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What People Are Writing About

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BOOKS

Work in America: Report of a Special Task Force to the Secretary of Health, Education, and Welfare, The MIT Press, Cambridge, Mass., 262 pages, $10 (hard cover), $2.95 (paperbound).

This is the book everybody is talking about. No businessman—and particularly no consultant—can afford to admit he hasn't read it.

This report, commissioned by Elliott L. Richardson when he was still Secretary of Health, Education and Welfare, has drawn a volley of comments—both pro and con—since its publication last year. Despite its mixed reviews it was an instant success at the box office. HEW's initial supply was exhausted within a few days after publication.

(This version comes from a university press.)

Partly, at least, the book was a best seller because the Government, for once, was right on top of an intellectual fad. The thesis of this study, that American workers at all levels—from dishwashers to executives—are increasingly bored with and alienated from their work, while not completely new, is not yet a cliche. In fact, many people are still skeptical.

A good half of this report is devoted to presentation and analysis of the problem. The material will be familiar to those who have already read *Where Have All the Robots Gone* (by Harold L. Sheppard and Neil Herrick, The Free Press, New York, 1972). Not surprisingly, since the authors of that book were members of this task force and one of the other members works with one of the authors at the W. E. Upjohn Institute for Employment Research, under whose auspices this report was prepared, the two volumes are in close agreement: Strikes, sabotage, lower pro-

ductivity, dropping out of society, among other aspects of the modern scene, are symptoms of widespread worker discontent and boredom.

The thesis is plausible enough, although this report is not based on original research and its general research underpinning, like that of the Sheppard-Herrick book, is somewhat thin. (As Secretary Richardson notes in his foreword, "One could wish that the data on which some of its conclusions are based were more adequate.") It is far from clear, however, that discontent with the nature of work is a new phenomenon (although Federal concern with it may be).

Rising expectations?

Indeed, it is hard to visualize any era in history in which the work of the masses was more fulfilling than it is today. What is more probably true is that never before were the masses so well educated and so capable of realizing that they were bored. Thus, the whole furor over the "blue-collar blues," "tight white collar," and the like may well be another facet of the revolution of rising expectations.

Justifying the breadth of its title, this report ranges over a tremendous variety of subjects: manpower policies, medical care strategies, educational and welfare systems, the status of working women, day care centers, job discrimination, inflation. As Secretary Richardson comments in his foreword, "In the breadth of its perspective and its freshness of outlook, this report literally takes on everyone, not excluding some of the thinkers in the present Administration. . . . I cannot recall any other governmental report which is more doughty, controversial, and yet responsible than this one."

In most of the areas it touches on, the report has recommendations for government and/or industry action, many of them controversial, most of them somewhat vague. Among the major suggestions for the government are a worker "self-renewal" program for anyone who wants job mobility or a second career and a Federal commitment to a "total" (rather than full) employment economy. Neither is very clearly explained; neither seems to have been thought through in great detail.

Industry must do job

The authors' basic plea, however, is for job redesign—and that, despite some minor proposals for government research and encouragement, is basically up to industry. There already have been moves in that direction in some of the larger and more progressive corporations. Now, with the imprimateur of a governmental report on it, job redesign may well be on its way to becoming the big fad in management circles. (Management consultants, take note.)

Organization and Management of Information Processing Systems by LEON K. ALBRECHT, The Macmillan Company, New York, 1973, 383 pages, $11.95.

This book, by a man who has done it, is probably the most detailed guide yet published for the management of data processing systems.

The jacket blurb describes this book as "the only nontechnical guide to information systems management available for management personnel." That is nonsense, of course; there are dozens.

What is different about this one is that it skips the nonessentials (from the manager's point of view) such as what a computer is and how it is programed; cuts to the bone the essential background material (system theory, systems tools, and systems concepts); and really concentrates on the management of data processing systems.

