



PROJECT **PERFECT**
Pty Ltd

Quality Management User Guide

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Document Origin

No.	Author	Department
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Change History

Version	Date	Changes
1.0	27/2/08	Initial Version

Definitions

Scope of this document

This document covers quality within a project.

Scope Exclusion

This document does not cover testing. Testing is covered in a separate User Guide.
Whilst the capture of metrics is covered in this User Guide, how those metrics are used to improve quality is not covered.

Quality Definitions

There are numerous definitions of quality:

- "Quality is fitness for use" - J.M. Juran
- "[Quality is] meeting or exceeding customer expectations at a cost that represents a value to them." - H. James Harrington
- "Quality should be defined as surpassing customer needs and expectations throughout the life of the product." - Howard Gitlow and Shelley Gitlow

The three key components of quality are:

- Meeting customer needs
- At a cost (time & money) that represents value
- Over the life of the product

Project Quality – Business Perspective

From a business perspective, project quality is usually judged on the following criteria:

- Was the project completed on time?
- Was the project completed within budget?
- Did the system meet my needs when it was delivered?
- Is it stable?

Project Quality – Technical Perspective

From a technical perspective, project quality is usually judged as:

- Does the system comply with corporate standards for such things as user interface, documentation, naming standards etc.?
- Is the technology stable?
- Is the system well engineered so that it is robust and maintainable?

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Definitions, Continued

Quality Materials	“Quality Materials” are the artifacts used within an organisation to assist a Project Manager improve quality in the project e.g. Templates, Standards. These materials are applied through “Quality Events”.
Quality Events	“Quality Events” are how the “Quality Materials” are applied to a project . They are the activities undertaken using “Quality Materials” to improve the quality of the project.
Quality Plan	A plan as to how and when “Quality Events” and “Quality Materials” are applied to a project.
Quality Control	“Quality Control” is the implementation of the “Quality Events” in the “Quality Plan”.
Quality Assurance	QA is an umbrella term. It refers to the processes used within an organization , to verify that deliverables are of acceptable quality and that they meet the completeness and correctness criteria established. QA does not refer to specific deliverables. <ul style="list-style-type: none">• The preparation of a "Quality Plan" for a project is part of QA• The development of standards is part of QA• The holding of a "Quality Event" is part of QA
Quality Metrics	“Quality Metrics” are statistics captured during the various activities undertaken as part of “Quality Assurance”. Metrics are captured to: <ul style="list-style-type: none">• Identify areas where quality improvements can be made• Measure the effectiveness of quality improvement activities
Continuous Quality Improvement	Use of captured metrics, and lessons learnt to continually improve quality. They are the main reason for capturing statistics around quality.

Quality Characteristics

What is not Quality

Rework is not part of quality. Rework is the rectification of problems associated with quality

Quality Outcomes

The reason for implementing quality procedures is to deliver a set of outcomes for the organisation. These include:

- Deliverables that better meet customer needs
- Deliverables that are more reliable and supportable hence reduced support costs
- Faster delivery involving less rework
- Continuous improvement in production of deliverables

Well Engineered versus Correct

The purpose of quality assurance is to ensure outputs of an organisation are both well engineered and correct.

- Well engineered means the construction is sound and reliable.
- Correct means the end results are an accurate reflection of the requirements.

Quality Materials

Types of Material	There are several types of material that can be used for Quality Assurance. We outline the types below. The actual materials that make up each type will be added to a register in the Project Office. Contact the Project Office for the most up to date list.
Standards	“Standards” are instruction documents that detail how a particular aspect of the project must be undertaken. There can be no deviation from “Standards” unless a formal variation process is undertaken, and approval granted.
Guidelines	Unlike “Standards”, “Guidelines” are not compulsory. They are intended to guide a project rather than dictate how it must be undertaken. Variations do not require formal approval.
Checklists	“Checklists” are lists that can be used as a prompt when undertaking a particular activity.
Templates	“Templates” are blank documents to be used in particular stages of a project. They will usually contain some examples and instructions. They should be used in conjunction with the instructions in the relevant “User Guide”.
Procedures	“Procedures” outline the steps that should be undertaken in a particular area of a project such as managing risks, or managing time.
User Guides	“User Guides” provide the theory, principles and detailed instructions as to how to apply the procedures to the project. They contain such information as definitions, reasons for undertaking the steps in the procedure, and roles and responsibilities. They also have example templates.
Example Documents	These are examples from prior projects that are good indicators of the type of information, and level of detail that is required in the completed document.

Quality Events

Expert Review Review of a deliverable by a person who is considered an expert in the area. For example, a review of a data model by a senior DBA. The person may not currently hold a position (e.g. currently be a DBA) but has expert knowledge in the area.
This type of review is good when the focus is on accuracy of content rather than of structure.

