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What People Are Writing About

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BOOKS

Information for Management Decisions by YAAQOV GOLDSCHMIDT, Cornell University Press, Ithaca, New York, 1970, 310 pages, $11.

This provocative book outlines a system of management accounting, called the Operational Accounting and Analysis System (OAAS), that an Israeli economist has developed to bridge the gap between economic and accounting principles.

In theory economics and accounting deal with much the same subject matter. In practice they are often miles apart.

Businessmen frequently fail to make decisions that conform to the laws of economics. Dr. Goldschmidt, an economist, attributes this failure not to any deficiencies in economic theory but rather to deficiencies in the accounting systems that produce the data on which business decisions must be based.

"I have often been struck," says the author, "by apparent errors in decisions on resource allocation, even in well managed firms. Although the managers tried to make rational decisions based on the available data, these decisions often turned out to be incorrect. For example, I observed many situations where a production line was discontinued because it produced an accounting loss. But post-mortem analysis indicated that this line had provided a considerable margin between revenue and variable costs and that the released fixed facilities did not have a better use."

Where economics and accounting conflict, accounting should give way, in Dr. Goldschmidt's view: "Assuming that the objective of the firm is to maximize the present value of future income (revenue minus cost), a firm's resources should be allocated according to

the dictates of accepted economic principles. Since accounting techniques provide much of the data required for making these decisions, the firm's accounts should be consistent with the demands of economics." Hence OAAS.

The system was developed for and tested on large farms in Israel and the United States. It seems to have worked out fairly well, although the author, in his discussion of the farm experience, does not separate the accounting system from the application of linear programing to resource allocation—a project which gave the initial impetus to the development of OAAS.

Is it accounting?

Some accountants, Dr. Goldschmidt notes, may object to the classification of OAAS as an accounting system since it is "partially based on such production economic concepts as marginal analysis and opportunity cost . . . contrary to accepted accounting principles." Those who do object, he says, may consider it a "procedure for a cost and income analysis." (The author himself considers it an accounting system because it "provides data pertinent to the past.")

Like direct costing and responsibility accounting, with which it has many common elements, OAAS is not usable for the purposes of external reporting. Any company that adopted it would have to have parallel systems. This is, of course, quite feasible; as Dr. Goldschmidt notes in passing, cost accounting was the domain of the engineer until late in the Nineteenth Century; only after the accountant took it over as a result of auditing it did the problem of integrating the various accounting systems arise.

Decision tool

OAAS is designed for decision making. It is supposed to provide data to facilitate decisions on resource allocation, internal pricing, and external pricing in a non-perfect market and to direct and motivate the decision maker.

The operations of a firm are broken down into time periods and operating segments. Transfer prices (market prices or "determined values") are assigned to assets (durables, inventories) transferred among periods and to intermediate goods and services transferred among segments.

As in direct costing, indirect costs are not allocated to periods or segments. Acquisition costs of durable assets are not distributed to periods, and overhead and common costs are not distributed to segments or units of product. However, implicit costs, for example, the cost of capital, are charged to the segments, and implicit revenues, such as the market value of intermediate goods, are credited to them to make each productive or service segment a "contribution center."

Costs are classified as traceable and nontraceable (mainly overhead), and traceable costs are divided into avoidable and nonavoidable. Only traceable, avoidable costs are charged to segments, (reminiscent of responsibility reporting).

Marginal costs (crucial in OAAS, as in any economic analysis) are approximated by a surrogate avoidable cost, measured by the variable costs plus the external opportunity costs. External opportunity cost is the market price of a commodity used in production; internal opportunity cost is the contribution (revenue minus avoidable costs) that a resource or facility could earn in its best feasible use within the firm.

Two income measurements are suggested: attainable contribution (for use in decision making) and contribution to overhead (for evaluating performance). Attainable contribution is calculated by subtracting avoidable costs from the segment's revenue. Contribution to overhead is calculated by subtracting all traceable costs from revenue or by subtracting nonavoidable costs from the attainable contribution.