In a hard-sell introduction to the book, Richard W. Brightman declares, "[This book] treats the organization and operation of an information systems organization within a business enterprise. To my knowledge, no other book in the field has the thoroughness and insight into this important subject as does Albrecht's. . . . this is the only book I have run across that devotes almost all of its attention to the techniques and basic processes involved in managing and operating an information systems organization . . . It . . . is unique in terms of treating subject matter in depth that is often passed over lightly by more technically and more academically oriented authors."

Deals with essentials

Although this may be somewhat exaggerated, it is essentially an accurate description. The author, who has had ten years of managerial experience in information processing, most recently as manager of the processing and information department of the Royal Insurance Company Ltd. in Toronto, devotes more than 200 pages to planning, designing, and implementing information systems and managing information systems organizations.

He offers detailed, practical discussions of such nitty gritty of the field as logical file structures, project manuals, use of checkpoints and controls, expense performance, and documentation of standards. He ends with a comprehensive case study of how an information processing organization was developed and operated in the "ABC Finance Company." There are plenty of illustrations, a glossary, and an appendix of completed forms keyed to ABC.

Useful to professional managers

This is a book that should be useful to managers (and future managers) of systems and data processing organizations; to executives who are responsible for an information systems department without being themselves data processing or systems men; and to those who hold themselves up as advisers to either group.

The Institutional Imperative: How to Understand the United States Government and Other Bulky Objects by ROBERT N. KHARASCH, Charterhouse Books Incorporated, New York, 1973, 258 pages, $7.95.

By a Washington lawyer who has taken full advantage of his opportunities to observe bureaucracy in action, this book describes the pathology of human institutions in a humorous tone but with deadly serious intent.

"While those who prosper within a government agency or other institution sense the existence of institutional laws, their inner knowledge is never precisely stated nor reduced to writing. As a result," says Mr. Kharasch, "the inevitable results of the laws are often not foreseen—with often dreadful results.

"Even a President who should know much better will cry, as John Kennedy did after the Bay of Pigs: 'All my life I have known better than to depend on the experts. How could I have been so stupid . . .' To keep those folks who brought you the Bay of Pigs from bringing you similar spectaculars, a few written laws capable of predicting institutional behavior would be useful.

"Such laws will explain not only how things work when they work, but also why the Government and other institutions so often work very badly indeed."

The theme of this book is that there are "a few simple and inescapable laws of institutional behavior" that apply to all human institutions whatsoever. The author sets them forth in classic form—definitions, axioms, propositions, and then logically proved laws, with illustrations from real (mostly Washington) life.

He defines an institution as a "continuing recognizable group of individuals working together where the group's existence is not measured by a human life," and the internal machinery of the institution as "the patterns of work established for the individuals who are a part of the institution . . . Note . . . the distinction between 'the pattern of work' and the purpose of work. The pattern of the work set the Head Torturer is to torture by the accepted means of rack and thumbscrew. The purpose of the torture may be declared to be Protection of the Faith during the Inquisition, Protection of the Reich in Hitler's Germany, or Protection of Perversion in a motorcycle gang. Whatever the ostensible purpose, the pattern of work set for all Head Torturers is the same."

Mr. Kharasch's axioms, must, as he points out, be accepted on faith —but they are self-evident:

1. "Any institutional action is merely the working of the institution's internal machinery.

2. "Institutional existence depends upon the continual working of the internal machinery.

3. "Whatever the internal machinery does is perceived within the institution as the real purpose of the institution (i.e., function is seen as purpose.). . . What is usually said to be the purpose of our institutions is always something noble . . . but the significant operative purpose is what the worker within the institution thinks is the purpose. The Third Axiom states that the worker thinks the purpose of the institution is whatever the internal machinery does."

These axioms, Mr. Kharasch points out, are clearly circular in effect: "If whatever the institution's machinery does is perceived by the workers as the real purpose (Third Axiom) and the working of the machinery is the action of the institution (First Axiom), and existence depends on continued operation of the machinery (Second Axiom)—well, then the whole business is circular, self-perpetuating and without higher purpose." This leads to the prime directive controlling all institutional action, the Institutional Imperative . . ."Every action or decision of an institution must be intended to keep the institutional machinery working" and its corollary "To speak of any goal or purpose of an institution other than keeping the institutional machinery running is no more meaningful than to speak of the goal of an automobile exhaust or the purpose of the hum of a sewing machine."

