

# Australian/New Zealand Standard

## Value management



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This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee OB/6, Value Management. It was approved on behalf of the Council of Standards Australia on 27 January 1994 and on behalf of the Council of Standards New Zealand on 7 March 1994. It was published on 11 April 1994.

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## Value management

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First published as Joint Standard AS/NZS 4183:1994.

PUBLISHED JOINTLY BY:

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## PREFACE

This Standard was prepared by the Joint Australia/New Zealand Standards Committee OB/6 on Value Management.

The purpose of this Standard is to provide national guidelines for the application of Value Management principles in construction, manufacturing and service industries.

The objective is to provide users with a Value Management framework, by defining terms, establishing essential elements for conducting a Value Management study and clarifying roles and responsibilities.

This Standard also seeks to educate and inform the consumer about Value Management and thereby reduce confusion and protect the broad community.

A secondary aim is to promote the use of Value Management techniques and provide an impetus to innovation in the application of, and in the further development of, Value Management.

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## FOREWORD

The purpose of this Standard is to provide guidelines to clients and other users for the application of Value Management. This Standard defines terms, establishes the essential elements necessary to achieve effective value management and clarifies roles and responsibilities, but is not specifically intended to play the role of a handbook or training manual.

Value Management is a structured, systematic and analytical process which seeks to achieve value for money by providing all necessary functions at the lowest total cost consistent with required levels of quality and performance. The process may be applied to management decision making at any level of an organization and specifically may be applied to projects, products, systems, services or processes.

The concepts outlined in this Standard are equally appropriate for public and private sector applications.

The Value Management process is centred upon a participatory workshop involving a multi-disciplinary, representative group of people working together to seek the best value solution for a particular situation. Three critical success factors in the Value Management process have been identified and addressed in this Standard. These factors are the methodology employed, the commitment of those involved and the way in which the total process is facilitated and managed.

This Standard recognizes international practice in adopting the Miles\* Job Plan as the core methodology. The term 'value analysis' is frequently used when the Job Plan described in this Standard is applied to existing products or processes. The term 'value engineering' is commonly used when the value techniques are applied at the design stage. Value Management was developed when the Miles methodology was extended to management and administration activities. The term Value Management is generally used for the application of the Job Plan at all levels.

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\* Value analysis techniques were developed in The General Electric Company in the USA in 1947 by Lawrence D Miles, to obtain substantial cost reductions in existing products, using functional analysis to systematically eliminate unnecessary costs without reducing reliability or saleability.

Subsequent use and development of the techniques in the US Navy was called value engineering. Later use of the techniques in the wider areas of management, finance, manufacturing, construction and services now tends to use the term Value Management.



## STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

## Australian/New Zealand Standard

## Value management

## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE** This Standard establishes fundamental terminology and definitions; the application of Value Management; core elements of Value Management; techniques of Value Management and roles and responsibilities.

**1.2 DEFINITIONS** For the purpose of this Standard, the definitions below apply.

NOTE: These definitions are not in alphabetical order for emphasis and commence with the key words in the subject.

**1.2.1 Value Management**—a structured, and analytical process which seeks to achieve value for money by providing all the necessary functions at the lowest total cost consistent with required levels of quality and performance. The Standard uses the term 'Value Management' as being synonymous with the terms 'value analysis' and 'value engineering'.

**1.2.2 Value**—the lowest cost to reliably accomplish a function in accordance with required levels of quality and performance.

**1.2.3 Function**—that which the product, service, project, process or system does to make it work and sell.

**1.2.4 Job Plan**—sequential approach to implementing the core elements of a Value Management Study.

**1.2.5 Study**—the application of Value Management to a product, service, project, process or system.

**1.2.6 Study group/team**—the interdisciplinary group or team of participants, working in close physical proximity and direct communication, and committed to the common goal of working through the Job Plan to successfully bring a Value Management study to completion.

**1.2.7 Facilitator**—a suitably experienced person trained in appropriate methodologies responsible for guiding the team or group through the Value Management Job Plan and for creating a highly motivated climate within a study group/team.

**1.2.8 Value Management brief**—a statement, endorsed by the client that establishes what the study group/team is required to achieve.

**1.2.9 FAST (Functional Analysis Systems Technique) diagram**—a diagram to graphically show the logical relationships and costs of the functions of a product, service, project, process or system.

