

Management Services: A Magazine of Planning, Systems, and Controls

Volume 3 | Number 3

Article 10

5-1966

What People Are Writing About

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Recommended Citation

Davis, Frederick G.; Dockweiler, Raymond C.; Walworth, Richard B.; and Arbesfeld, Shirley M. (1966) "What People Are Writing About," *Management Services: A Magazine of Planning, Systems, and Controls*: Vol. 3: No. 3, Article 10.

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what people are writing about

BOOKS

Divisional Performance: Measurement and Control by DAVID SOLOMONS, Research Foundation of Financial Executives Institute, New York, 1965, 307 pages, \$12.50.

This is a clear and comprehensive analysis of the problems of financial control in the company that organizes its operations into divisions that have profit-and-loss responsibility. It may not be the last word on the subject, but for a company considering such an organization structure it might well serve as the first.

Growth and diversification have led many companies to adopt divisionalized organization structures as a means of decentralization. (A division is defined by National Industrial Conference Board organization specialists as "a company unit headed by a man fully responsible for the profitability of its operations, including planning, production, financial and accounting activities, and who usually, although not always, has his own sales force.")

In theory, at least, it is easy to measure the success of each division and reward division managers accordingly — by profit contribution. In practice, unfortunately, it is not so easy to find a financial

yardstick that will really evaluate the division's contribution to corporate success. That is the reason for this study.

In his investigation Professor Solomons studied the operations of 25 large companies at first hand. His purpose, however, was not to report existing practices but rather to uncover the pros and cons of various types of financial relationships between the headquarters management of a divisionalized company and its division managers and then to make recommendations that would promote more effective coordination and control.

The result is a sophisticated yet simply written exposition that presents the author's answers to (or

REVIEW EDITORS

In order to assure comprehensive coverage of magazine articles dealing with management subjects, MANAGEMENT SERVICES has arranged with fifteen universities offering the Ph.D. degree in accounting to have leading magazines in the field reviewed on a continuing basis by Ph.D. candidates under the guidance of the educators listed, who serve as the review board for this department of MANAGEMENT SERVICES. Unsigned reviews have been written by members of the magazine's staff.

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Management Services: A Magazine of Planning, Systems, and Controls, Vol. 3 [1966], No. 3, Art. 10 at least guidelines for answering) most of the major questions that arise in this field:

What should be the financial standard for evaluating performance? (Professor Solomons favors what General Electric calls "residual income" — the excess of net earnings over the cost of capital— instead of net profit or return on investment.) Are generally accepted accounting principles directly relevant to divisional accounting? (Professor Solomons thinks not.) How should responsibilities be divided between corporate staffs and divisions? How should products transferred between divisions be priced so as best to serve the interests of both divisions and the parent corporation?

Opinions

Not every business man — nor every student of these much debated problems — will agree with all of Professor Solomons' conclusions. All, however, should find his judgments illuminating.

Obviously, this book is primarily for and about large companies. Divisionalization, as Professor Solomons points out, is an organization structure that is best suited to relatively large corporations — and not even to all of them.

Small companies

This does not mean, however, that there is nothing at all in the study for small-company executives and accountants. As Professor Solomons concedes in his introduction, at many points the study shows a tendency to turn into a general examination of management accounting. Many of the problems discussed — for example, how to charge using departments for service departments' time — are not unique to divisionalized companies. And some of the material presented as background — on such matters as depreciation, direct costing, and LIFO — is widely applicable.

One of Professor Solomons' prin-

cipal conclusions has little to do with divisionalization. "Many companies," he warns, "are paying a substantial, though concealed, price for tax savings when, in the pursuit of these savings, they adopt accounting methods which do not serve the needs of management and may even positively mislead it." The smaller-company executive may find the book worth reading for this point alone.

Sampling by MORRIS JAMES SLOININ, Simon and Schuster, New York, 1966, 144 pages, paperback, \$1.45.

This lively little volume provides a painless — even pleasant — way for the business or professional man to absorb some basic, and highly useful, principles of statistics.

A reprint, and expansion, of the same author's *Sampling in a Nutshell*, this book achieves the near impossible; it makes statistical sampling seem both simple and entertaining. The author, a government statistician with military and Census Bureau experience, originally wrote it for the instruction of Air Force statistical personnel. This version is aimed at executives, accountants, and auditors.

The major aspects of the subject that concern this audience are covered in the book in a light, clear style without reliance on ponderous terminology or complex mathematics.

Such basic terms as universe, sampling error, and confidence specification are defined. Major sampling techniques — including probability, random, stratified, cluster, and systematic sampling, are described. Estimating procedures and methods for determining sample sizes are explained. Steps in a sample survey are listed.

In addition, Mr. Slonin offers a host of practical examples of the application of statistical sampling, from quality control and inventory

taking to market research and public opinion polling. One chapter describes applications of the technique to accounting data.

The accountant or consultant who reads this quick guidebook will probably still need the help of someone trained in statistics to set up a statistical study. But at least he will know what the statisticians are doing.

Genuinely elementary yet technically sound, this volume belongs in every management services department and in every accounting firm.

MAGAZINES

Network Techniques, *Management Controls*, February, 1966.

A special issue on the characteristics and management uses of CPM, PERT, and other network techniques. Two of the articles are reviewed here.

Critical Path Method — A Technique For Project Planning by D. J. Deeks and A. J. Reynolds discusses the distinction between PERT (Project Evaluation Review Technique) and CPM, clarifies terminology, traces the steps in the preparation of the diagrams, and considers the pertinent problems entailed in diagram review and analysis.