The individual, says Mr. Kharasch in his definition of discipline, "is a part of an institution if, and only if, the individual accepts the institutional action as more important than his personal beliefs." His reason for accepting the decision is unimportant. It may be because he doesn't want to be fired; it may be because he will be imprisoned or shot if he doesn't—"When the commanding officer says 'Charge!' it is best to charge first and write your exposé of Army brutality later." Whatever the reason for accepting discipline, all that is required is that the individual accept it.

His basic reward for accepting discipline is his feeling that what he is doing is important. The Personnel Postulate ("Each action of the individual who is part of the institution affirms the importance of his work") is "a personal imperative declaring that whatever else my actions as a part of the institution may do, my actions will at least affirm the importance of my work."

These axioms, definitions, and postulate constitute the logical underpinning of Mr. Kharasch's work. From them he deduces all sorts of wild and wonderful laws:

"Law of Attributed Importance: Each institutional job will be given the maximum quantity of attributes of importance (activity, authority, security, urgency, panoply) which it can sustain." Recommendation: "Never attack the importance of an official's job. To tell a man his job is unimportant all but requires him to demonstrate its importance by denying you what you seek."

"General Law of Institutional Self-Occupation: If an institution can generate the subject matter of its operations, it will." Among the easiest things to generate are secrets. So long as there is a security office, threats to security will be

found. "Establish an office within the Church to find and deal with heretics, and heretics will be found (else the office machinery would come to a halt . . .). Let there be an institution to judge witches, and as long as that same institution can designate those suspected of witchcraft, witches will be found." Recommendation: "Do not allow those who act in an emergency to declare the emergency."

Then there are the laws of institutional self-justification and of the institutional irrelevance of truth, morality, and purpose. Mr. Kharasch goes on to apply his laws to specific institutions, including the Federal regulatory agencies (with which he seems to have had personal experience), Congress, the Pentagon, the foreign policy machinery of the United States, Ralph Nader, and business. He concludes with a set of "directions for assembly and control of institutions."

There is only one chapter on business, and it is limited to truth in advertising ("When the making of a statement is seen as necessary to the continued working of the institutional machinery, the statement will be made, and its truth is irrelevant . . . false or true, the advertising claim will be made if it is institutionally necessary"); new products ("The regular appearance of thousands of new products, of good, bad and indifferent merit, is likewise predicted by the Laws of Institutional Behavior. There are research departments, and sales departments and distribution departments, and they all function. . . the machinery exists and it operates, whether the new product is good or not and whether its production is a sensible profit risk or not"); and the now familiar thesis that profit is not the mainspring of business behavior ("If the business makes a good profit or a good product, both are secondarily desirable. First and foremost, however, comes the functioning of the machinery," i.e., institutional survival.).

But that does not really matter. Nearly everything that Mr. Kharasch says about Government is equally applicable to business, and his recommendations for institutional improvement—particularly his stress on defining the purpose before setting up institutional machinery—echo the prescriptions stated in much less lively terms by the best writers on management.

For Mr. Kharasch is not writing merely from his own experience, enriching though that seems to have been. He has read widely on bureaucracy, and his footnotes are as likely to quote Max Weber as Ralph Nader. His laws stand up well under the test of predictability. As he shows, the firing of Ernest Fitzgerald was inevitable under the Kharasch laws. So, chillingly, was the whole Watergate mess (although the book was evidently written too long ago to capitalize on that).

This is a brilliant and important book. As with Parkinson, its wit and readability do not obscure its fundamental seriousness and soundness (although Mr. Kharasch is more indignant than Parkinson since his chief target is immorality rather than mere waste). It may—certainly should—become another Parkinson.

Managing the Multinational Enterprise: Organization of the Firm and Ownership of the Subsidiaries by JOHN M. STOPFORD and LOUIS T. WELLS, JR., Basic Books, Inc., New York, 1972, 223 pages, $8.50.

