



Book Selection

Edited by U Aickelin

JA Muckstadt: Analysis and Algorithms for Service Parts Supply Chains (Springer Series in Operations Research S.)

C Clapham and J Nicholson: The Concise Oxford Dictionary of Mathematics (Oxford Paperback Reference S.)

A Cox, C Lonsdale, J Sanderson and G Watson: The Right Tools for the Job: Selecting and Implementing the Most Appropriate Management Tools for Specific Business Purposes

MC Jackson: Systems Thinking: Creative Holism for Managers

Analysis and Algorithms for Service Parts Supply Chains (Springer Series in Operations Research S.)

JA Muckstadt

Springer-Verlag, 2005. 294 pp. £42.50
ISBN: 0387227156

This book examines and discusses modelling and optimization of inventory policies for service parts across a supply chain from an analytical point of view. Evidently, there are many inventory policies applicable to single and multi-echelon systems, considering single and multiple locations, and items to be taken into account in modelling and optimization. Herein, multi-echelon and multi-item systems are mainly undertaken.

The main inventory policy emphasized is the (s-1, s) policy, which is very much applicable for dynamic systems such as military and aviation systems. First two chapters after the preface and introduction elaborate the background information on the policy considered, (s-1, s), extending the complexity of the basic idea with varying statistical properties of demand. In fact, the demand is characterized to be discrete and even integer conforming to Poisson and/or compound Poisson statistical distributions. Then, an exact model of two-echelon depot-based inventory system has been built up and analysed to be the starting main model. After that, more characteristics such as more echelons and items, continuity, recoverability and the likeliness of repairing of the items, capacity limits, etc. are eventually considered throughout the chapters. The ninth chapter examines the models subject to non-stationary demand, while the last chapter analyses the real-time execution of the systems undertaken earlier, and looks at the real-time applicability of the algorithms. A steadily extending writing style makes the book very useful to track the issues surrounding the inventory problem.

The strength of this book is its robust analytical approach, which apparently targeted researchers and doctoral students

in particular, from simple towards complex ones. It provides theoretically very strong analysis for every point indicated with very useful examples to illustrate the handiness of the approaches indicated. One comment which may be made is that the book would be more interesting if it brought forward more real-world examples for a solid applicability of the provided theoretical information.

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M Emin Aydin

The Concise Oxford Dictionary of Mathematics (Oxford Paperback Reference S.)

C Clapham and J Nicholson

Oxford University Press, 2005. 464 pp. £6.99
ISBN: 0198607423

Reviewing a dictionary is not an easy job: a dictionary is not read from beginning to end, so my review might be biased towards the arguments that I looked for. As a first impression I can say that this concise dictionary is well prepared, clearly written, quite rigorous without being unnecessarily formal. Given its very low selling price it could very easily find its place in the personal library of undergraduate or first year graduate students.

I am a little puzzled about the usefulness of dictionaries like this one in the Internet era: even with the dictionary readily available on my desk, in these days when I had some doubts about the exact definition of a mathematical term I usually went to www.mathsci.net. Of course, a book is a different thing from a collection of web pages—but this difference might be positive or negative, depending on the point of view and on our objectives.

A dictionary is the outcome of a large piece of work by a small group of people; thus, its contents are more uniform in style and deepness—on the contrary a collection of web pages is the contribution of many people, each one

introducing a possibly different style and knowledge of the field. On the other hand, a dictionary is more static (but this could be an advantage!).

I browsed the dictionary in search of terms related to my research field, which is optimization. I could find a short biography of Von Neumann, but Dantzig, Kuhn, Kantorovich are absent. Simplex method is presented, with a quite detailed numerical example; however, the entry 'optimality conditions' is empty and points to the simplex method! Trees are defined as well as both the algorithms of Kruskal and Prim are presented (although with some imprecisions in giving their relative complexity). Polyhedra are defined in just three dimensions, without any mention of systems of linear inequalities. Minkowski's biography is present, but his contribution to geometry and polyhedra is not cited.

I might continue this way, but I fear that this game is not fair: the book I have been asked to review is not a dictionary of mathematical programming, so it is natural that some compromise has to be taken between deepness and wide coverage. It is a dictionary, not an encyclopaedia—as a dictionary it is surely a very good one, especially for general undergraduate mathematics. Also its price is so low that I think the cost/benefit ratio is really pretty good.

