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# Introduction

## 1.1 Definition

Value management is the name given to a process in which the functional benefits of a project are made explicit and appraised consistent with a value system determined by the client.

This definition applies to all types of projects irrespective of which sector they come from. For example, the project could be the design and manufacture of a product, the design and construction of a building or infrastructure product, the re-evaluation of an organisational process or the provision of a new or improved service in banking, insurance or public services such as education or health. The factor that makes value management possible is the identification of the project. The client for the project will implicitly or explicitly establish a value system for the project. 'The client' in the context of this definition and for the remainder of this book is the person, persons or organisation responsible for the inception of the project and for its eventual adoption into the client's mainstream business.

This book is focused on construction; however, much of the thinking, philosophy, systems, tools and techniques are as applicable to projects in other sectors.

Maximum value as defined by Burt<sup>1</sup> is obtained from a required level of quality at least cost, the highest level of quality for a given cost or from an optimum compromise between the two. This is a useful definition because it highlights the relationship between value, quality and cost. In this book the definition of value is a relationship between time, cost and the variables that determine the quality the client seeks from the finished project.

## 1.2 Developments in value management

During its first four decades of life, value management developed within the manufacturing sector with only slight leakage into other areas. From the mid-1980s value management has been adopted for use as a value-for-money measure within construction industries of a number of countries. In the UK, the past two decades have seen growth in its development and practice at differing intervention points across a wide range construction project types. Over the

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same period risk management has developed and is often associated with value management as a complementary service. The developments in value management have reached a plateau and therefore this is an opportune time to encapsulate the developments in value thinking in construction and record robust models for the practice of value management in construction. That future developments in value management belong to the service sector is beyond dispute.

### 1.3 Developments in UK construction

A fertile ground was prepared for developments in value management in the UK construction industry during the 1990s by various initiatives that sought to increase the efficiency and effectiveness of the industry.

- The Latham Report<sup>2</sup> spawned the Construction Industry Board, which published influential works on the modernisation of the industry. Value management was seen to be conducive to good practice and received significant coverage.
- The Egan Report,<sup>3</sup> which spawned the Movement for Innovation (M4I), took advantage of web technology to showcase examples of good practice and provided an opportunity for benchmarking through its key performance indicator database. It was influential in shifting a substantial proportion of the construction industry towards more collaborative working, an environment in which value management thrives.
- The *Accelerating Change Report*<sup>4</sup> builds on the work of M4I and has established Rethinking Construction as the primary vehicle for public and private sector construction product and process advancement.
- The Office of Government Commerce has launched the Gateway process<sup>5</sup> which, with the accompanying construction procurement guidance, describes the benefits of good practice in construction procurement in the public sector. Documents describe the place for value management within this process and this is used for illustration later in this book.
- Newer procurement systems based on framework agreements, negotiations, guaranteed maximum price cost plus projects initiated forward-thinking contracts such as PPC 2000, Defence Estates Prime Contract and the NHS ProCure 21 procedure.

The climate of the 1990s in UK construction was therefore right for the development of innovative systems such as value management. The authors' research activity, which began in 1986 funded by the Education Trust of the Royal Institution of Chartered Surveyors (RICS), was boosted in the 1990s by further funding from the RICS and the Engineering and Physical Sciences Research Council. The latter funded a major study into the international

benchmarking of value management practice that resulted in the completion in 1998 of *The Value Management Benchmark* published by Thomas Telford.<sup>6</sup>

The benchmark was the springboard for detailed work into two areas. First, to make clear study styles and their application at particular stages of projects and relate each study style with their most commonly associated tools and techniques. Second, to investigate the concept of quality and value to understand their interrelationship and their application within supply chain thinking. This research work was carried out by the authors or under their supervision using a variety of research methods. Significant findings were made through the grounded theory approach and action research.

#### 1.4 Developments in value management practice

New practices, particularly in management, bring with them the bandwagon effect. A good idea is launched into the marketplace as a new service by an entrepreneurial consultant. Recognising the good idea, other consultants offer the same service. Over time, the service assumes the trappings of standardisation, regulation and institutionalisation; clients buy from the best, which can now be distinguished, and other consultants discontinue the service.