**1.2.10 Basic function**—the specific reason for which the product, service, process or system was designed and made.

**1.2.11 Secondary function**—the supporting functions which the product, service, process or system performs.

**1.2.12 Total cost**—all costs determined as appropriate to the particular Value Management study.

**1.2.13 Function Analysis**—Verb-noun description of the significant functions of the product, process or system, recognizing that each significant function will be supported by many subsidiary functions, which may need to be considered later in the process.

## SECTION 2 APPLICATIONS

**2.1 GENERAL** Value Management may be applied to management decision making at any level of an organization. Specifically, it may be applied to projects, products, systems, services or processes.

In each of these cases Value Management may be used to examine new schemes as well as existing ones. The process may be applied at any stage in a life cycle of a project, product, system, service or process and may be applied a number of times in that life cycle to ensure continuous value improvement.

It has been demonstrated that the highest potential benefit from Value Management occurs at the earliest stages in the life of a scheme. In particular, benefit is gained where studies are held prior to financial commitments being made or at least prior to scheme implementation. A series of Value Management studies may be held at various times on the same project during concept design and construction/manufacture.

**2.2 APPLICATIONS** Typical applications of Value Management include:

- (a) Construction—
  - (i) project concept;
  - (ii) client brief;
  - (iii) site selection;
  - (iv) design proposals;
  - (v) material selection;
  - (vi) construction programs;
  - (vii) construction methods; and
  - (viii) facility maintenance.
- (b) Manufacturing—
  - (i) product concepts;
  - (ii) client brief;
  - (iii) design proposals;
  - (iv) material selection;
  - (v) manufacturing methods; and
  - (vi) product marketing.
- (c) Systems, services and processes—
  - (i) concepts;
  - (ii) client brief;
  - (iii) design proposals;
  - (iv) implementation procedures;
  - (v) monitoring procedures;
  - (vi) maintenance procedures; and
  - (vii) strategic planning.



- (d) Management decision making in circumstances when Value Management is used as a group/team problem-solving process on issues such as—
- (i) policy formulation;
  - (ii) asset management;
  - (iii) maintenance management;
  - (iv) marketing;
  - (v) administration;
  - (vi) overheads;
  - (vii) capital and recurrent budgets;
  - (viii) organization design;
  - (ix) cycle time management;
  - (x) programming development; and
  - (xi) information technology.

(e) Value Management incentive clauses

A specific use of Value Management is the Value Management incentive clause. Value Management incentive clauses (VMIC) are contract clauses which offer financial incentives to contractors by a sharing of the savings generated by the contractor and by contractor-initiated changes to contract specifications, scope of work or methodology.

Value Management incentive clauses provide a formalized method to encourage contractors to suggest contract changes which reduce the overall cost to the owner. The contractor's reward is a share in the resultant savings.

Such changes, which lead to more economical ways of carrying out the work while still providing the essential functions required by the owner, invariably include the elimination or modification of requirements found to be in excess of actual needs.

Since Value Management is primarily concerned with function, or 'what things actually do', the process has extremely broad potential application to any situation in which value improvement is being sought.

## SECTION 3 ESSENTIAL ELEMENTS

**3.1 INTRODUCTION** To ensure the best possible outcome of a Value Management study, it is necessary to obtain a correct balance of three essential elements. These are—

- (a) core methodology;
- (b) commitment of participants; and
- (c) management of the process.

**3.2 CORE METHODOLOGY** This Standard adopts the sequential approach and uses the core elements of the methodology called the Job Plan, developed by Lawrence D. Miles, requiring a Value Management group/team to systematically follow through the Miles phases, or their equivalents. Table 1, explains the system.