This research study, part of a group that constitute the Harvard Multinational Enterprise Series, *explores the problem of organizational structure in American companies that manufacture as well as sell abroad.*

Managing a company that operates in many countries is a complex job, and the ideal organization structure for doing it has not yet been found. That is clear from the analysis in this book, which traces the evolution of management structure in 187 American companies with major operations abroad.

This book, its publishers claim, is the first large-scale empirical investigation of the organizational structure of multinational enterprises. The research was done through searches of published sources, interviews with the managers, and analysis of responses to questionnaires.

Trace development

The authors trace the typical evolutionary development of a multinational company's organization structure from the beginning, when the entire company, domestic and foreign, is administered under the basic functional structure through the divisionalized structure with an international division manager to the so-called global structure, in which the entire company is organized by product line, by geographic location, or by a combination of the two. They find a logical relation between organization structure and business strategies (or a lower profitability where it is lacking). At the end of the book they seek to forecast the direction in which the more sophisticated companies seem to be moving—toward more complex forms of organization structure, often involving multiple and overlapping lines of authority.

In a section of the book that is less interesting to those whose concern is management rather than business, they discuss the pros and cons of joint ventures versus complete ownership of foreign subsidiaries from the points of view of both the company and the host country.

This book, sophisticated in style but relatively readable, seems to be a faithful report on the practices and problems of the major American multinationals. Although it barely scratches the surface of the very complicated problems with which it deals, it should be of great value to smaller companies and newer companies in the international scene.

MIS: Management Dimensions by RAYMOND J. COLEMAN and M. J. RILEY, Holden-Day, Inc., 500 Sansome Street, San Francisco 94111, 1973, 103 pages, $9.95 (paperbound).

This compilation of articles from trade and professional journals emphasizes the managerial side of management information systems—particularly management's informational needs and how to design MIS to meet them.

The idea of this anthology was to combine the basic systems theory of management information systems with their design, implementation, and application. Stress is on management needs, on how organization structure and management can affect MIS and vice versa.

The idea was a good one, and the 44 articles (one from MANAGEMENT ADVISER) are well chosen. Following an overview article written by the editors and a group of basic papers, they cover the interaction between MIS and the organization; MIS as a subsystem of the total business system; pitfalls and problems of MIS, including problems in control and training; and MIS applications within diversified organization structures. There is also a bibliography.

The Failure of Success by ALFRED J. MARROW (Editor), amacom, a division of the American Management Association, New York, 1973, 339 pages, $10.50 ($8.25 to AMA members).

Job satisfaction has become a hot topic, thanks to the publication of the Department of Health, Education, and Welfare report on Work in America. *Thus this review of what some companies are doing to increase it is timely as well as useful.*

Both quality and productivity are declining in American industry, according to the editor of this book. "The present level of production in American organizations, particularly among the forty million workers in the service industries, is estimated by authorities as only 50 percent of the potential available from existing human skills, initiative and energy."

Both Taylor's scientific management and the semipaternalism of the old human relations school of management have significantly failed "to enlist the energies of employees so that each man works for the success of the organization and does not merely aim to do as little as necessary to hold his job" and to "establish a climate in which performance of all employees is high; where costs, absences, and turnover are low; where quality is everyone's concern; and where all people in the organization respect and trust each other."

Discoveries in the behavioral sciences over the past 25 years offer the best hope, in Dr. Marrow's view. They have been applied by only a few companies, but the results have been impressive.

"There are now enough case studies, gathered together here for the first time, to provide empirical evidence of how the use of these new methods can improve performance, increase satisfaction, and narrow the gap between an organization's potential and its performance," according to the author.

The subjects covered in the case studies range from how to pick the righ man for the right job to ways of motivating employees and from organization development to the effects of organizational stress on coronary heart disease. The techniques covered include job enrichment, team building, positive reinforcement, sensitivity training, assessment centers, group incentives, and participative management. Among the companies represented are American Telephone and Telegraph Company, Detroit Edison Company, Fieldcrest Mills, General Electric Company, J. C. Penney and Company, Exxon Corporation, PPG Industries, Sage Administrative Corporation, TRW, and even General Motors, once known as the bastion of authoritarian management.