The history of construction project management in the UK can be tracked through landmark projects, such as the construction of the National Exhibition Centre in Birmingham. At this time employment of a consultant project manager was relatively rare but soon became recognised as a better way of doing business. Within a short period of time many consultancy organisations were selling the services of project management. However, over time those unique assets that make project management special have become recognised and the activity of project management has become a specific skill. The Association for Project Management now aims to be the first point of contact for and the national authority on project management, and through the International Project Management Association (IPMA), an international authority. It aims *inter alia* to develop professionalism in project management and to achieve recognised standards and certification for project managers.

Value management activity in UK construction began three decades after the early project management consultancies. Aided by the European SPRINT programme (strategic programme for innovation and technology transfer), a European standard for value management was published, authored by a consortium of the various value associations throughout Europe. A training and qualification system entitled Value for Europe has been configured with its own European Governing Board. Within the UK the Institute of Value Management is currently in the process of developing systems and procedures, ethics and standards and a branch network. The debate on professionalism is reserved for Chapter 10.

### 1.5 The aims and objectives of this book

In writing this book, the authors have brought together and synthesised the background, international developments, benchmarking and action research in value management to provide a comprehensive package of theory and practice. The book is overtly concerned with value management, examining function analysis and team dynamics and also proposing a method for determining the client's value system and quality criteria. The book examines different value management study styles and proposes solutions for various activities at different stages of projects. The book does not probe into the areas of creativity such as those described by De Bono or TRIZ or the fields of operational research and specifically operational hierarchies, nor does it address the whole subject area of group decision support. All these the authors leave to other academic colleagues.

The objectives of the book are to:

- Interpret the results of recent research and specifically the authors' own research into the international benchmarking of value management.
- Record accurately developments in value thinking during past decades, addressing the nature of value, transforming it into definitions and also discussing its alignment with total quality management and performance indicators.
- Examine the complexity of value systems that must be addressed in any VM study and specifically the project value chain and value thread.
- Present a reasoned argument for the development of the client's value system integrating the components of value, cost, time and quality.
- Present function analysis.
- Examine teams, team behaviours and facilitation and to point up practical issues when facilitating value management teams.
- Describe in sufficient detail for practical use a series of VM study styles, tools and techniques.
- Describe an enhanced VM process, argued to be the potential foundation for future 'professional' development.

The authors intend that this book facilitates the gaining of value management knowledge in a number of ways:

- For dipping in and looking for a particular topic use the Contents list at the front of the book or the index.
- For checking on a particular value management tool or technique – the Toolbox (Appendix 1) is provided in alphabetical order.
- For an understanding of the process of value management, Part 1, together with the Appendices, will give sufficient information for the background and development of value management to be appreciated together with the study styles, tools and techniques which combine to form a value management service.

- For an accomplished value management practitioner to benchmark their service, Part 1, Chapter 5, together with the Appendices give the study styles, tools and techniques, described to permit the practitioner to adopt or amend them for their own personal use. Additionally, Part 2 explores the value concepts and describes a method for the construction of the client's value system.
- For a theoretical overview of value the reader is referred to Part 2, in which the authors expose value and break it down into a number of discrete points and themes.
- For the authors' thoughts on the subject of professionalism and ethics, see Part 3.
- The conclusion gives the opportunity for both pulling the book together and 'flying some kites' regarding the future of value management. In this section the authors have prepared three scenarios and have indicated the future of value management within each.

The book is written for a number of audiences: for the competent practitioner who may be looking to benchmark their existing service; for construction clients, consultants and contractors who may be looking to probe value management further; and for the undergraduate or graduate students.

For the undergraduate or graduate student taking a course or module that includes value management this book is designed both to be an exposition of the process and to present some fertile ground for individual thought.

For the researcher, this is the authors' view of the value story thus far. There is still more work to do, particularly in understanding the adding of value to products and services through the value chain as well as the retaining and nurturing of the value thread that starts with the client and weaves its way through the fabric of the project. We have utilised numerous research methods since the mid-1990s including hypothetico deductive, action research and grounded theory based analysis. Techniques have included literature analysis, case study analysis, case vignettes, benchmarking, questionnaire survey, structured and unstructured interviews and the real-time analysis of live projects.

The early years of value management have been dominated by US practice. A watershed occurred in the mid-1980s with the international use of the method in construction. Whilst there has been interest by some countries in taking forward VM by franchising the US methodology, it was also taken and melded into a diverse range of international construction markets and cultures. The chapters in this book weave a rich a tapestry of insights into value thinking drawing threads from North American practice, the International Benchmarking Study of Value Management and a programme of action research undertaken by the authors.

