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What People Are Writing About

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BOOKS

The Great Executive Dream: The First Myth of Management Is That It Exists by ROBERT HELLER, Delacorte Press, New York, 1972, 294 pages, $7.95.

A British journalist takes aim, not always accurately, but always entertainingly, at the management mystique.

Mr. Heller starts this book off with a bang: ". . . management, like the emperor's clothes, does not exist; the prime myth of management is that it does."

Actually, of course, he doesn't mean it, for he immediately contradicts himself a dozen times over. For example, six pages later he comments, ". . . there is seldom anything wrong with a company that better, or better-directed, executives won't cure." What is the meaning of better-directed if it is not better management?

What, then, does Mr. Heller really mean? In part, he means that he is skeptical of the idea that management is a set of skills independent of the business in which they are exercised and interchangeable among industries; "too many executives forget that they are not in management but in business." In

part, too, he means that no genuine science—or even discipline—of management exists as yet. Both are familiar ideas, a good deal less iconoclastic in fact than Mr. Heller's way of expressing them.

If Mr. Heller really believed there was no such thing as management, he would not have bothered to write a book about it (or rather, to be exact, assemble and amplify a group of essays that originally appeared in Britain's *Observer*). For this is unquestionably a book about management—even though an attempt to debunk its sacred cows—and Mr. Heller's choice of myths to debunk clearly follows the standard pattern set by

more positive approaches to management.

Like chefs, says Mr. Heller, managers need reliable maxims, instructive anecdotes, and no dogmatism. "This is a cookbook for managers who want to get their clothes back." Here, too, Mr. Heller reveals his true colors. Few, if any cookbooks, have been written by chefs who denied that there was such a thing as cooking.

Although it is full of maxims and anecdotes, this is not a cookbook either. It is an attack on certain familiar, though not universally accepted, assumptions about management. The language is extravagant, partly in order to attract attention, partly because Mr. Heller likes to write that way.

Mr. Heller is a gifted writer, although he is not always grammatical (he is prone to use "disinterested" where he means "uninterested" and "comprehensive" where he means "comprehensible") and not always clear. Some of his chapters, for example, those debunking computers, business schools, consultants, accountants, management techniques, and organization charts, lack any real point.

But when he is on target, he is very witty indeed:

On the myth of the "American challenge" to European management:

"In the new industries in which transatlantic hostilities have begun since the peace—chemicals, say, or convenience foods—Europeans have often had little trouble defending themselves, and Americans even less difficulty in losing glorious sums. Much of the superior quality of American management in Europe in fact consists of this endearing ability to suffer losses that would send most Europeans to the poorhouse . . .

"When a powerful commission under Lord Franks, a former British ambassador to Washington, compared the defects of British management with American virtues, it saw one prime difference. The Americans had myriad business schools, Britain none. Ergo, build

British business schools. . . . Nobody unkindly observed that the Germans, whose managers have also handily outstripped the British, had no business schools either."

On mergers:

"Managers can only buy three kinds of company—good, middling, or bad—and in only one of two circumstances—contested or uncontested (i.e., rape or seduction). The perfect combination seems to be the seduction of a truly beautiful company; but the seducer must usually overpay, since beauties are seldom bargains. He commonly overpays still more in cases of opposed rape, which commonly results in an auction. Maybe, the companies to buy are the raped, bad ones. . . . Even here lies no certainty; bad eggs make poor omelets. . . . It takes a very bright executive to make a merger into a success; and a very bright executive often is too bright to try."

On incentive compensation:

"By 1968, fully seventy-three of the one hundred [largest American corporations] had both stock options and incentive awards; another seven had incentive awards only; seventeen had stock options only; and three languished in the outer darkness of straight old-fashioned pay. Fewer than two-fifths of the goodie-stuffed seventy-three bettered either the median performance of *Fortune's* five hundred largest companies for ten-years' growth in earnings per share, or the median for profitability in that particular year. . . . The less directly a management's pay was tied to the company's profit performance, surprisingly, the worthier the performance became."

On decentralization:

"Only when senior managements change their entire life-styles, abdicate the interfering habits of a managing lifetime, and substitute the fair but demanding standards of a hungry investor, will decentralization be more than a myth—and often an expensive one."