**TABLE 1**  
**CORE METHODOLOGY**

Miles Job Plan phases	Typical equivalent terminology
1 Information	1 Information
2 Analysis	2 Function Analysis
3 Creativity	3 Creative/speculation
4 Judgment	4 Evaluation of options
5 Development	5 Plan/report

The Job Plan is flexible and adaptable, enabling its application over a wide and extensive range of Value Management topics, requiring the Value Management Study group/team to proceed systematically through the following phases:

- (a) *Information phase*—collecting all relevant information such as customer requirements, specifications, details of any constraints or relevant policy decisions, costs involved in proposed or existing project.
- (b) *Analysis phase*—listing significant functions, and where necessary determining the cost of each function, or, in some cases, who is now responsible for performing each function. It may also be considered appropriate to develop a FAST diagram to determine those functions which are to be subjected to more detailed Function Analysis. In other cases it may be considered preferable for the group/team as a whole to decide which functions should be subjected to a more detailed analysis.
- (c) *Creativity phase*—using focused creative lateral thinking processes, list, for the selected functions, the numerous alternative ideas or options for performing existing or proposed functions. A large quantity of ideas (and not solutions) should be generated and recorded at this stage, without any stoppages for judgment or criticism.
- (d) *Judgment phase*—apply analytical judgment to the lists of ideas or options, to select the alternatives which will achieve the necessary functions at lowest total cost, consistent with required levels of quality and performance. Specialists or experts may be called in to assist in deciding the alternatives which will be developed as recommendations.
- (e) *Development phase*—consider the problems involved in implementing the developed recommendations, how they can be overcome, recommend action by whom and by when, and, as required, prepare the Value Management report.

It is necessary that each of these phases be followed. A typical Value Management workshop varies in duration from 1 to 5 days. To this must be added the time taken before the workshop for the facilitator to become familiar with the project and personnel and the time taken after the workshop for reporting and any follow up that may be required.

**3.3 COMMITMENT OF PARTICIPANTS** A Value Management study will only be totally successful when all the personnel involved enable development of a suitable climate in which group/team concern is accepted ahead of personal concern. To this end the facilitator will promote:

- (a) Cooperative behaviour.
- (b) The development of many alternative ways to meet the functional requirements of any element of a project or process; that is, free exchange of new ideas or new ways to solve problems.
- (c) Overcoming resistance to change.
- (d) Adherence to Job Plan and time constraints.

Participants must become involved in the full scope of the study and not be limited to concern for their own sectional interests.

### **3.4 MANAGEMENT OF THE PROCESS**

- (a) *General* It is essential that top levels of management and key individuals be familiar with the process, be committed to its introduction and implementation, know what to expect from a study, and provide the necessary resources and support. The Value Management brief and objectives must be approved by the top level executives or key individuals concerned, and agreement reached that participants may not be withdrawn during the study. Executive support ensures timely resource approvals, staff availability and committed participation.
- (b) *Management* In preparation for a Value Management study, a Value Management brief is prepared, study objectives agreed, suitable group/team participants selected and an experienced facilitator appointed. Selection of the members of a Value Management group/team will depend on the subject of study, with the number of participants typically varying from 4 to 20, and in some cases more than 20. It is necessary that key individuals and participants be familiar with the process, be committed to its implementation and know what to expect from a study.

A Value Management group/team may comprise stakeholders, users, suppliers or multi-disciplinary specialists, with some being involved full-time and others possibly called in at appropriate times during the study.

In group/team selection, it is essential to select the best available experienced members so that their recommendations will have credibility. A program for the management of the study must be prepared showing the activities involved, the people involved and the proposed time by which each activity is to be completed.

The report resulting from the study must include an action plan showing deadlines and who has the responsibility for its implementation. This will enable monitoring of the management of the Value Management process, and the outcome.

- (c) *Workshop management and facilitation* Workshop facilitation plays a pivotal role in the Value Management process. While some facilitation skills will be common to all Value Management Studies, other facilitation skills will only be called for in certain situations such as when large groups/teams are involved.

The facilitator should be independent of the group/team with whom the study is being conducted and should promote a constructive group/team spirit, encourage cooperation of all participants and engender and maintain enthusiasm, while not unduly influencing decisions or dominating activities.

In order to perform this pivotal role, the facilitator must have a thorough knowledge of Value Management processes, procedures and techniques and should demonstrate competence in a wide range of skills including:

- (i) Group/team management skills.
- (ii) Communication skills.
- (iii) Analytical skills.
- (iv) Interpretation skills.
- (v) Questioning skills.
- (vi) Lateral thinking skills.

## SECTION 4 VALUE MANAGEMENT PROCESSES AND TECHNIQUES

**4.1 INTRODUCTION** The Value Management methodology requires the facilitator to employ processes and techniques to ensure the group/team achieves the necessary degree of analysis, innovation, ideas generation, evaluation and selection.

