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## Value management in the South African construction industry

### Abstract

The topicality of value management is accentuated by the fact that clients are increasingly insisting that value management should be applied to their construction projects. This could probably be ascribed to the effectiveness of value management as a tool for ensuring value for money. The concept of value management is undoubtedly in the process of finding a niche in the construction industry in South Africa (SA). However, in order for it to become general practice, the fulfilment of certain conditions are considered to be a prerequisite. Quantity surveyors and persons in related professions now have the opportunity to acquire the techniques appurtenant to value management and the skills necessary to render a comprehensive value service to clients.

**Keywords:** Value management, construction industry, South Africa.

### WAARDEBESTUUR IN DIE SUID-AFRIKAANSE KONSTRUKSIEBEDRYF

Die aktualiteit van waardebestuur word benadruk deurdat kliënte al hoe meer daarop aandrings dat waardebestuur op hulle konstruksieprojekte toegepas word. Dit gebeur waarskynlik omdat waardebestuur as 'n doeltreffende beheermeganisme, wat waarde vir geld verseker, beskou word. Die konsep van waardebestuur het sonder twyfel 'n plek in die konstruksiebedryf in Suid-Afrika, maar dan sal eers aan sekere vereistes voldoen moet word voordat dit ten volle geïmplementeer kan word. Die geleentheid is daar vir bourekenaars en aanverwante professies om die tegniek van waardebestuur en die nodige vaardighede onder die knie te kry om sodoende 'n waardediens aan kliënte te lewer.

**Sleutelwoorde:** Waardebestuur, konstruksiebedryf, Suid-Afrika.

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## Introduction

The concept of value management originated in the United States of America (USA) in the 1940's. According to Dell'Isola it was implemented in the construction industry there for the first time in 1963. Thereafter the use of the technique spread rapidly. In 1972 the *United States General Services Administration* introduced a regulation requiring all construction contracts to include a clause that made the application of value management obligatory. *The Society of American Value Engineers* (SAVE) was established in 1959 and since then time value management has become firmly established in various industries. (Dell'Isola, 1988), (Mudge, 1989), (Norton & McElligott, 1995), (Zimmerman & Hart, 1982).

Value management was applied in the United Kingdom (UK) for the first time in 1962 with the primary focus on manufactured goods. The prevailing opinion was that the presence of a professional body such as *The Royal Institution of Chartered Surveyors* (RICS) would facilitate the implementation of value management in the construction industry in the UK. In the eighties, discussions no longer centred around the question whether value management should be implemented in the UK, but rather what the form, by whom and when it should be implemented. (Kelly & Male, 1988), (Kelly & Male, 1991), (Palmer, 1992).

Value management was also beginning to take root in other parts of the world. In Japan, value management was introduced under the auspices of the *Institute of Business and Management* in Tokyo in 1970. In Italy, it was first applied in 1978 by a firm in Milan called *Chemint*. Australia followed in 1979 when *Farmer of Woolworth Inc.* and the *McLachlan Group* implemented value management for the *Australian Mutual Provident*. Practising construction-oriented value engineers are currently to be found in *inter alia* Canada, France, New Zealand, India, Sweden and Germany (Dell'Isola, 1988).

Value management was introduced to South Africa (SA) in 1968 by *Union Carbide*. Van Heerden, an engineer who was part of this group, realised the potential of the process and, after further study in the USA, established his own value management enterprise in SA. *The Value Engineering Management Society of South Africa* (VEMSSA) was established in 1997. At present *VM Services (Pty) Ltd*,

a South African company, uses value management as a process to facilitate decision making (Van Staden, 1991), (VM Services, 1992).

### Definition of value management

There is adequate evidence that the systematic approach of a value management study can lead to meaningful savings in the cost of a construction project. Furthermore, value management ensures that the project (and also the elements thereof) fulfils its function. That in turn leads to an increase in value. The cost involved in a value management study is usually minimal in relation to the total cost of a construction project (i.e. less than one per cent). It has been found that a well-planned value management study can also result in a decrease of five to fifteen per cent of the total cost of (or an increase in the return on) a construction project.

