

# CHAPTER ONE

## Introduction

### BACKGROUND TO THE USE OF WHOLE LIFE COSTING

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Public service organisations will often base asset purchasing decisions on what they view as providing the best value for money (VfM). This does not necessarily mean that the decision is based purely on price. Qualitative aspects can play a part in the decision, such as the supplier's ability to deliver to certain standards, deliver on time and provide appropriate longer term support, as well as consideration of an asset's effectiveness in the longer term. Furthermore, guidance on VfM makes direct reference to using whole life costing (WLC) where appropriate, while recent guidance on best value points to the need to consider social and environmental value when reviewing service provision.

However, decisions made early on in an investment options or asset purchasing appraisal often focus on the initial capital costs, with limited attention given to the longer term costs arising from this decision process. So, for example, future likely maintenance or energy costs linked to the asset purchase may receive limited attention at the point that key decisions are made.

This often occurs even though longer term operating and maintenance costs can be considerably more than the initial purchase price. Similarly the potential benefits arising through increased income, or other economic, social or environmental improvements, can also involve significantly larger sums than the original purchase costs.

While there is always a balance to be struck between relatively short term goals, current financial constraints and longer term costs and benefits, it is important to recognise the insight that whole life costing (WLC) can provide regarding the impact of a decision taken in the short term, which fails to identify the optimum VfM solution longer term.

So how easy is WLC to use and why isn't it more widely applied across sectors? The basic whole life costing model is relatively straightforward and reasonably easy to understand. The challenges are in ensuring both its potential and its limitations are understood and in incorporating a whole life approach into the organisation's planning and decision-making processes.

For example, some voice concern over the difficulties in forecasting long term costs and income. The future is often uncertain and, for example, technologies and services change over time. Forecasts will vary over time.

But this is to misunderstand what whole life costing is about. It is not about perfect forecasts of long term cash flows. Financial planning and forecasting often involves estimating and, in some cases, best 'guesstimates'. WLC is the same. Certainly good reliable data should be and is involved but WLC is a process that is concerned with assessing and comparing the range of

existing options in a way that brings into consideration the lifetime cost/benefit implications of the initial purchase decision, but based on current information available.

This guide aims to provide the reader with a grounding in the fundamentals of WLC in order to better understand its potential as an aid to improving long term VfM. It also provides a comprehensive understanding of cost drivers originating from asset purchasing decisions.

But the guide also looks at the potential wider application of WLC, both in terms of its application to different types of purchase options appraisals (ie not just major construction projects), but also in terms of considering a wider range of costs and benefits that are not usually factored in to calculations but are very real (ie wider social and environmental outcomes and impacts).

The application of WLC to date has been limited and it has perhaps been most noticeably used in the public sector for PFI projects. However the demand for more sophisticated decision-making tools (including whole life costing) is expected to increase as public service organisations grapple with meeting lower emissions and energy targets and also deal with increasing pressures on finite resources including, for example, energy and water.

It is hoped that this publication will help organisations in considering WLC's potential more widely.

## USING THIS GUIDE

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This publication aims to be a resource for people in public service organisations who are involved in project investment and procurement appraisal decisions, as well as those involved in asset and facilities management and those tasked with providing financial information to assist in asset investment appraisal.

The guide can be read as a whole or dipped into for information on specific areas of WLC.

Chapter two explains what WLC is about, how it differs from other approaches to costing and the types of additional costs and benefits that can be brought into a WLC approach. The chapter also looks at similar tools with different names.

Chapter three looks at how WLC can assist in delivering value for money and highlights relevant areas of government guidance on best value and VfM. The chapter also considers some of the challenges in applying WLC.

Chapter four considers when and where to use WLC including its relevance to various types of decision-making and assessment processes. This includes its application to decisions required at various stages of an asset's life as well as procurement decisions for large and small assets.

Chapter five runs through the main steps involved in carrying out a whole life costing exercise. Each step is explained, with further chapters providing more detail on discounting and sensitivity analysis.

Chapter six provides additional information on discounting. It explains the purpose of discounting, the time value of money, net present value and discount rates.

Chapter seven provides additional information on sensitivity analysis. It explains what sensitivity analysis does and doesn't provide, and the steps in the process of carrying out a sensitivity analysis and choosing key variables.

Chapter eight looks at how WLC can be used to support policies and objectives aimed at moving towards sustainable development. The chapter considers main areas of government sustainability policy and initiatives and describes how WLC can be integrated with these plans, targets and reporting requirements in order to support a more connected approach. The chapter also looks at the Accounting for Sustainability (A4S) approach to embedding sustainable development in organisational planning and operational decision-making processes.

Most chapters include a summary and a list of resources. These are to be found at the end of the relevant chapters. In addition these and other resources not mentioned elsewhere are included in chapter nine. The aim is to provide a single place in the guide where the reader can find a variety of resources organised under a number of themed headings.