Peer Review Review of deliverables by one's peers.
Peer reviews are better suited where the emphasis is on structure rather than content. A peer review will focus on ensuring the deliverable is well engineered.
Neither an "Expert Review" nor a "Peer Review" is exclusively focused on content or structure. They each however, have a different emphasis.

Multi person Review A review carried out by several people is likely to pick up more points however it does bring the difficulty of trying to reconcile different viewpoints. It is best undertaken when the purpose is to gain agreement between different stakeholders.

Walk-through A walk-through is a useful technique to validate both the content and structure of a deliverable. Material should be circulated in advance. If particular participants have not done their homework, they should be excluded from the walk-through. Too much time can be wasted bringing one person up to speed in a walk-through.

Formal Inspection A formal inspection is a review of a deliverable by an inspector who would typically be external to the Project Team. The inspector captures statistics on suspected defects. It is a useful technique for use with documentation. The original process was developed by Unisys, is used by IBM and has been adapted to a more simplified process

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Quality Events, Continued

Formal Inspection - Types of Defect

Types can be:

Type	Description
Extra	The information is covered elsewhere in the document
Missing	Information is not in the document
Unclear	The information does not make sense
Inconsistent	The information contradicts other information in the document
Wrong	The information is incorrect
Technical Error	The information is technically incorrect
Mechanical Error	Typo, missing word, grammar

Formal Inspection – Impact of Defect

Each suspected defect is classified as “Critical”, “Major”, “Medium” or “Minor”.
The explanation of the classifications is set out in the table below.

Impact	Description
Critical	The defect threatens the accuracy, validity, operation or effectiveness of the deliverable. Rework will affect the majority of the deliverable. Code to be discarded and start again. Document conclusions are incorrect, change from using DFD to Functional Analysis
Major	The defect is significant and will require rework to at least 25% to 50% of the deliverable or will cause a major change in the operation, presentation, direction or structure of the deliverable. e.g. Executive Overview to be completely rewritten, module to be re-coded, Screen layout to be completely changed, document to be re-organised into several documents
Medium	The defect has some effect on the document. It will require some small change to the operation, presentation, direction or structure of the deliverable. e.g. Section requires rewriting, some code does not meet naming conventions, differences in important dates quoted in a document

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Quality Events, Continued

Formal Inspection – Impact of Defect (continued)

Impact	Description
Minor	The defect is of a trivial nature. e.g. Typo, grammar, minor formatting problem, additional comments in code

Standard Audit A "Standard Audit" is carried out by a person who is only focused on ensuring the deliverable meets a particular standard(s).

Process Review In this case a "Process" is reviewed to ensure all necessary actions are being undertaken, information recorded, and procedures followed. A "Process Review" is useful to validate the existing processes in an organisation. For example, modification to an existing IT system may be based on the assumption an existing business process is being followed. If the business process is either not being followed or is different, the modification to the IT system may have unexpected results.

Creating a Quality Plan

When to create A “Quality Plan” should be created at the start of the project. When particular deliverables are identified, quality events should be scheduled to ensure the deliverables meet quality expectations.

When to hold the Quality Event Most “Quality Events” are held just prior to the completion of the delivery. If however there are long development lead times for a deliverable, it might be sensible to hold earlier “Quality Events”.
For example, if development of code for a particular module will take 10 weeks, it may be worth holding a code inspection after 4 weeks to identify any problems early and reduce rework.

Contents of the Quality Plan The quality plan should identify:

- The deliverable to be inspected or the process to be reviewed
- The type of “Quality Event”
- The “Quality Material” being used (if any)
- The purpose of the event e.g. “Ensure the report is well structured”

An example “Quality Plan” is included in the appendix.

Details of each Quality Event For each “Quality Event” identified, the following information should also be recorded.

- The timing
- The participants
- The supporting material to be provided
- The format of the feedback (verbal, formal report, handwritten comments)
- Action to be taken after the feedback
- Statistics to be captured

An example “Quality Event” is included in the appendix.

Scalability

Scalability Guideline

There are no hard and fast rules for scalability. The number of events should be discussed with IT Management during the planning stage of the project. At a minimum two events should be scheduled:

- Review of the requirements
 - Review of the deliverable
-

Considerations

The following should be considered in working out how many "Quality Events" should be scheduled.