The most interesting and best written of the case studies is that of Dr. Marrow's own company, Harwood Manufacturing Company, where participative management has produced startling improvements in productivity.

No claim is made that these techniques are easy to apply. One of the most fascinating little vignettes in the book is the case of the Harwood plant where an attempt to have employees sit in on problem-solving sessions greatly increased the turnover. The workers had concluded that a management so inept that it had to turn to the workers for advice was a threat to company stability and they had better find jobs elsewhere before the company failed.

Not all the contributors are as skillful writers as Dr. Marrow, who has eight successful books to his credit, and they do not all do an equally good job of explaining the techniques they used and the results they achieved.

This is, nevertheless, a valuable and inspiring book. It offers hope that the blue-collar blues can be cured and the tight white collar loosened.

MAGAZINES

What a Chief Executive Should Know About Major Project Management by W. GRAFTON BERGER, *Price Waterhouse & Co. Review,* Summer/Autumn, 1972.

Sound planning, good management organization, and effective communication is needed for major project success.

It seems ironic that academic research efforts and the resulting literature concentrate on major problems such as long-term financing, capital budgeting, and major projects while the majority of financial executives expend almost

all of their time and effort managing the less exotic daily operations of business. Yet it is this lack of familiarity in solving major nonrecurring problems coupled with the possible consequences that assures reader interest and justifies the research.

Major projects are unique

Major project management is of interest because of the characteristics which distinguish such projects from other operations. Each major project has a life cycle which begins as a conceptual solution to a long-range problem and ends when the resulting facility or system becomes operational. Further, the major project cuts across functional boundaries and requires new working relationships between departments. Although total cost is fully controllable at the beginning of the project, decisions made during the initial conceptual stage are so significant that ultimate total cost is largely committed before actual construction or development begins. Once the construction phase is entered, cost control becomes limited to efficient scheduling and control of resources.

The project management team

The management team should include managers from many areas. Persons with diverse skills are needed to: a) design and plan technical performance of the facility; b) monitor the quality, cost, and delivery of purchased components; c) supervise project assembly or implementation; d) schedule project activity; e) cost control; and f) project quality control and documentation. Personnel assuming these responsibilities occupy a position similar to a department head in a typical management system. Their activities are supervised by the project manager whose position is similar to that of a company president. His coordination and supervision should be guided by the overall policies, priorities, and goals established by a committee of top executives. Thus, the project management group is a complex subsystem of the business which is subject only to the control and guidance of the top management team.

Need for early planning

People who have built homes are aware that alterations to plans during construction are usually more costly than the same changes would be if included in original planning. Furthermore, problems will occur during construction even with the best advance planning. Major projects have the same characteristics. Sound early planning can minimize alterations during project construction and can yield substantial cost savings if options are provided for anticipated problems. Sound early planning also aids in: a) defining the scope of responsibility for project personnel; b) integration of design, procurement, and construction activities; c) development of meaningful budgets; and d) development of an effective information system.

Information planning

The design of a project information system should be an early project activity to assure that the system is operational on time. Mr. Berger points out that many major projects bear unnecessary risks because sufficient system development time is not allowed and the amount of data to be processed before the construction stage is larger than expected. Early planning also leads to better communication of information. If users of reports participate in the planning stage, they will be better aware of the underlying assumptions, alternatives, and goals which influence report formats and have the opportunity to specify the information needed for their future use. The types of information required are different from the types of information usually provided by a financial reporting system. Nonfinancial items such as percentage completion of various aspects of the project, deviations from the planned schedule, and shortages of materials are of vital importance. Such significant pieces of information should be screened and evaluated so that problems are highlighted to stimulate action. A summary of key items indicating a) developments since the last report, b) current problems with planned solutions or possible solutions, c) comparisons of completed activities to original plans, and d) near term critical project points should be provided to the top management team periodically. Appropriate key items with greater detail should be provided to key project personnel.

Efficient organization of personnel, sound planning, and effective communications as suggested in this article should increase the chances of major project success.