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F Schoen

The Right Tools for the Job: Selecting and Implementing the Most Appropriate Management Tools for Specific Business Purposes

A Cox, C Lonsdale, J Sanderson and G Watson

Palgrave Macmillan, 2005. 400 pp. £55.00
ISBN: 1403918813

This book is one product of a 6-year study at Birmingham University into the most commonly used management tools and techniques in four areas: business strategy and finance, marketing, production and operations, and procurement and supply chain management. The study surveyed staff in 237 companies drawn from a range of 16 industries ranging from construction to IT and publishing. The authors identified 253 tools and techniques of which 184 were used by the companies surveyed.

The tools and techniques are considered in each of their four areas. A description of each tool and technique is provided followed by a concluding section which discusses the findings of how those tools and techniques are used in the companies surveyed. The definitions provide a reasonable description of the tools and techniques although some are lacking in detail.

An area which seems slightly weak is the selection of tools and techniques that were chosen for study. For instance in business strategy tools such as strengths, weaknesses,

opportunities, threats (SWOT), balanced scorecard and Porter's five forces were all included. Tools such as soft systems methodology and strategic options development analysis (SODA) were not included and yet they would seem worthy of inclusion. A little more explanation as to the rationale for leaving out certain tools would provide greater clarity as to how the plethora of management tools and techniques fit together in the authors' view.

I am sure that one key finding from the study will not come as a surprise to operational research practitioners: 'While the survey findings demonstrate that, when managers use tools and techniques they do so for rational reasons, the major finding from this study is that managers do not use them very much at all.'

The challenge for most practising operational researchers is not which tool and technique to use but convincing senior management that an intervention is required.

If you need a reasonable overview of the range of tools and techniques that are available within the management discipline this book is worth a look. If you would like a better understanding as to how these are used in companies the book is sadly lacking. You will need to read the EPSRC research reports for Grants No. GR/L86395 and GR/N34161/01 to obtain that level of detail.

Oxford Management & Research Ltd

S Simister

Systems Thinking: Creative Holism for Managers

MC Jackson

John Wiley and Sons Ltd, 2003. 376 pp. £27.95
ISBN: 0470845228

It is always a pleasure to review a book produced by an enthusiast. This book represents the culmination of Mike Jackson's survey of systems thinking and his efforts to develop a unified methodology for managers to tackle messy, ill-defined problem situations. A major objective of the volume is to make much more accessible to managers the position taken in his co-authored volume with Flood (Flood and Jackson, 1991). In my view this objective is certainly achieved. The book is written in a lucid, well-structured style with an eye, where necessary, for the most appropriate illustration.

The book is divided into 10 chapters, each of which can be read reasonably independently, although the true picture emerges if they are read in sequence. Initially there is an overview of systems thinking and its roots. Time is then spent addressing the logic and process of total systems intervention (TSI). The author next embarks on a detailed consideration and classification of some systems methodologies, including systems dynamics (SD), organizational cybernetics (OC), viable system diagnosis (VSD) and

strategic assumption surfacing and testing (SAST), interactive planning (IP), soft systems methodology (SSM) and critical systems heuristics (CSH).

Unification is addressed, in the final chapters, by revisiting TSI with an application and critique, culminating in a statement of creative holism's philosophy and theory through critical systems thinking (CST) and its methodology critical systems practice (CSP).

The style of the book allows novices in the field to get to grips with the subject matter of systems thinking while allowing the seasoned systems thinker to extend their insight into the current frontiers of the subject. In this sense we have a unified text accessible to all levels of understanding: a significant achievement.

Creative holism is the thrust of this book and its total is certainly more than the sum of its parts. The inquisitive managers will be amply rewarded if they delve into the body of this book giving them a real insight into how they can harness the disparate, messy problems unavoidable in organizations. In this sense, the practitioner can tackle problems in a creative and productive manner. The volume does not offer a panacea, but instead guides the reader to appropriate methodologies to help in resolving their problem situation, which in turn prepares them for applying CST and CSP.

This book is substantial in its scope and will be of significant benefit to final year undergraduates pursuing Management Science or an IS methodology elective, postgraduate students studying Business IT or Management Masters' programmes and MBA students interested in systems ideas or taking an IS pathway. It will also be of use to practising Management Scientists requiring insight into the systems approach to problem solving as well as research students wanting to obtain an overview of the field, the latest research findings and pointers to extending their reading. Its neat, uncomplicated style also makes it extremely accessible to managers by offering them an operational, systems-based approach to creative problem solving.

In his preamble Mike Jackson indicates that this will probably be his last book. I hope this is not the case for this is one of his best.

Reference

Flood RL and Jackson MC (1991). *Creative Problem Solving*. Wiley: Chichester.

Kingston Business School

S Fitz-Gerald