On risk-taking:

"Theorists teach how to construct decision trees, heraldic devices of

scientific management; and how to marry the trees with probability theory, so that the degree of risk along each branch (each branch and twig representing alternative results of alternative courses of action) can be metered. But the measuring is spurious, and, anyway, the best management doesn't take risks. It avoids them. It goes for the sure thing."

On long-range planning:

"The last few years have seen errors of planning and missing of objectives on a macabre scale. . . . None of this has disturbed the planning industry one whit. The long-range planners have been striving to establish themselves as a separate breed. . . . Some American companies already have brilliant vice-presidents who spend half their year planning and the other half converting the plan into an action program for the next year. Which conveniently leaves them no time whatsoever for managing.

". . . What goes wrong is that sensible anticipation gets converted into foolish numbers; and their validity always hinges on large, loose assumptions. . . . The future . . . is pure uncertainty, limited only by the constraints of possibility. The manager . . . can limit that uncertainty by thoughtful anticipation. But, above all, if you want to master the future, you have to find out what is really and truly happening right now—and to make sure that it is happening right."

On new products:

"The genuine innovations, creating whole new markets, thrusting old companies into oblivion and new ones into preeminence, are so rare, and so rarely emanate from big corporations, that the giants are best off avoiding the chase. . . . All businesses need an old product policy—how to make the best of what the company has."

Reviewing this book in the *New York Times,* Robert Townsend, the former chief executive of Avis Rent-A-Car, criticized the author for not knowing much about management and for leaning too heavily on interviews with management

consultants (McKinsey & Company is quoted frequently and with reverence); they also, says Mr. Townsend, lack first-hand experience in management.

Mr. Townsend's criticisms are valid but not necessarily overriding. Real knowledge of management is necessary only if you want to write a constructive book, and this book is not meant to be constructive. It is a collection of random, often inconsistent, pot shots—and some of them hit home. Above all, it is a book that the author took great delight in writing, and that the businessman can take almost equal delight in reading. It should be read for its entertainment value alone—and how many management books are there of which that can be said?

The Psychology of Computer Programming by GERALD WEINBERG, Van Nostrand Reinhold Company, New York, 1971, 288 pages, $9.50.

Perhaps it is because so little has been written on this subject. Perhaps it is because of the author's witty, penetrating, yet tolerant and undogmatic style. Whatever the reason, this is one of the most fascinating books in the computer field that has been published for a long time.

Dr. Weinberg, a professor of computer systems at the School of Advanced Technology, State University of New York, says that with this book he hopes to pioneer a new field. His work is so convincing, however, that it may run the risk of being accepted as a Bible of programing management rather than as a ground-breaker for further research.

From this book the nature of the computer programing process and the way programers work emerge with unprecedented clarity. Some of the author's conclusions are supported by small-scale research (conducted by his students);

others, he cheerfully admits, are entirely his own opinion based on personal experience. Some are familiar; some challenge accepted assumptions; some hit the reader with a shock of belated recognition; all have a ring of truth that rarely comes through in a business book.

What does "good" mean?

Dr. Weinberg starts by trying to analyze what makes a computer program good, but (after suggesting that more supervisors should make a practice of actually reading programs) he concludes that the question "is not a simple one, and may not even be a proper question." Similarly, he decides that . . . "we cannot say what is a 'good programmer,' 'a good programming manager,' or, for that matter, 'a good piece of software.' . . . we should refrain from using the concept 'good program' or 'good programer' as if it were something universally agreed upon, or something that even *can* be universally agreed upon, or something that even *should* be universally agreed upon."

Instead, he decides to describe, in detail and with liberal use of highly illuminating anecdotes, how programers actually work, in groups, in teams, on a project basis, and individually. In the process he touches on every aspect of programing psychology that is important to management, including organization, leadership, aptitude testing, training, compensation, and choice of programing tools. (Only the last section is in any way difficult for a nonprogramer to follow.) And in the process he gently debunks a number of standard practices and assumptions:

On organization of the programing team: ". . . the basic rule for size and composition of programming teams would seem to be this —for the best programming at the least cost, give the best possible programmers you can find sufficient time so that you need the smallest number of them. When you have to work faster, or with less experi-

enced people, costs and uncertainties will rise. In any case, the worst way to do a programming project is to hire hordes of trainees and put them to work under pressure and without supervision—although this is the most common practice today."