This, in highly condensed form, is the OAAS system. With its emphasis on marginal and opportunity costs, it is clearly economics-inspired. Its use, according to Dr. Goldschmidt, will make management decisions better reflect the market price mechanism in all segments of the business—whereas conventional management reporting permits the profitability of the whole to cover up individual activities that may be unprofitable.

Because conventional accounting systems do not provide data on which decisions that accord with the principles of economics can be made, according to this author, managers face two alternatives: Either they can use accounting data as the primary source of information in decision making, or they can ignore the accounting data and look for other sources of information. "Either of these alternatives is bad."

Many accountants will object violently to Dr. Goldschmidt's system; but all should find it worth studying. As more and more economists and operations researchers become involved in management analysis, there will be increasing pressure for some system such as this. And accountants should be prepared for it.

An Executive's Guide to Computer Concepts by JAMES MONSMA and KENNETH POWELL, Pitman Publishing Company, New York, 1969, 181 pages, $6.95.

This skillfully organized, simply written explanation of how computers really work is essentially a condensation of what must be one of the best computer courses around.

The authors of this book, both educational research executives at IBM, developed and taught a seven-day course designed to give

non-computer executives "a conceptual understanding of computers and a fluency in talking about them." The book is based on that course and evidently uses many of the course materials.

Their ideas about what executives need to know about computers differ from those of many other writers on this subject. They give little attention, for example, to computer applications. They say, "Experience has shown that the experienced executive, once introduced to the computer, understands far better than we do the uses to which he can put the computer."

On the other hand, they include a good deal of detail to show how the computer actually operates, with exercises in which the reader is required to take, step by step, the actions taken by the computer in executing a program. "Lower management," the authors note, "sometimes balks at the degree of detail, but we have found no such resistance on the part of higher-level management."

They start with a brief history of computing devices. The next four chapters—more than half the text—are devoted to explanation of how the computer "thinks," how to program, and how to use programming languages. A chapter labeled applications actually describes a universally applicable type of program—inventory control—and then goes on to discuss simulation and how it can be carried out with almost any computer program. The final chapter reviews some of the more advanced EDP gadgets and such ideas as real time processing. Appendixes explain numbering systems and floating point numbers.

Some readers may find this book too machine-oriented. They may feel it tells them more about the workings of the computer's brain than they really want to know.

The authors have an answer for that criticism. "At first glance it would seem that the book should give you just those facts that you need to know to do your job. On reflection, such an idea must appear presumptuous, amusing, or tragic, for it implies an understanding of the executive's job and the role he wants the computer to play. The executive alone has such an understanding."

Instead, these authors seek to give a thorough grasp of the fundamentals, on which the executive can build along the lines that attract him. Their purpose, they say, is "to explore those basic computer concepts, thought processes, and vocabulary" that the executive must master in order to communicate with computer people and "take or regain operational control" of his computers. Many readers will put this book down with a better "feel" for the computer than they have been able to get from any other source.

Briefly listed

Readings in Management Control by ROBERT J. MOCKLER, Appleton-Century-Crofts, New York, 1970, 532 pages, $5.95 paperbound.

This anthology contains 39 articles on the theory, techniques, and applications of management control by 46 authors, including representatives of five large CPA firms. Four of the articles originally appeared in MANAGEMENT SERVICES.

Move In & Move Up by E. A. BUTLER, The Macmillan Company, New York, 1970, 179 pages, $5.95.

This lively anecdote-packed self-help book by an executive recruiter tells how to get a job (resumes, etc.), keep it (with a chapter on what to do if you get fired), and get promoted. It is more practical and less preachy than most books of this type.

A System of Cost Accounting for Physical Plant Operations in Institutions of Higher Education by JOHN L. GREEN, JR., and ALLAN W. BARBER, the University of Georgia Press, Athens, Georgia, 1968, 103 pages, $3 (paperbound).

Universities, traditionally indifferent to cost accounting, recently have been seeking to determine general educational costs. Few, according to these authors, have developed elaborate cost accounting systems for specific functions. This manual presents a detailed description of such a (computerized) system for physical plant accounting, developed with the assistance of Arthur Andersen & Co.