- Complexity of the project
 - The experience of the participants
 - Number of people involved
 - Number of programs involved
 - How mission critical is the development
 - Clarity of the vision and requirements
 - Length of the project
 - Type of development (Iterative or waterfall)
 - Number of deliverables (both internal and external)
-

Appendix A - Example Quality Plan

Project Name XYZ Project

Example:

Deliverable	Quality Event	Quality Materials	Purpose
Preliminary Business Case	Expert Review	<ul style="list-style-type: none">• Template for Business Case• Approved Business Case for Project ABC	Ensure the information is accurate and well constructed prior to submission to Steering Committee
Project Definition	Walk-through	<ul style="list-style-type: none">• Template for Project Definition	Review early draft for completeness
	Peer Review		Review final draft for completeness and construction
Database Design	Expert Review	<ul style="list-style-type: none">• Standard for Database Design	Compliance with standard General accuracy
Etc			

Appendix B - Example Quality Event

Deliverable**Instructions:**

Identify the type of deliverable

Example:

Preliminary Business Case

Action Event**Example:**

Expert Review

Timing**Instructions:**

Note when the event is to take place. If the event is to be held regularly, note the dates.

Example:

2 weeks before presentation to Steering Committee

Participants**Example:**

P. Manager and B. User who prepared the Business Case.

Review will be carried out by I.M. Xpert who is the GM of the relevant Business Area.

**Supporting
Materials (inc.
Quality
Materials)****Instructions:**

Identify any supporting material that will be used such as standards, example documents and templates

Example:

- Template for Business Case
 - Approved Business Case for Project ABC
 - Preliminary Business Case for this project
 - Draft RFI
-

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Appendix B - Example Quality Event, Continued

**Feedback
Format**

Instructions:

Outline how the results of the Quality Event will be passed back to the team.

Example:

Handwritten list of areas for consideration. Debriefing to be held after the review.

**Action after
Feedback**

Instructions:

After the review has taken place, what will happen then?

Example:

Comments to be considered and if thought of value, they will be incorporated into the Business Case.

**Statistics to be
Captured**

Instructions:

If any metrics are to be captured, what are they?

Example:

- Number of issues raised.
 - Number of issues actioned
-

Appendix C - Example Quality Inspection Report

Purpose

If the “Quality Event” is a formal inspection, use the report attached.

Project Name

Quality Inspection Report

Prepared By:
Version 1.0
dd/mm/yy

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Document Origin

No.	Author	Department
1		

Change History

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1.0		Initial Version

Inspection Overview, Continued

Schedule for Rework

The schedule identifies who will complete the rework and sets the deadline for completion of rework.

Instructions:

This section would normally be completed after reviewing the inspection report. Typically the Project Manager would complete the section with the assistance of other relevant team members. It would also be appropriate to involve the Inspector in case there was any misunderstanding regarding particular items. List only those defects, which will be addressed.

Example:

Section	Description	Assigned To	Due Date
1	More detailed description of the Business Problem to be provided by the Customer Representative	J. Smith	dd.mm.yy
All	Errors relating to misspelling and grammar.	B. Brown	dd.mm.yy
7 & 9.	Section Description of the process for selecting the vendor is covered in both areas and needs to be consolidated.	P. Manager	dd.mm.yy

Specifically excluded from Rework

Instructions:

If there are significant items that are being excluded, the item and the reason should be stated. If however the item is of a minor nature, it need not be mentioned. For example if the inspector offered an opinion regarding minor changes to the font size of a particular table, and it was decided to not include the changes, it would not be worth mentioning.

Examples:

- Section 1. Inspection recommended more details on the content of the proposed RFI. The Project Team feels this is adequately covered in the draft RFI document currently being discussed with the Sponsor. As we do not anticipate the draft RFI will be approved for at least another month, and we want to issue this document now, we will not change this section.

Logging Sheet

Instructions The person carrying out the inspection would normally complete this logging sheet.

Legend Type is classified as:

- E – Extra
- W – Wrong
- M – Missing
- I – Inconsistent
- U – Unclear
- T – Technically Error
- M – Mechanical Error

Examples:

Section	Suspected Defect	Type							Severity
		E	M	W	I	U	T	M	
1.3	Exec Overview does not mention the major recommendations		X						Major
2.5	Typo. Paragraph 2 Line 1 “responsibel”							X	Minor
2.5	Mention of the start date of 1 June. Everywhere else it is 15 June				X				Major
Etc.									

Appendix D - Example Walk-through Form

Instructions

The attached example is for a "Walk-through Form" from a database design.

WALK-THROUGH FORM

Database Design Review

Date 15.01.03

Project 123456 - Order Entry System

Product Name Database design

Type Document / Requirements / Business Design / **Technical Design** / Program Design / Code / Test / Other

Item	Points raised – comments, follow up actions	Resp.	Due
1	Relationship between tblClient and tblOrder is missing	MV	01.02.03
2	Need another table to record the method in which the order was placed (phone, fax, email)	MV	02.02.03
3	Look at using link to product table in system ABC	JS	01.02.03
4	Tables required to store information on time of order need to be developed	MV	15.02.03

Satisfactory

This product is satisfactory and no further walk-through is required.

[NAME] Date

[DELIVERABLE OWNER]

OR

Not Satisfactory

This product is NOT satisfactory and further walk-through is required.

J. Smith Date

[DELIVERABLE OWNER]