On discrimination in hiring: "Anybody who thinks Scotsmen are cheap can point to an example of a Scot who saved little pieces of string; anyone who thinks Sicilians are gangsters can show you a newspaper clipping to 'prove' his case; and any manager who won't promote a woman can point to a case where a woman was promoted and then left to have a baby or to follow her husband to his new job. And, of course, if a woman doesn't have babies or follow her husband, he says, 'What kind of a woman is she?' . . . Although prejudices against other groups can also be serious matters, the prejudice against women is so common in programming that it merits special attention. Possibly the greatest single action to relieve the shortage of programming and programming management talent would be to start treating women as true equals —if indeed they are only that."

On efficiency: "When Parkinson said that 'work expands to fill the time allotted,' he was making us aware that the very existence of scheduled goals can influence the rate of work. But now we see that the very existence of schedule as a *goal* can influence 'the time allotted.' The reason work can expand to fill the time allotted is the existence of other goals whose importance relative to scheduling is not made clear. Perhaps we might follow this line of reasoning and begin to understand what fallacies underlie the generally accepted conclusion that programming projects can never be done on time."

On testing: "But for actual programming performance, on commercial programs rather than 'toy' programs, we lack any aptitude measure at all, except perhaps for general intelligence. For myself, I believe that intelligence has less

to do with the matter than personality, work habits, and training. These things, unlike intelligence, can be changed by experience later in life, which turns the problem from one of *selecting* programmers to *creating* them. In other words, good programmers are made, not born; therefore we should turn our attention to the manufacturing, or training process."

On training: "The one factor that saves us in the computing education business is the computer itself —ever silent, ever patient, ever teaching the programmer who has but the skill to learn. Perhaps we should set as a goal for our schools merely to leave the students alone, so that they do not turn off to learning before they get on the other end of that log with the real teacher of us all. It may be expensive, it may be inelegant, it may be old-fashioned, but for programmers, computer assisted instruction (but not CAI!) is still the best."

Dr. Weinberg's principal pitch is for a style of programing he calls "egoless programming," in which programers turn to their peers to have their work checked at every stage of the program without loss of face, jealousy, or ego involvement. He makes a good case for this technique and explains fairly clearly how to create the proper environment for it.

That, of course, is primarily a task for management, and, although, programers will learn much from it, this is primarily a book for management, both the employers of programmers and the users of their work. Dr. Weinberg has tried, he says, "to make the book interesting and nontechnical, insofar as is possible, so as to encourage the greatest number of people to read it: not just programmers, but programming managers and others connected with programming in the many ways we are connected with programming these days. . . . There are, by various estimates, hundreds of thousands of programmers working today. If our experiences are any indication, each of them could be functioning more efficiently,

with greater satisfaction, if he and his manager would only learn to look upon the programmer as a human being, rather than as another one of the machines."

That is why this book is a must for everyone who works with computer programers. Reading it—unlike nearly every other book written on programing—will not be a painful task. Managers will actually enjoy it.

Acquisition Behavior of U. S. Manufacturing Firms by H. IGOR ANSOFF, RICHARD G. BRANDENBURG, FRED E. PORTNER, and H. RAYMOND RADOSEVICH, Vanderbilt University Press, Nashville, Tenn., 1971, 146 pages, $7.95.

This study of the techniques and results of acquisitions provides, its authors claim, the most rigorous analysis yet of two basic questions: Do mergers constitute a more promising growth method than internal expansion? Does deliberate and careful planning of merger activity produce more successful results than unplanned opportunistic behavior?

These authors studied the motivations, techniques, and results of 271 companies that had made acquisitions between 1946 and 1965 and compared them with 271 other companies that had grown by internal means to investigate the relationship between growth method and firm performance.

The planning, search, evaluation, and integration processes used by the acquiring firms were studied through the use of an extensive questionnaire. Performance on a number of standard financial measures was calculated for all the companies through use of the data on Standard and Poor Compustat' tapes. Performance and the method of growth were then correlated to see what worked best.

Factors such as growth rates, sales, earnings, total assets, dividends, stock price, equity, payout, and price/equity ratios were compared. Companies that had grown

by acquisition were found to hold an unmistakable edge in earnings on total capital over firms that had not made acquisitions; otherwise, the acquiring firms did not perform better than the firms that had grown by other means.

Acquiring firms generally exhibited a tradeoff in accomplishment. Companies already considered to be high-growth firms suffered a loss in growth characteristics but improved their price/earnings ratios. Low-growth firms improved their growth images, but their price/earnings ratios usually declined.