WILLIAM T. HARRIS, JR.
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Risk-Sensitive Markov Decision Processes by RONALD A. HOWARD and JAMES H. MATHESON, *Management Science—Theory,* March, 1972.

A Markov Process Method where decisions are assumed to be dependent only upon the immediately preceding decision is presented to include an individual's opinion concerning risk in expected return. Already useful in determining optimum strategy in a commodity market, this technique is recommended for investment and replacement decision analysis.

Professors Howard and Matheson present a method of including an individual's attitude toward risk into a Markov Process which assumes that the results of a given trial are dependent only upon the immediately preceding trial. An individual's utility function is consid-

ered as exponential with a risk aversion coefficient. A positive risk coefficient indicates that a person is risk averse. Conversely, a negative coefficient shows one who prefers risk. For any new proposal, a decision is assumed to be independent of the decision maker's current wealth. This allows the development of a recursion equation for the utility function.

The first situation considered is one in which the transition and reward matrices remain constant. The transition matrix includes the probabilities of moving from one state to another in one stage. The reward matrix is composed of the changes in wealth which result from changing states. A new matrix which considers both the amount and the utility of each reward is reviewed. By assuming that the certainty equivalence of each state is zero when there are no stages remaining, certain interesting conclusions are reached. As the number of transitions increases, the change in expected value approaches a constant called the "Certain Equivalent Gain." This represents the amount which an individual with that particular risk aversion coefficient would be willing to pay to increase the number of stages. At a given stage, the differences between states also approaches a constant. It is the amount a person in a particular stage would pay to change from one stage to another.

By considering certain properties of transition matrices, the Certain Equivalent Gain is found to be a linear function. It is also shown that the gain is bounded by the maximum and minimum rewards which are available. As a person approaches risk indifference, the solution becomes the expected reward for each transition.

Several modifications of the original situation are considered. First, the transition and reward matrices are allowed to change during the process. The optimum policy is found by solving for the best decision at each stage. Another alternative is one in which various alternatives are available only at the first stage. The solution is determined by a method similar to the policy integration procedure. In this method an arbitrary policy is selected and solved. Then a new policy is chosen that will improve the previous one. This is repeated until an optimum is found. Finally, the original problem is modified to include different risk aversion coefficients. This indicates that the solution is sensitive to changes in the coefficients.

This approach has been found useful in determining optimum strategies in a commodity market. It may also be applicable in the investment and replacement decision areas.

Necessary assumptions

The results are based upon certain assumptions about an individual's wealth and utility function. The use of the exponential utility function is justified on the basis of prior work. Due to the uncertainty associated with utility functions, this justification might have been presented. The conclusion is that the relationship between risk and wealth is questionable. However, this method is a useful approximation to a practical problem. It would be interesting to determine whether this assumption fits well into a Markov Process or gives decisions which approach other assumptions about risk and wealth. Despite these questions, the article appears to be an important contribution to the literature available to management.

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The Accountant's Role in Investigating a Potential Acquisition by DUANE R. WHITMARSH, *The Practical Accountant's Handbook*, Vol. II, 1972.

The author discusses the accountant's role in potential acquisitions and presents three areas which the accountant should investigate and evaluate.

A firm may acquire another firm for one of several reasons; e.g., to expand product lines, acquire management talent, obtain a source of raw materials, etc.; however, the primary or underlying factor is the potential for increased earnings. For this reason, Duane Whitmarsh says that the accountant should occupy a vital position on the "investigating team," and can provide special skills in three areas other than tax planning.

The accountant should examine the historical financial data of the seller and determine whether financial position and results of operations are presented fairly and in accordance with generally accepted accounting principles applied on a consistent basis. The extent of this investigation depends upon several factors, such as:

(1) Is the seller publicly held and subject to SEC regulations?

(2) Is the firm audited annually and how many years has the annual audit been performed?

(3) Is the buyer willing to assume risks in areas that eliminate verification procedures in other areas?

(4) Is the purchase price based upon historical financial data?

