J. Opl Res. Soc. Vol. 32, pp. 239 to 243, 1981
Operational Research Society Ltd. Printed in Great Britain

Book Selection

Edited by JOHN HOUGH

Measurement and Modelling Methods for Computer System Performance Studies

M. F. BARNES

Langton Information Systems Ltd/Input Two-Nine Ltd, U.K. 1979. 177 pp.
ISBN 0 90 589718 8

This book aims to present in one volume the most significant of the currently used techniques of computer system measurement and modelling, in order to improve computer system design and development. It is not so much about computer system performance as such, but rather about the methods by which it may be analysed, measured and predicted. Thus many of the techniques and procedures presented, especially those used for modelling, apply to various types of system and are of general interest to operational researchers; in fact, the author has an M.Sc. degree in O.R.

The first four chapters are concerned specifically with computer systems and discuss in turn: computer system performance and its evaluation, workload analysis and simulation, performance measurement, and "tuning", i.e. making fine adjustments to optimise performance. The remaining chapters apply to a wide variety of systems and discuss: general aspects of modelling, systems reliability, queueing models (in considerable detail), discrete event simulation models (rather briefly and mostly about GPSS), and finally implementation and management of performance evaluation work (again rather briefly). The four technical appendices give details of: workload analysis examples, a simulation example, some of the probability theory and stochastic process theory used in the main text, and Laplace transform methods.

The presentation is clear and well laid out, presenting relevant theoretical formulae explicitly and without proof, together with many numerical examples. Relatively few references to the literature are quoted, except that the chapter on queueing models lists 26 items. There is no index.

On the whole, I strongly recommend this book, especially to O.R. practitioners and also to lecturers and students who are also interested in the applications of O.R. to computing. It has the merit of putting many useful methods and results together in one book.

However, I was disappointed that no reference was made to the performance evaluation and measurement of computer networks and data communication systems, which are now becoming increasingly important. A book on this topic is urgently needed.

ALAN J. MAYNE