

required. This aspect of O.R. activity, not often represented in the literature, is therefore of particular interest.

Well worth reading, but highly priced.

STEVE BARON

The Economics of Production Innovation—An Industrial Perspective

GERHARD ROSEGGER

Pergamon Press, U.K., 1980. 404 pp. U.S. \$17.50

ISBN 0 08 024046 1

The study of innovation and technological change is becoming an area of increasing interest as a factor towards understanding the competitiveness of firms and industries in home and international markets, and towards higher standards of living. For example, Paritt¹ has just edited a damning series on the current lack of applied innovations in Britain, forcing us to compete in low technology products.

Rosegger introduces the value of innovation and technological change. He quotes the growth of Britain in the last century *vis-à-vis* France as the country with the higher application rate of innovations. He points to the growth of U.S.A., need for education, but warns against investing in "a body of learned men, who pass on a deteriorating stock of knowledge".

Rosegger takes the reader through the relevant aspects of aggregate theory of production, micro theory of a firm with reference to plant size and economies of scale. He discusses the patent system, the progression from invention to innovation, the diffusion of innovations (ripple effects) and theories of technological change and technological forecasting.

The book is a serious unbiased effort to summarise the variety of theories and relate them into a general structure of economic, O.R. and managerial thinking. It is a survey, setting out arguments for and against. Rosegger clarifies some of the different definitions and points to series of unquantifiable measures needed to substantiate the theories. He includes aggregate data, mainly from the U.S. economies, economies, but feels that any conclusions drawn from the data are "shaky". Examples are taken from the Basic Oxygen Process and Pilkington's glass manufacturing.

Rosegger has written a readable summary of current theories on the vital issue of how innovations can be stimulated and made. It is a basis for further work, rather than a definitive text.

J. A. C. C. WATSON-GANDY

REFERENCES

- ¹ K. PARITT (Ed.) *Technological Change and British Economic Performance*. Macmillan, New York.

Fortran Computer Programs

C. W. MERRIAM III

Lexington Books, U.K., 1978. 350 pp. £16.00

This volume is better described by its subtitle—solutions to optimisation problems arising in feedback control. It is a technical book centred around a number of computer programs applicable to the design of feedback control systems. As such, it is far more appropriate to those involved with such systems rather than Operational Research.

The author presents 37 Fortran IV programs with extensive documentation and mathematical explanations. These cover various topics such as optimal gain control, performance functionals and optimisation of functions. The programs are related to the computational methods presented in the author's book 'Automated Design of Control Systems'.