



Systems Cost Engineering

Program Affordability Management and Cost Control

Edited by Dale Shermon



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Parametric cost estimating models are flexible tools which bring engineering, scientific and mathematical rigour to cost and schedule estimating, but great tools alone will not keep programs affordable. Tools must be applied as part of a credible process if estimates and analyses are to be accepted.

Complex major projects involving engineering, hardware, software, service and IT, all suffer from two basic problems: the project sponsors often struggle to specify the project effectively, and project managers find themselves wrestling with unpredicted cost or schedule overruns. Everyone wants to be successful with the tools and solutions they use, so this book is a comprehensive collection of methods with proven success. The applications described by Dale Shermon and his co-authors have evolved over 30 years of cost engineering experience during which time they have been matured by the parametric community. Each chapter explores a different application of parametrics, based on real-life case examples, providing you with a detailed guide to the rationale and value of cost engineering in a different industry or program context.

Systems Cost Engineering will help cost engineers, project and program directors, and the champions that support them, to understand and apply parametrics to ensure that their programs:

- * offer a credible analysis of alternative cost options
- * are never initiated with insufficient funding because of inaccurate estimates of cost or quantification of risks
- * are never diverted from their objective because of a lack of credible cost management
- * share and communicate knowledge of realistic and dynamic cost and productivity metrics amongst the program team
- * are never derailed by surprise cost overruns or schedule delays

The information in this book will give projects sponsors and bid managers confidence in the business case that they are developing and enable them to communicate a clear and transparent picture of the risks, opportunities and benefits to stakeholders and project owners.

Contents

Introduction; How to appreciate parametrics; How to estimate using parametrics; How to prepare bids faster with fewer resources; How to prepare a focused business plan; How to validate quotations from suppliers; How to manage your program effectively; How to achieve accuracy in cost engineering; How to accomplish quality assurance; How to estimate through life; How to estimate technology maturity; How to assess software; How to analyse risk and uncertainty; How to influence project strategy; How to consider technology insertion; How to develop cost effective alternatives; How to tackle the system of systems challenge; How to create home-grown parametric models; How to successfully construct life-cycle costing; How to accomplish knowledge retention; How to present the results; How to adopt parametrics; The history of parametrics; Index.

About the Editor

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Dale Shermon is Principal Consultant and Opportunities Manager for the Through Life Cost Management team in HVR Practice, QinetiQ. Dale has presented courses in hardware estimating, software estimating, life cycle cost, Cost Estimating Relationships, Information Technology, risk analysis and supplier assessment in the UK, Sweden, Italy, USA, Australia, Singapore, Taiwan and Germany. He has conducted consulting assignments in UK, Italy, France, Australia and the Netherlands. He was responsible for the development of the "PRICE HL Questionnaire" within the PRICE Estimating Suite and the TruePlanning for Concepts parametric cost model.

Dale was previously working as a Senior Executive Consultant for PRICE Systems and a Cost Forecaster within Pricing and Forecasting Group (PFG) part of the UK Ministry of Defence (MOD). He headed a cell studying submarine platform Whole Life Cycle (WLC) Costs that supported MOD project approvals.

Dale has held estimating positions in various defence and aerospace companies including; Matra Marconi Space, British Aerospace (Space Systems) Ltd, British Aerospace (Dynamics) Ltd. and Rolls-Royce Ltd. Military Engine Group. During his period in the MOD he performed High Level Studies covering all of the armed services. In 2009 he was given the Frank Freiman Award for his work on parametrics by the International Society of Parametric Analysts (ISPA).

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