Chapter 2 provides an overview of American value practice and a detailed review of North American study styles, and subsequently introduces insights from Japan, Europe and Australia.

Chapter 3 describes approaches to strategic function analysis together with a functional approach to elements and components, drawing the distinction

between function analysis methods applicable to value management and those applicable to value engineering.

Chapter 4 summarises current thinking in respect of groups and teams, and outlines the characteristics and methods for the facilitation of value management and value engineering teams. The chapter draws a distinction between groups and teams, reflecting that teams, particularly for value studies, are likely to be a *fait accompli* rather than a group of like-minded people or a team crafted to comprise a given set of individual attributes.

Chapter 5 presents a synthesis of Chapters 2, 3 and 4 as an overview of the value process including developments resulting from recent research. Different value study styles are introduced pursuing the argument that the role of the value manager is one of deciding on, structuring and delivering a study style tailored to a particular value problem, be it for a project, project programme, service or organisational function. Irrespective of the type of value problem, it is postulated that the stages in its solution comprise three generic phases:

- The orientation and diagnostic phase
- The workshop phase
- The implementation phase

Chapter 6 discusses value and value systems, defining ‘value management’ and ‘value engineering’ as used by the authors. The chapter argues that value management is business project or investment focused, whilst value engineering, as a subset of value management, is more technical project focused. The chapter sets out a typology of clients to introduce the idea of different client value systems, each of which must be understood in order for a value study to be tailored, and concludes by raising some ethical issues.

Chapter 7 describes the value theory that provides the raw material for the project value chain, drawing on an action research programme of studies that has been underway since the early 1990s. It describes the application of value chain theory to value management and value engineering projects throughout the project life cycle; procurement studies that have encompassed the Private Finance Initiative (PFI), prime contracting, partnering and other procurement routes; and, finally, organisational development projects that have involved setting up team structures, reviewing departmental organisational structures and introducing change into organisations. The chapter also integrates recent work undertaken by Male<sup>7</sup> on supply chain management.

Chapter 8 presents a synthesis of Chapters 6 and 7, drawing together the theories of value, value systems and the project value chain and melding this with the theories of quality, based upon the accepted concept that value is a function of cost, time and quality. Work in total quality management is reviewed along with quality based performance indicators to evolve an operational technique for the discovery of the client’s value system. Three operational techniques are discussed.

Chapter 9 focuses on the service of value management considering the ethics

and professionalism of the value manager in practice. It explores some of the developmental issues now facing value management as a methodology. Building on the earlier chapters it looks at the market settings within which practice takes place, explores occupations, professions and different models of professions, and assesses the implications of this analysis for value management.

Chapter 10 concludes the book and looks, through three scenarios, at the future for value management.

The Appendices contain a value management Toolbox – an alphabetical listing of those tools and techniques commonly associated with value management – together with a case study illustrating the use of the techniques. Further, while there are a number of excellent books on the subject of whole life costing, it was decided in this book to include a short overview of the principles and the principal formulae involved in life cycle costing as a reference since value management is increasingly practised in an environment of whole life appreciation.

The chapters in this book demonstrate the contextualisation of value management within construction and are principally influenced by a UK-style construction culture. The book draws together developments in value management thinking and practice. Value management is still developing; the aim of this book is to draw a line in the sand to denote where we have got to. There's still a way to go.

## 1.6 References

1. Burt, M. E. (1975) *A Survey of Quality and Value in Building*. Building Research Establishment, Garston, Watford, Herts.
2. Latham, M. (1994) *Constructing the Team*. The Stationery Office, London.
3. Egan, Sir John. (1998) *The Egan Report: Rethinking Construction*. Department of the Environment, Transport and the Regions, London, Publications Sale Centre, Rotherham, England.
4. Strategic Forum for Construction (2002) *Accelerating Change*. Rethinking Construction, London.
5. Office of Government Commerce (2003) *Gateway to Success*. The Stationery Office, London.
6. Male, S., Kelly, J., Fernie, S., Gronqvist, M. & Bowles, G. (1998) *The Value Management Benchmark: A Good Practice Framework for Clients and Practitioners*. Published report for the EPSRC IMI Contract. Thomas Telford, London.
7. Male, S. P. (2002) Supply chain management. In: *Engineering Project Management* (ed. N. Smith), 3rd edn. Blackwell Publishing, Oxford.