Punched Paper Tape as an Input for Unit Automatic Typing by BERNARD STERNIN, reprint from *The Practical Lawyer*, November, 1969, Booklet 15-577, available without charge from the Friden Division of The Singer Company, Advertising Department, 2350 Washington Avenue, San Leandro, California 94577.

Although it was written with law firm uses in mind, this simple explanation of the basics of using punched paper tape is general enough to apply to any organization.

MAGAZINES

The Impact of People on Budgets by MICHAEL SCHIFF and ARIE Y. LEWIN, *The Accounting Review*, April, 1970.

An examination of the relationship between the controller and the controlled indicates that the "controlled" succeed in building considerable slack into their budgets. The authors explore the problem of top management influence on the budgeting process.

According to the authors, every company operates with slack resources which are distributed to participants in the organization. Shareholders, workers, and executives may receive more than the minimum required to obtain their continued participation.

Managers create slack in budgets by understating revenues and over-

stating costs. Revenues may be understated by understatement of potential unit sales and unit selling prices. Costs may be overstated by discretionary budgetary allocations to such activities as increased personnel, advertising, promotional programs, sales meetings, training programs, and special projects.

Role of the controller

Managers are motivated to achieve two sets of goals—personal and organizational. These goals affect allocation of the organizational resources. Since the individual seeks an organization that permits achievement of personal goals while furthering organizational goals, lower-level management can be expected to strive for a budget which it feels is attainable yet meets personal and top management goals.

The tendency to decentralized control has produced a divisional controller who is closely involved in achieving division objectives by creating and managing divisional slack. In a centralized company the controller may be uninformed about the extent of slack, which may be diffused through all management levels.

Top management slack

The problem for top corporate management is how to develop the information to set reasonable organizational goals. Top management is severely limited in its ability to do this task because of the difficulty of ensuring top management's active participation in the budget process. This article suggests that task force groups could be staffed with senior managers, outside consultants, or recently hired top-flight MBA's to review selected divisional budgets on a cyclical basis. From evaluation and review at the termination of the budget process the emphasis could shift to top management influence on the budget process at its critical formative stages through top management questioning of the bases for the formulation of estimates.

A detailed reading of this article gives much insight into the subject of the budget slack that results from interaction between the controller and the controlled. The authors outline an approach by which top management can impose reasonable organizational goals through constructive review of the budget at critical points.

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Toward a Theory of Nonprofit Institutions: An Economic Model of a Hospital by JOSEPH P. NEWHOUSE, *The American Economic Review,* March, 1970.

A model for hospital decision making based on traditional economic analysis is described in this article. Despite several unrealistic assumptions, the model does provide considerable insight into the nonprofit institution decision process.

In order to examine the economic efficiency of hospitals, a model of a hospital was developed, utilizing traditional economic analysis. The hospital decision makers (identified as its administrators, board of trustees, and medical staff) were shown to have individual utility functions that sometimes directly opposed one another. For convenience's sake, the author assumed that these differences could be reconciled so that the taste of a generalized decision maker could be considered.

A maximand consisting of the quantity and the quality of the hospital services provided was then assumed for this generalized decision maker. To circumvent the problem of measuring quality of services, quality was described as a vector of characteristics, some of which might not be quantifiable except in the sense of being present or absent. For a given quantity of services, it was assumed that there was a hierarchy of qualities that could be established. Quantity, although difficult to measure, was assumed to be measurable as patient-days. Increasing the quality or quantity of services, while holding the other factor constant, was accompanied by an increase in their total cost.

Assuming that the decision maker is a utility maximizer, he should choose the optimal distribution between quantity and quality, which is dictated by the point of tangency of the quality-quantity trade-off curve and the highest attainable indifference curve of the decision maker.

When the cost of the hospital must be met from its revenues, Newhouse shows, the hospital decision maker will operate at a level where his average revenue is equal to his average cost. He also shows that a hospital in this situation will equate the value of its marginal product with its marginal factor cost, just as a profit maximizer would do. At this point, one might conclude that a hospital is economically efficient, but Newhouse answers, "Not really," for several reasons.