Most of the acquisition programs studied tended to polarize into either well planned, systematic efforts or opportunistic, random activities. Not surprisingly, companies that went about their acquisition programs methodically, analyzing company growth and need for expansion, determining the sort of acquisition that would best meet their needs, searching for the most appropriate companies to approach, and following through carefully in negotiations and in integrating the acquisition, outperformed the companies that acquired or merged as the opportunity presented itself, without conscious planning. Not only were the planners' financial averages higher on the average, but they produced fewer cases of extremely poor performance.

Conclusion: Acquisition is not inherently a better way to grow than any other, but planning is always better than improvisation.

Abundantly illustrated with tables, figures, and charts, ponderously but clearly written, this book is probably useful in most would-be merger situations, and to mergees, and their consultants—although its conclusions are beginning to be familiar by now.

Correction — The price set for *Planning and Control in Management: The German RPS System* by Walter and Ranier Schleip (Peter Peregrinus Limited) is £2.25, not $2.25 as was reported in our last issue.

Organizational Diagnosis by HARRY LEVINSON, Harvard University Press, Cambridge, Massachusetts, 1971, 557 pages, $20.

Dr. Levinson, who helped to pioneer the field of industrial psychiatry while on the staff of The Menninger Foundation, here attempts to adapt some elements of medical diagnosis to organizational diagnosis—via an "audit" outline derived from psychoanalytic theory.

The very factors and forces that have always made it difficult to measure the effectiveness of business organizations—namely, the human element—actually dictate what an adequate diagnostic process should be, Dr. Levinson says in the preface to this book:

"An organization is a living system. It has components which, taken together, comprise its whole. These components interact with each other and the whole with other wholes and its own environment. It grows and develops, has a history, experiences crises, and adapts. An organization, then, is like any other living system. Therefore modes of systematically studying and evaluating other systems might be extrapolated to the study of organizations."

This was the theory which led the author to develop this system of management evaluation. He began "with a crudely extrapolated outline which I used for teaching Fellows in The Menninger School of Psychiatry. My intention was to have them extend the basic examination method in which they were trained to the study of organizations."

This book is the result. It consists largely of a highly detailed outline for use in organizational analysis (really a psychiatrically oriented management audit questionnaire although not in questionnaire form) plus an extended case study illustrating its application. The outline itself, which explains how to note, assess, and diagnose the various facets of an organization's history, current actions, and directions

and suggests a method of integrating these data into a comprehensive description from which the organization's strengths and weaknesses should emerge clearly, is supported by discussion of such standard problems for the consultant as how to enter the organization, how to present oneself to management and employees, how to gather data, how to organize and integrate the material, how to prepare a report, and how to feed it back to the organization. Each step is illustrated by examples drawn from organizations ranging from major corporations to parish churches.

The heart of the book is the outline, which, with its explanation, takes up more than 300 pages of not very large type. For the most part it covers, in incredible detail, the same ground that any consultant would cover. There are, however, a number of psychiatric touches that might well prove disconcerting to an accounting-trained analyst.

Some examples: "Assessment of the discrepancy between reality and perceived reality"; "Emotional atmosphere of the organization"; "Masculine-feminine orientation of the organization"; "Space: How is it conceptualized?"; "Psychological contract unfulfillment"; "Third- and fourth-order adaptive activities."

The consultant who has not been trained in psychoanalysis may well be intimidated, not only by the terminology, but also by the requirement to evaluate factors he has not been trained to assess. Yet Dr. Levinson evidently is offering his outline as a possible manual for the use of nearly any management consultant. He says, "Although the concept of the outline arises from psychoanalytic theory and clinical practice, combined with organizational theory, it should serve a wide range of people who have varied orientations and skills. Most of the fundamental data should be the same for all."

How effective some parts of this framework for analysis would be in the hands of consultants not trained in psychiatry, or even psychology,

is a question. The casual way in which Dr. Levinson offers it for general use is startling, particularly in view of the jealousy with which analysts and psychologists usually guard their prerogatives. As they are fond of pointing out, a little bit of amateur psychiatry can often be dangerous. For the consultant who is prudently aware of his own limitations in this area, however, this book should offer many useful insights.

Briefly listed

Concepts for Corporate Strategy: Readings in Business Policy by JOHN W. BONGE and BRUCE P. COLEMAN, The Macmillan Company, New York, 1972, 603 pages, $6.95 (paperbound).