One technique (Function Analysis) is unique to Value Management. The skilled facilitator will also draw on more generally applicable techniques for team building, group decision making and management as appropriate for the particular situation.

**4.2 THE PROCESSES AND TECHNIQUES** Table 2 below, shows typical objectives, questions, activities and techniques for each of the Job Plan phases.

**TABLE 2**  
**OBJECTIVES, QUESTIONS, ACTIVITIES AND TECHNIQUES**

Phase	Typical objectives	Typical questions	Typical activities/techniques
Information	Confirm VM objective Clarify assumptions Provide information base Set scope of study	What is VM purpose? What is rationale? What is timetable?	Presentation Graphics Cost, energy, area models Pre-reading Life cycle costs
Analysis	Rationalize data Clarify functions Understand system links Test parameters Select high result functions	What does it do? What does it cost? What must it do? What are performance criteria? What are quality criteria?	Function Analysis FAST diagram Function hierarchy Priority matrix
Creativity	Generate alternative ideas Gain multi-discipline input Maintain non-judgmental environment Encourage the unconventional	What are the alternatives? What else satisfies function?	Lateral thinking Creative thinking Sub-topic focus Sub-group facilitation
Judgment	Assess and cull ideas Promote further options Focus on solutions Target value improvements Promote communications Seek group/team consensus	What do alternatives cost? What alternatives are functional? What ideas link together? Acceptability of options?	Rating/weighting Life cycle costs Multidisciplinary input Group/team interaction Common/corporate sense
Development	Refine improvement options Document rationale Present outcomes and recommendations Engender ownership	What are the value improvements? Why change from status quo? What further actions are needed? What decisions are required?	Cogent report and executive summary Clear action resolution Coordinate actions Action plan and follow up

## SECTION 5 ROLES AND RESPONSIBILITIES

**5.1 ROLES** The principal roles of parties involved in a Value Management Study are the:

- (a) *Facilitator* The facilitator is the key to assuring that the study is conducted in a manner which includes the essential elements of Value Management and manages the actual workshop session with respect to the Job Plan and in terms of group/team facilitation and action. The facilitator has a responsibility to maintain client confidentiality and to ensure personal ideas and opinions do not influence the study group/team, while still managing the workshop process in accordance with time constraints.
- (b) *Participants* Participants are those who input into the Value Management study. They may include—
  - (i) *client*—the proponent of the Value Management study and responsible for endorsement of the study objectives and for progressing and monitoring the outcomes;
  - (ii) *task personnel*—those involved with contributing to a solution to the problem at hand and improving value; and
  - (iii) *independents*—usually people with specialist skills in the topic under consideration who are introduced to the workshop, but specifically independent of the task personnel.
  - (iv) *stakeholders*—parties other than the client, with a vested interest in the outcome of the study.

Within these roles, the assigned tasks may vary depending on the nature of the Value Management topic, the scale of the participating organizations and the extent of Value Management activities undertaken by the parties. In some cases the facilitator may take on all arrangements solely, and that can occur whether the role is taken by an in-house resource or external consultant.

**5.2 RESPONSIBILITIES** A number of activities are generally necessary prior to the conduct of a workshop session. Responsibility for these, including the activities listed below, should be clearly assigned in the manner described thereunder—

- (a) a brief for facilitator, scope of work;
- (b) format for study;
- (c) venue and dates confirmation;
- (d) identification of stakeholders/decision makers;
- (e) clarification of objectives of Value Management study (including the basis of agreement with client);
- (f) agreement about the total cost appropriate to the particular Value Management study;
- (g) selection and invitation of participants;
- (h) preparation of necessary data for workshop session;
- (i) development of an agenda; and
- (j) briefing participants for the information stage.

During the actual workshop session the responsibilities are clear. The facilitator must effectively and impartially manage the process and the study group/team and the participants must positively contribute to achievement of the value improvement targets throughout the Value Management process. It is usual for one key participant to have a coordination role in the pre- and post-workshop phases and to act as both a reference point and a team catalyst for continued action.

Executive client support for adequate monitoring and follow-up of study recommendations, action plans and outcomes assures greatest relevance of the efforts made in Value Management.

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