Value management is not completely a new concept. It is currently used as an umbrella term for the various forms of value studies such as value analysis, value engineering, etc. Furthermore, value management is used as an overarching strategy for decision making in all areas of construction, technology, commerce and administration with the purpose of improving performance. (Dell'Isola, 1988), (Joint Australia/New Zealand Standards Committee, 1994), (May, 1994), (VM Services, 1992).

Based on the literature and the research the following comprehensive definition of value management can be proposed:

*Value management is the generic term used for the full spectrum of value techniques. It comprises an overarching strategy that is applied in decision making in all areas of technology, commerce and administration with the aim of improving performance. The improvement of performance is supported by a structured, multidisciplinary, systematic and analytic process in which there is a striving to ensure "value for money" by providing all the necessary functions at the lowest cost without compromising the required quality and performance.*

## Value management as a service to the construction industry in South Africa

In addition to the cost and value criteria, the criterion of functionality is also addressed in value management. Therefore, value management can make an important contribution to the addition of value to a construction project. (Kelly & Male, 1991).

Relatively speaking, value management comprises new techniques that are not yet as entrenched as some techniques related to financing, research, development and other administrative functions. However, the topicality of the service is underlined by the fact that clients are increasingly demanding that value management be applied to particular stages of their construction projects. This could probably be ascribed to the effectiveness of value management as a tool for ensuring value for money (City of New York, 1993), (Green, 1994), (Kelly & Male, 1991).

In order to evaluate the status of the implementation of value management in general and its status in the construction industry in particular, in SA, an attempt was made to conduct interviews with all the organisations in the construction industry that have already applied value management and with all the quantity surveyors that have either applied it or have sufficient knowledge to apply it.

For purposes of drawing comparisons an attempt was made to obtain an indication of the role that value management plays in other industries. Interviews were conducted with several clients of those manufacturing industries that currently apply value management.

Structured personal interviews, based on comprehensive questionnaires, were conducted with 17 clients, of which 10 were in the construction industry and seven in the manufacturing industry and also with 11 quantity surveyors.

The most important findings can be summarised as follows:

1. The concept of value management does have a niche in the construction industry. However, to become general practice, the fulfilment of certain conditions are considered to be a prerequisite. The conditions, in no specific sequence, can be summarised as follows:

- The value manager (facilitator) should have the required skills to apply value management successfully.
  - The benefits and opportunities of value management should first be proved so that it can receive the necessary recognition.
  - The concept of value management should be included in the curriculum for the training of professional consultants, i.e. it should be taught at undergraduate or postgraduate levels or by means of training courses and seminars.
  - Value management should be purposefully marketed as a service.
  - There should be an active controlling body for value management and a structured accreditation process for practitioners should be introduced.
  - Value management should form an integral part of design and construction process.
  - Professional consultants should make a paradigm shift and direct their thinking to function and value and they should not concentrate on cost only.
  - Efforts should be made to obtain the necessary support for value management at the strategic level in the private sector as well as the ministerial level in the public sector.
  - Clients should be prepared to pay for a value management service.
2. Value management is currently implemented to a very limited extent in the construction industry. Clients only currently implement value management to a very limited extent on a structured independent basis to construction projects and/or it is offered as a service by quantity surveyors to an equally limited extent. The reasons are probably as follows: clients are generally not familiar with the technique of value management and the benefits to be derived therefrom. Quantity surveyors generally have the wrong perception of the approach and techniques of value management; and quantity surveyors will have to be equipped with special skills to enable them to offer value management as a professional service.
3. There is a need for a standard method and formal certification for value management. The purpose of a standard method is to provide clients and other users of value management with guidelines for its application. It should

among other matters define terms, describe the essential elements for the efficient implementation of value management and specify responsibilities. For example, Australia and New Zealand have a standard document, entitled Australia/New Zealand Standard: Value Management - AS/NZS 4183 : 1994, that was compiled by the *Joint Australia/New Zealand Standards Committee for Value Management*. The *Value Engineering Management Society of South Africa* (VEMSSA) should consider the compilation of a similar manual.