This collection of 48 articles on various aspects of business policy contains material on management systems; the role and perspective of top management; goals, strategies, and long-range plans; situation assessment; administrative functions; expansion and contraction; international operations; and social and political involvement.

MAGAZINES

Environmental Complexity and Financial Reports by HENRY MILLER, *The Accounting Review*, January, 1972.

A discussion of the possible applicability of psychological findings in the area of human information processing to the information-overload problem of financial statements.

Henry Miller has expanded upon and drawn implications from arguments by Lawrence Revsine which appeared in Revsine's article "Data Expansion and Conceptual Structure," in the October, 1970, *Accounting Review*. In his article, Revsine noted that psychological studies suggest there exists an optimum

level of environmental complexity at which an individual is able to process a maximum amount of information. Individuals vary in their conceptual structures; individuals with concrete conceptual systems are able to assimilate only relatively simple amounts and dimensions of data, and tend to react to the information in a fixed (somewhat non-thinking) manner. Others, with abstract conceptual systems, can deal with much more complex and multidimensional data, obtaining from it meaningful relationships, combinations, comparisons, etc. Studies have shown, however, that when a certain point of environmental complexity is exceeded, individuals' abilities to synthesize and deal meaningfully with the information decrease as more detail is presented (regardless of the relevance of the additional details), whether they are operating from concrete or abstract conceptual systems.

Revsine notes that although this model (relating environmental complexity and the spectrum of conceptual structures from concrete to abstract) "is not yet demonstrably relevant to the problem of data expansion" in financial reports, there is a possible dysfunctional effect of increases in the environmental complexity (data-expansion in financial reports). He suggests that empirical testing of the applicability of the model to an accounting context be carried out.

Miller points out in his article that the study from which Revsine drew his implications for further research relied on individuals' functioning in a constant (admittedly complex) environment, and receiving the same set of information, whereas individuals concerned with the performance of a firm have differential access to relevant data—i.e., accounting reports, the state of the economy, industry-wide trends, advice of financial advisers, etc. Given a scale of all possible levels of environmental complexity, different classes of individuals would have access to differentially complex information. Therefore, individuals' optimum levels of environ-

mental complexity could very well occur in different areas along the scale of all levels of complexity, depending on their access to information.

To Miller, the most obvious implication from the studies is that unlimited data expansion, as has been suggested in recent years, will lower the conceptual levels of financial statement users.

Miller also says that the relevance (to users' decision models) criterion for determining which information should be included in financial reports will have to be modified or limited by variations in conceptual structures of users, because too much information, though relevant, will lower users' conceptual levels.

Financial statement complexity

Financial statement information can be geared as to complexity anywhere along the spectrum from the most concrete to the most abstract processors. Miller's solution is to choose the financial analyst's optimal environment, which he supports by noting that analysts' advice is filtered to other information processors' environments on a wide-scale basis. Also, he considers financial analysts to have the most abstract conceptual structures of financial statement users, and, if a less abstract group of processors were selected, the "opportunity to educate users so they may develop more abstract processing ability" would be eliminated.

Miller elaborates upon Revsine's suggestions for empirical research by proposing to test whether the environment is chosen or constant, and by suggesting that information formats be tested with the goal of maximizing financial analysts' abstractness.

Miller implicitly assumes that "success" can best be achieved for all users by achieving the optimum environmental (financial-statement) complexity for those with the most abstract structures, financial analysts.

KATHERINE HOHL
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Computers: Their Use and Misuse by JOEL E. ROSS, *Business Horizons*, April, 1972.

In spite of the transformation of clerical and accounting operations through the use of computers, Mr. Ross believes that computers have had little effect on the operating problems of management. Mr. Ross lists four causes of the failure to obtain economic benefits from computer operations. He then lists some specific do's and don'ts of computer use, followed by six steps of an approach to designing a computer system.

Mr. Ross states that, although the computer has extensively transformed the accounting and clerical operations of a business, it has had little impact in the area in which it has the largest potential payoff.

