manuals where possible>>

3.8.3 Reporting details

<<state the reporting completed to ensure adherence to procedures, refer to manuals where possible>>

3.8.4 Outcomes realised

<<state the outcomes achieved by the reporting, refer to manuals where possible>>

3.8.5 Business impact

<<state the loss or impact to the organisation, either qualitative or quantitative, of not, or of having, a backup procedure, refer to manuals where possible>>



3.9 Recovery

3.9.1 Procedure

<<state the procedure used for recovery of information, refer to manuals where possible>>

3.9.2 Monitoring method

<<state the methods and tools used to monitor recovery performance, refer to manuals where possible>>

3.9.3 Reporting details

<<state the reporting completed to ensure adherence to procedure, refer to manuals where possible>>

3.9.4 Outcomes realised

<<state the outcomes achieved by the reporting, refer to manuals where possible>>

3.9.5 Business impact

<<state the loss or impact to the organisation, either qualitative or quantitative, of not having or through the recovery procedure, refer to manuals where possible>>

3.10 Archiving

3.10.1 Offsite archiving

3.10.1.1 Procedure

<<state the procedure used for offsite archiving, refer to manuals where possible>>

3.10.1.2 Monitoring method

<<state the methods and tools used to monitor archiving procedures, refer to manuals where possible>>

3.10.1.3 Reporting details

<<state the reporting completed to ensure adherence to procedures, refer to manuals where possible>>

3.10.1.4 Outcomes realised

<<state the outcomes achieved by the reporting, refer to manuals where possible>>



3.10.2 Onsite archiving

3.10.2.1 Procedure

<<state the procedure used for onsite archiving, refer to manuals where possible>>

3.10.2.2 Monitoring method

<<state the methods and tools used to monitor archiving procedures, refer to manuals where possible>>

3.10.2.3 Reporting details

<<state the reporting completed to ensure adherence to procedures, refer to manuals where possible>>

3.10.2.4 Outcomes realised

<<state the outcomes achieved by the reporting, refer to manuals where possible>>

3.10.3 Expiry

3.10.3.1 Procedure

<<state the procedure used for archive expiry, refer to manuals where possible>>

3.10.3.2 Monitoring method

<<state the methods and tools used to monitor archive expiry procedures, refer to manuals where possible>>

3.10.3.3 Reporting details

<<state the reporting completed to ensure adherence to procedures, refer to manuals where possible>>

3.10.3.4 Outcomes realised

<<state the outcomes achieved by the reporting, refer to manuals where possible>>

3.11 Security

3.11.1 Environmental

If environment security is not covered in the section on the operating environment then provide details here.



3.11.2 Unauthorised editing

3.11.3 Introduction

Use this section of the document to establish the risk to the client of unauthorised editing of information. Ability to edit assumes unauthorised distribution. By monitoring unauthorised editing, authorised editing is also monitored.

3.11.3.1 Procedure

<<state the procedure used for unauthorised editing control, refer to manuals where possible>>

3.11.3.2 Monitoring method

<<state the methods and tools used to monitor unauthorised editing, refer to manuals where possible>>

3.11.3.3 Reporting details

<<state the reporting completed to control unauthorised editing, refer to manuals where possible>>

3.11.3.4 Outcomes realised

<<state the outcomes achieved by the reporting, refer to manuals where possible>>

3.11.3.5 Estimate the loss to the business

<<state the loss to the organisation, either qualitative or quantitative, of unauthorised editing, refer to manuals where possible>>

3.11.4 Unauthorised access

3.11.4.1 Introduction

Use this section of the document to establish the risk to the client of unauthorised access. Access in this context is considered to include distribution. By monitoring unauthorised access, authorised access is also monitored.

3.11.4.2 Procedure

<<state the procedure used for unauthorised access control, refer to manuals where possible>>

3.11.4.3 Monitoring method

<<state the methods and tools used to monitor unauthorised access, refer to manuals where possible>>

3.11.4.4 Reporting details

<<state the reporting completed to control unauthorised access, refer to manuals where possible>>

3.11.4.5 Outcomes realised

<<state the outcomes achieved by the reporting, refer to manuals where possible>>



3.11.4.6 Estimate the loss to the business

<<state the loss to the organisation, either qualitative or quantitative, of unauthorised access, refer to manuals where possible>>

4 History reconstruction

4.1 Introduction

The focus of the document this far has been on describing an individual system but yet the success of a business is in the integration and standardisation between systems. Use this section of the document to view the business from a customer's perspective.

To do these create a series of scenarios that business may encounter and determine the ease with which a history of operation can be reconstructed. Estimate the risk to the business of not being able to do this. The subsequent sections of the document show 3 examples of typical scenarios. Use these as a guide but modify according to client needs.

4.2 Court case

4.2.1 Scenario

A company is being sued and they need to construct a history of the customer and the transactions with the business. The dispute runs over a 3 year period and requires all relevant information to be collated, chronicled and the series of events established.

4.2.2 Procedure and policy

<<state the policies and procedures used to achieve the scenario, refer to manuals where possible>>

4.2.3 Information sources

<<list what information would be required and where it would be obtained, state the access time where possible>>

Information required	System accessed	Time to retrieve information
Customers address	contact database	10 minutes
All e-mails between company and client	23 desktop e-mail packages	If exist, 3 hours per desktop
Billing records for time period	Billing system and archive	5 days

Table VI. Information required and access.



4.2.4 Lost information

<<list what information could not be found or not found in the required time>>

4.2.5 Business impact

<<state the impact upon the business of not completing the scenario>>

4.3 Customer dispute

4.3.1 Scenario

A customer is in dispute with a company over a billing issue. The history of the customer needs to be created so that not only can the dispute be resolved but resolved on the most favourable terms. All relevant information to be collated, chronicled and the series of events established.

4.3.2 Procedure and policy

<<state the policies and procedures used to achieve the scenario, refer to manuals where possible>>

4.3.3 Information sources

<<list what information would be required and where it would be obtained, state the access time where possible>>

Information required	System accessed	Time to retrieve information
Customers address	contact database	10 minutes
All e-mails between company and client	23 desktop e-mail packages	If exist, 3 hours per desktop
Billing records for time period	Billing system and archive	5 days

Table VII. Information required and access.

4.3.4 Lost information

<<list what information could not be found or not found in the required time>>

4.3.5 Business impact

<<state the impact upon the business of not completing the scenario>>



4.4 Statutory reporting

4.4.1 Scenario

The government requires companies to report statutory information to them about various business activities.

4.4.2 Procedure and policy

<<state the policies and procedures used to achieve the scenario, refer to manuals where possible>>

4.4.3 Information sources

<<list what information would be required and where it would be obtained, state the access time where possible>>

Information required	System accessed	Time to retrieve information
Customers address	contact database	10 minutes
All e-mails between company and client	23 desktop e-mail packages	If exist, 3 hours per desktop
Billing records for time period	Billing system and archive	5 days

Table VIII. Information required and access.

4.4.4 Lost information

<<list what information could not be found or not found in the required time>>

4.4.5 Business impact

<<state the impact upon the business of not completing the scenario>>



5 Signoff

All participants need to signoff on there participation. Be sure that all of the questions answered by the participant are listed. Division may be business group.

The following participants from Commonwealth Bank have provided the respective information for inclusion within this document and hereby agree that the information provided is correct.

Name	Division	Questions answered	Signature	Date
Keith Sherringham				23/12/01

