BOOK REVIEWS

General Competitive Analysis, Kenneth J. Arrow and F. H. Hahn. Edinburgh: Oliver and Boyd, and San Francisco: Holden-Day, 1971. Pp. xii, 452. £stg 6.50.

Since Adam Smith, economic theorists have been concerned with developing a general equilibrium theory of a market economy. From this concern many outstanding contributions have emanated. In their book Arrow and Hahn have provided a definitive analysis of the "state of the arts" in general equilibrium theory.

The preface of the book provides an interesting discussion of need to study a seemingly abstract world. This is of particular relevance in today's world where neo classicals and econometricians are being challenged by "radical" economists to face reality. Continuing on, the book gives an historical introduction to the subject, then covers market equilibrium, production and consumer decisions and arrives at the basic problem, i.e. the existence of competitive equilibrium, in chapter five. The middle section of the book extends the competitive analysis beyond the limits of classical perfect competition, while the final third discusses topics such as the uniqueness and stability of competitive equilibria and comparative statics. Also included are three useful mathematical appendices.

Those conversant with the language of mathematical economics will find the book written in a good style, although the numbering system makes cross-referencing difficult at times, particularly when referring back to key assumptions.

As with most fields of economics, the major works in general equilibrium theory are usually found scattered in various professional journals. This book provides readers with the opportunity to have the important contributions to the theory all in the one text. While the book may not be very useful to applied economists, it is a necessity for theoretical economists and for postgraduate mathematical economics students, who will quickly discover that Arrow and Hahn are two of the "heavies" in the field.

COL GELLATLY

Department of Agriculture, Sydney

Information Systems for Modern Management, R. G. Murdick and J. E. Ross. Englewood-Cliffs, New Jersey: Prentice-Hall, 1971. Pp. xx, 572. $15.50.

The aim of this book is to develop the concept that information systems are critical to the management of large organizations. The basis for this thesis is that organizations comprise a complex of interdependent subsystems, each open to interaction with the environment in which the organization operates. It is the contention of Murdick and Ross that the performance of such organizations is closely related to the successful integration of these subsystems both within and without organizational boundaries. This is seen to be a major task of management in fulfilling its roles of planning, forecasting, decision-making, co-ordinating and controlling. A formalized information system is postulated to be the means of achieving this end.

The book is divided into five parts. Part 1 briefly outlines the development of various approaches to management and organization theory—for example, in the authors' terminology, "behavioural" and "management process" aspects. Murdick and Ross argue that each approach deals with unique parts of the organization structure, and as such, no satisfactory theory of the total organization has developed. Thus they develop a case for viewing the organization as a system of parts or group of processes.

Part 2 examines in detail the role of the information system in the managerial process, that is, as a basis for decision-making and the integration of the various parts of the organization. An important and increasing role is envisaged by Murdick and Ross for the introduction of computer technology into information systems. For those puzzled by the mystique of the computer, a brief and illustrated chapter on the technical aspects of computer operation is provided.

The conceptional aspects of information and communication—for example the problem of getting the right information in the right form to the right place—are examined in part 3. The nature of problems and problem solving with reference to decision making is also discussed. This includes comment on factors which may affect the decision making process, and an informative analysis of the various analytical tools (such as modelling) that may aid the decision making process.

Part 4 outlines various steps that could be followed in the planning, programming, design and implementation of the information system. The authors make particular note of the need for the manager/decision maker to be closely associated with the design of the system.

Part 5 considers the future of the information system in management. The authors envisage an increasingly important role for the information system in the future, and in this part give some insight into what they perceive that role to be, and into some developments that can be expected over the near and long term.

My conclusion about the value of *Information Systems for Modern Management* is that it is a good general introduction to the broad topic of information systems. It develops a sound case for the need and use of such information systems, and provides useful ideas on the practical implementation of them. A word of warning is warranted however. It is a rather verbose book, and because of that, not easily read. Further, it contains a plethora of diagrams, tables and flow charts, many of which seem relatively complex, and lacking of adequate description and integration with the text.

G. A. FORSYTHE

Department of Agriculture, Sydney

Symposium: Vertical Coordination in the Pork Industry, Robert E. Schneidau and Lawrence A. Duewer (editors). Westport, Connecticut: Avi Publishing Company, 1972. Pp. 277. $US 20.50.

This publication is the proceedings of a symposium held at Purdue University, Indiana, in October, 1971. The symposium aimed ". . . to assemble current information on the status, extent and future of vertical co-ordination in the pork industry". Contributions came from some forty persons connected with the U.S. and Canadian pork industries, including university agricultural economists, U.S.D.A. personnel, consultants, producers, meat packers and retailers.

Following an introductory overview the proceedings are divided into six sections: the challenge of the changing consumer; a regional analysis of systems of co-ordination; a similar analysis on a sector by sector breakdown; the effects of technological change; financing issues and some co-ordination experiences; and some policy applications. A summary and conclusion by the editors rounds off the volume.

This book contains a wealth of information on all aspects of current pig and pork marketing systems in North America, especially those involving integration, and on future developments in these systems. The book, however, emphasises three distinct areas.

The first is the distinction drawn between various types of market co-ordination. Vertical *integration* is narrowly defined as ". . . combining or incorporating additional (marketing) stages under one ownership", whereas vertical *co-ordination* takes the wider meaning of any mechanism which contributes to greater co-ordination between the various market stages. Vertical integration is thus only one extreme way of achieving greater vertical co-ordination.

Means of inducing greater integration forms the second theme. Whether by contract or by ownership, increasing integration benefits the integrators by lowering administration and other operating costs, by boosting financial reserves, by increasing market power, by making better use of new technology, and by increasing the degree of certainty regarding quality control, costs, throughput, and returns. The major beneficiaries of vertical integration are feed dealers and other input suppliers, some types of producing units, large meat packing firms, and retailers at the packer-retail link.

However, some other market participants are adversely affected by vertical integration, such as producers wanting independence, small packing firms, and livestock market operators. Major disadvantages are a loss of competitive position, and a decrease in the market's pricing efficiency (especially at auction sales). The third area of emphasis notes ways that these groups can live with integration, and there are in general three types of response: (1) they can try to counter the trends by increasing co-ordination through market mechanisms in order to offset the need for co-ordination through management control; (2) if managed co-ordination seems inherently superior to market transactions, these groups can try to take control with their own organizations; and (3) they can accept control by integrators as inevitable, and endeavour to advance their interests in other ways within systems where power and key decision-making functions are beyond their reach.

The editors make two major conclusions. The first is that the symposium contributors all agree that increased co-ordination is "good" as long as it lowers costs and increases efficiency and product quality. However, the contributors are also generally agreed that increased integration as a means of achieving greater co-ordination can have disadvantages, especially if some sectors of the market suffer and/or pricing efficiency is adversely affected. Inconsistent with these principles is the fact that the present U.S. marketing system does not seem able to provide the required degree of co-ordination so some form of managed co-ordination appears desirable. Most of the contributors, however, doubt whether contract co-ordination can proceed without large doses of ownership integration. Hence the editors second conclusion is that there will be increased vertical integration in the hog-pork industry in the future, and this increasingly vertically integrated system will exist side by side with the privately owned and controlled production and open market system.

Overall, this collection of readings provides background information, experiences, questions and thoughts on almost every facet of vertical co-ordination. With this topic receiving widespread attention in Australia, the symposium proceedings reviewed here should provide a most useful acquisition for those people interested in this subject.

G. R. GRIFFITH

Department of Agriculture, Sydney