One reason is that the hospital decision maker is biased in favor of quality. The hospital industry is a "Cadillac only" one. The trade-off between quantity and quality depends only on the budget constraint (earned revenues and third-party subsidies). The distribution of the two depends only on the decision maker's utility function. In welfare economics, this decision maker is classified as a dictator whose choice does not necessarily represent social optimality. The author presents considerable evidence to support his assertion that a quality bias exists.

A second reason that economic efficiency cannot exist is the lack of free entry into the industry. The entrepreneur is nonexistent in a nonprofit field. Even if a hospital were operating at an average cost that was above the minimum average cost associated with a given average revenue, the existence of third-party subsidies would seem

to hinder entry by a profit maximizer. In 1964 hospitals received 38 per cent of their capital inputs from third-party subsidies; these subsidies allowed hospitals to operate at a higher point on their average cost curves, thus attaining higher quality, while still able to offer services at a lower price than a profit maximizer could.

In summary, Newhouse presents a well documented view that hospital decision makers would rather have greater quality at the sacrifice of a proportional increase in quantity, a bias which leads to economic inefficiency, since a profit maximizer would produce at lower qualities and greater quantities, given the same budget constraint.

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The Coming Shake-Up in Telecommunications by DAN CORDTZ, *Fortune*, April, 1970.

Changing technology and new competition are leading to significant changes in the telecommunications industry. This will provide new tools for business and data processing communications.

This article discusses a vital problem area in future business utilization of voice and data communication. As the article points out, communication is an essential element in American life. The computer revolution has further burdened the already overtaxed communications networks of the country. The increasing demand for communications is so great that information pollution may well be developing.

Major changes are taking place in the telecommunications industry with which the business manager must be concerned. The inroads of competition may have a significant impact on future communications utilization. The author expands on this theme with discussions of microwave networks, a domestic satellite system, cable television, and allocation of radio frequency.

Great concern is expressed by many groups about resolution of these problems. The Federal Communications Commission, Congress, and the Administration are significantly involved. Technical knowledge within the last two Government arms is limited. An Office of Telecommunications will shortly be established in the Executive Branch. Another major problem is financial support for the Federal Communications Commission.

Network limitations

All of these influences will affect the choice of solutions to the growing limitations of the communications network. The article points out that the development basis for our national communications network is voice and telegraphic service. The development of television and computers has called for increased capacity and phones capable of handling data. Major differences of opinion appear to exist as to whether the growing data services demand can be handled by the present network. Even present computer users are concerned about costs and service. Current time restraints are difficult for computer users to bear. The article aptly summarizes the user demand for greater technical capability, more pricing freedom, and unrestrained switching like that enjoyed by phone subscribers. The technical considerations are briefly but adequately explained for the layman. Increased error rates due to data conversion are recognized as a significant problem.

A major consideration for the business manager is the competition arising in the data services field. Recent decisions by the FCC have allowed greater freedom in transmission. The use of special modems (adapters to convert digital data to analog signals) other than those of A.T.&T. is an important step forward. Beyond this development, the microwave common carrier system recently created will have a major impact upon data messages. FCC acceptance of this concept has generated a rapid increase in competitive offerings. Data transmission may change radically in the near future.

Policy questions

The author raises some critical policy questions concerning these new developments. An initial question is whether selective competitive service should be permitted. Debate continues as to whether the present common carriers should be limited to voice and telegraphic transmission. The FCC may be starting in this direction. Another major problem is the storing and forwarding of messages by computer service companies, which would compete directly with common carriers. Regulation of the computer service companies is part of this issue. Correspondingly, Western Union and A.T.&T. will have significant capacity with future switching networks.

The subject of satellite transmission is explored, although it is still in its infancy. The trend appears to favor allowing competition in this field also although A.T.&T. strongly opposes such a move. The argument in favor of economics of scale has apparently been rejected. The initial benefits of satellite transmission are in television rather than data transmission.

Issues summarized

The importance of this article for management involved in or considering the use of data transmission cannot be minimized. Changes suggested in the article for the near future should lead to better service and lower cost. The utilization of computers in business will be increased by such developments. Widespread interface with consumers may finally be achieved. This article provides an excellent summary of all the considerations before the communications industry and its regulators.

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