Taking the above factors into consideration, the accountant will determine the nature and extent of the examination and prepare an "investigation program." Mr. Whitmarsh presents one of several standard checklists available; but cautions that additions, deletions, or alterations should be made to the checklist if it is to be pertinent to any particular situation.

Analysis next step

Analysis and evaluation of the investigation's results is the next step, with the most important objective being determination of any trends in sales, expenses, etc., that might affect future earnings. Also, if the firm has more than one product line, allocation of costs should be examined. Comparison of the

seller's data should be made with that of other companies in the same industry.

Differences in methods

Alternative accounting practices cause substantial variations in reported earnings. The author presents an example showing how a firm's reported income could vary from a loss of 50¢ per share to a profit of $1 per share. The variation in earnings is the result of choosing the most liberal or most conservative accounting methods. For example:

(1) The use of LIFO inventory method instead of FIFO,
(2) Using accelerated depreciation methods instead of straight-line,
(3) Capitalizing research and development costs instead of charging the costs against revenue in the current period.

The accountant must determine the effect on earnings if the seller's historical accounting records are changed to conform to the accounting methods used by the purchaser.

Projections and pro formas

The accountant must assist in preparing pro forma financial statements and cash flow projections to estimate future earnings. As with any projection, the starting place is the assumptions upon which the projection has been built. The assumptions must be as realistic and as clearly stated as possible.

The most difficult assumption, estimating future sales, should be provided by the marketing department or an outside market research firm. After the establishment of the sales forecast, the accountant provides projected costs and expenses using the historical financial data as a base, and modifies the projections using other factors, such as:

(1) Will accounting changes affect future earnings?
(2) Will the acquisition be a purchase or a pooling of interests?
(3) Will key personnel of the acquired firm continue?
(4) Will additional investment in plant and equipment be necessary?
(5) Will salary and wage costs be affected favorably or adversely?

After all factors have been considered, the accountant prepares pro forma statements and cash flow projections for from three to five years. Historical trends may not continue for the combined companies; and changes in accounting principles can result in increased earnings immediately, while future earnings may not reflect the results of such changes.

The important role the accountant must play in any acquisition investigation (e.g., providing the management team with useful financial information to reach an intelligent decision), can be a stimulating and rewarding experience, Mr. Whitmarsh concludes.

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The (S-1, S) Inventory Model with Arbitrary Back-Ordered Demand and Constant Delivery Time by MARSHALL ROSE, *Operations Research,* September-October, 1972.

A description of an inventory model which considers the performance measures of: expected number of back-orders, expected resupply and stock-out times, and the probability distribution of resupply time.

Marshall Rose has carried the study of inventory control models one step further than prior studies. The major addition to this presentation is the consideration of the problem of tradeoffs between spare items and delivery time. In order to develop the model, Rose made a series of assumptions:

1. Demands are not lost while stock level is zero.
2. Demands for individual items occur daily.
3. There is a lapse of time between ordering and receiving inventory items.
4. Orders are processed for replacement items as time demand occurs, even if there is a supply of spare items on hand.
5. Demands are filled from current inventory whenever possible, but only after a specified time delay following placement of orders.
6. Orders may be delivered prior to lapse of time period; however, they are not considered filled until the time has passed.
7. The number of back-orders is considered to be the number of unfilled orders, including those for which the items have been delivered but the time has not elapsed.
8. Stockouts occur when a demand remains unfilled after the time has elapsed.
9. The number of units on hand, the time delay, and ordering time are non-negative numbers.

With these assumptions, Rose then formulates a quantitative model which measures the effectiveness of the system in four areas:

1. Expected number of back-orders.
2. Expected resupply and stock-out times.
3. Probability of a stockout.
4. Expected condition at stock-out time.

In evaluating each of these measures an additional assumption is made that delivery time is fixed and Rose develops the second phase of the model to describe the tradeoffs between spare items and delivery time.

In conclusion, Rose states that while this system is an improvement over a strictly "spare stock" approach, there are other methods available for inventory analysis, including overtime utilization and "back robbing" of parts for items which will be resupplied later to the end products.

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