VEMSSA has an accreditation programme that differentiates between three professional categories, namely Practitioner, Facilitator and Trainer. Particular conditions have to be fulfilled to qualify for each of these categories, for example attendance of a forty-hour training programme, passing of an examination, facilitation of workshops, etc. Although this is considered to be a step in the right direction, the introduction of a compact national standard/training/certification manual will no doubt promote the implementation of value management in the construction industry.

4. The forty-hour value management workshop (and its variations) is the formal approach that has the greatest support. The five phases of the value management job plan, namely *information, analysis, creativity, judgement and development* is followed in the forty-hour value management workshop. The application of this technique is one of the reasons why value management is so unique (Dell'Isola, 1988), (Joint Australia/New Zealand Standards Committee, 1994), (Kelly & Male, 1988), (Mudge, 1989), (Norton & McElligott, 1995), (VM Services, 1992). The value of simultaneous study is rated highly by clients in the construction industry and it is anticipated that this approach will also gain wide acceptance in the South African context.

Generally, quantity surveyors follow one of two variations of the forty-hour value management workshop. In the one case, a value management workshop is presented over two days. The reasons for this arrangement is that there is seldom sufficient time for a workshop that is spread over five days. In the other case, the forty-hour value management workshop is presented with two definitive breaks of seven to ten days

each between the evaluation and development phases and between the development and recommendation phases. The reasons for this arrangement is that it provides sufficient time to consider proposals thoroughly and that updated drawings, estimates and feasibility studies can be prepared.

5. The other practical aspects of value management correspond to large extent with those in other countries. These other practical aspects can be summarised briefly as follows:
  - The members of the value management workshop should comprise the client, design team, other relevant persons and the value management team. The value manager should be an independent person and should definitely not be a member of the design team (May, 1994).
  - Value management should be implemented at specific times over the full period of the construction process. Furthermore, the influence of a value management study is the greatest in the period preceding the completion of the sketch plans and it is generally expected that a value management study should generate a cost saving of between five and fifteen per cent (Dell'Isola, 1988), (Joint Australia/New Zealand Standards Committee, 1994), (Kelly & Male, 1988), (Mudge, 1989), (Norton & McElligott, 1995), (VM Services, 1992).
  - The most important elements of information required for a value management study are clients' preferences and requirements as well as reliable cost data. *Value for money* can only be ensured if the construction project serves its function by fulfilling the client's requirements. An analysis of the cost estimates as well as the life-cycle costs usually indicate the components of a project that represents poor value and/or high costs.
  - A negotiated lump sum appears to be the accepted method for determining the professional fees for a value management study. In the Professional Fees Tariff (1998 issue) of the *Association of South African Quantity Surveyors* (SAQS) provision is made for remuneration on the basis of time spent on the project.
  - The time required to do a value management study does not normally present problems if provision has been made therefore in the overall programme of the project. The disadvantage of the time expended should be set off against the advantage of having a more detailed design at the

sketch-plan stage. It is alleged that, whereas 35 percent of information is normally available at sketch-plan stage, value management enables 50 percent of the information to be available at that stage (Dell'Isola, 1988), (Joint Australia/New Zealand Standards Committee, 1994), (Kelly & Male, 1988), (Mudge, 1989), (Norton & McElligott, 1995), (VM Services, 1992).

## Summary

The concept of value management does have a niche in the construction industry. However, to become general practice, the fulfilment of certain conditions are considered to be a prerequisite. One of the most important conditions is that the value manager should have the necessary skills to apply value management successfully.

The success of value management in the construction industry is dependent on the personal attributes of the value manager. The professionals concerned do have the opportunity to acquire the technique of value management and the required skills to enable them to render a comprehensive value service to clients.

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