Only a very few companies (e.g. Pillsbury, Weyerhauser, and Westinghouse) can justify their computer operations on a purely economic basis. The failure to obtain economic payoffs from the computer can generally be traced to four causes. First, an information system can never substitute for a management system. The lack of managerial and operational applications of the computer is serious because it implies that the management functions of planning and control are not being performed effectively. This lack of a management system can never be corrected simply by installing a computer. Second, the author explicitly states that top management must be involved in all major decisions relating to the computer. Major computer decisions are too vital to be left solely to computer technicians. Third, a communication gap exists between the manager who knows what he wants and needs and the computer technician who understands the capabilities and limitations of the computer. Fourth, many companies have failed to organize properly their computer operations in relation to their total organizational structure.

Mr. Ross then lists some specific

do's and don'ts of computer use.

The Don'ts of Computer Use—
(1) Don't buy a turnkey operation. Systems are more likely to work if you design them yourself. (2) Don't spend all your money on hardware. Money can be spent more profitably on new applications and development. (3) Don't let computer salesmen and the data processing manager make computer decisions. Their expertise is in the area of computer operations, not management improvement. (4) Don't underestimate the time and expense of developing a system. Such underestimates are detrimental to both the cost of the system and the creditability of the company. (5) Don't fall in love with your system. If the system does not work, it must be scrapped before more money is lost. (6) Don't try to install a management information system without a management system. A successful management information system can only be built on top of a good management system.

The Do's of Computer Use—(1) Do get management involved. Involvement of management in systems design is essential for closing the communication gap and getting profitable applications. (2) Do "eyeball" the output. Simple human examination of the output can catch expensive, embarrassing mistakes. (3) Do upgrade your clerical systems. Many managerial and decision-making applications can be implemented through your clerical staff. (4) Do put proposed projects to the feasibility test. A system must be judged feasible before it is purchased. (5) Do develop an MIS plan. The establishment of an MIS plan will offset uncertainty, improve economy of operations, focus attention on objectives, and provide a device for control of operations.

In conclusion, Mr. Ross sets forth six steps in systems design that a manager must participate in if he wishes to develop a profitable computer operation. First, he must help set system objectives. These objectives must not be vague generalities, but rather clear, concise state-

ments of what the user expects to achieve.

Second, he must help identify the internal and external constraints that will cause the manager to settle for a system below the "ideal" one.

Third, he must help to determine specific information needs and the objectives they are designed to satisfy.

Fourth, he must help identify the information sources necessary to meet the informational needs which are used to achieve the system objectives.

Fifth, he must help apply the system concept to the data flow, i.e., the form and content of the inputs to the computer and the outputs from the computer.

Sixth, and last, he must help test and implement the system. It is important to remember that the old system must not be discarded before the new one is operational and proven.

James M. Krueger
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The Emerging Cost Revolution In Data Processing Technology
by Herbert W. Robinson, *Business Management*, August, 1971.

There is an increasing emphasis in business periodicals on effectively utilizing the vast computer capabilities made available through advances in data processing technology. In this article the author advocates the use of time sharing terminals to avoid excess in-house EDP capacity.

American business is now in a period of attitude readjustment concerning the elaborate computer systems it has created, and the professional staff required to run them. In too many cases companies are now utilizing less than half of the capability which has been created and are not receiving any of the cost benefits originally anticipated.

Mr. Robinson feels that we will soon see new developments in the modes in which computers are used

in an enterprise. These advances will be in the area of "giant central computers capable of being utilized effectively and simultaneously at a large number of remote locations, over existing common carrier lines and through low cost input/output terminals." The obvious advantage here is that the individual company pays only for the data processing time it uses.

By connecting a large number of remote terminals to the central processing unit a continuous flow of processing can be achieved to lower the cost per computation. Another advantage of a large central computer is that the limitations imposed by smaller size in-house computers are removed and a wider range of applications can be achieved. Cost savings can also be realized through the use of existing communication lines (i.e., telephone lines) which charge only for the service provided. Computer costs are directly related to operational requirements, and, therefore, can be quantified and more easily controlled.

Software costs are also decreased by the use of time-sharing equipment due to an absence of repetition in programing requirements. A package of generalized programs is available to all users with only nominal modifications needed for individual requirements.

The time sharing facilities can be utilized by the medium- or large-scale user, who already has an in-house computer system, to handle additional processing during peak periods. This allows the business to plan its computer system on the basis of normal operations rather than on the basis of peak periods. The excess capacity that would be created during less than peak periods can be eliminated. As the company's overall needs increase the additional capacity acquired can be kept below total requirements to assure that all facilities are utilized on a 100 per cent basis.

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