This article is definitely a primer written for those completely unfamiliar with PERT or CPM. It is, however, an excellent introduction to this management technique. The basic terms are defined and illustrated. The basic steps in the use of the Critical Path Method are described and illustrated with a summary outline of a program for the development and implementation of a billing system on EDP equipment.

The authors find CPM a significant addition to the techniques available to management in planning, controlling, and evaluating projects. The value of these systems is in the discipline of prior detailed analysis they impose and the moni-

toring and control features they offer.

CPM Network and Current Billing Engagements by William G. Morrison tells how CPM can be used as an aid in management consulting engagements involving major systems design and installation. This article describes the use of CPM by reference to an engagement in which a state highway department was assisted in implementing the U.S. Bureau of Public Roads Current Billing Program.

The article presents a background sketch of the U.S. Bureau of Public Roads Current Billing Program. This program requires that a state design and implement a comprehensive system of accounting, fiscal, and operating controls that meet the standards of the Bureau of Public Roads. On an engagement to assist a state in implementing this program, this firm was requested to include a CPM network in its proposal letter. This network is presented as one of the exhibits in the article.

This type of billing engagement is a major undertaking and requires proper planning and control. One of the traditional tools used on large engagements of this sort is a Gantt chart, which is illustrated. Mr. Morrison feels that the Gantt chart and CPM complement each other and may be used together quite effectively. The main weakness of using only a Gantt chart is that only activities requiring manpower resources are scheduled. Such critical activities as obtaining approvals or ordering equipment, which do not appear on a Gantt chart, do appear on the CPM network. It is this ability to interrelate activities that do not consume resources with those requiring the expenditure of manpower that makes CPM such a valuable tool.

On the other hand, the CPM network normally does not indicate elapsed time, so there is no way to tell what activities should be under way at a given time. Likewise, except for the activities on the critical path, it is impossible to determine exactly when a given activity will start or finish. Both

Davis et al.: What People Are Writing About of these items can be used directly from the Gantt chart.

FREDERICK G. DAVIS, CPA
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The Case Against Incentives by E. B. WATMOUGH, *Journal of Industrial Engineering*, November-December, 1965.

The author, a professor with many years of industrial experience, argues that wage incentives are — and should be — losing favor in industry. He urges better supervision as a substitute.

A generation ago incentive pay plans were widely viewed as the solution to the problem of production workers' productivity. Today, Professor Watmough claims, many standards specialists are completely disillusioned.

This disenchantment stems, he says, "not from philosophical disagreement with the basic incentive idea but from the endlessly recurring mistakes most of us have seen . . . in the installation, administration, and maintenance of the many incentive systems presently in operation."

Armed with a wealth of anecdote, the author cites a number of examples of misuse and abuse of incentive plans — wildly fluctuating earnings, pay inequities within the plant, a time study department headed by a watch repairman, workers earning piecework rates to remake items they had originally earned bonuses for spoiling. "These situations sound utterly fantastic," Professor Watmough declares, "but they exist in reputable plants" and, he claims, they are more typical than exceptional.

It is far better, the author maintains, to hire good workers and give them competent supervision. Work simplification, methods improvement, and quality control are all easier without the complications of incentive pay.

As an example of the right way, Professor Watmough cites a Midwestern plant in which the fore-

men have had 90 hours of standards training and now are setting their own standards — half again as high as the ones set by the industrial engineers — and enforcing them.

Professor Watmough's attack on incentives may not be correct, but it is provocative. Executives who are considering the use of incentive pay plans in either plant or office would do well at least to consider his arguments before diving in.

Some Consequences of the Leasing of Industrial Machinery by SAUL ENGELBOURG, *The Journal of Business*, January, 1966.

This analysis of the economic effects of marketing industrial equipment only on a lease basis finds few advantages in the policy — except for the lessor. The author concludes that antitrust action is desirable.

The author examines the impact a lease-only marketing policy has had upon (1) the stability and rate of earning power of manufacturers and lessors of industrial machinery, (2) the market structure and market power of such lessors, (3) the conditions under which a new company has been able to enter the industries of either such lessors or of their lessees, and (4) the amount and type of research conducted by lessors as compared to sellers. He uses as illustrations the business histories of five prominent manufacturers (United Shoe Machinery, Hartford-Empire or Emhart Manufacturing Co., AMF, American Can, and IBM) that have until recently practiced a lease-only marketing policy.

There seems to be no reason to believe that leasing would or should produce a higher rate of profit in the long run than selling. Although history has demonstrated a relatively stable earning power for these five lessors, leasing deserves only partial credit for this phenomenon, i.e., to the extent that the return on any machine is spread out over its useful life rather than recognized entirely in the year of

sale. Other factors such as a stable demand for the products of lessees and the already established monopolistic market positions of these lessors have also been significant.

Leasing has been credited with increasing the ease of entry and thus increasing competition in the industries of lessees. However, other factors such as the nature of the lessees' industries have also been important, and, the author feels, the overall effect of leasing itself has probably been relatively minor.

Leasing has been said to encourage research because of the lessor's continuous access to the problems of lessees. However, sellers as well as lessors are in close contact with their customers and also are aware of existing problems in users' industries. The author believes, rather, that the monopolistic market power of lessors such as the five he studied may have resulted in innovations being withheld from the market or priced above their cost whereas the quantity and diversity of research under more competitive conditions might have been greater.

Monopoly

The major consequence of leasing has been its tendency to help preserve the market power of lessors. Leasing did not create the monopolistic position of any of the five lessors studied, but it contributed to the maintenance of their market power by raising barriers to competition. Provisions in lease contracts created long-term commitments, which required that the lessor be the sole source of maintenance and repair services, which restricted the use and modification of leased property, and which tied to the lease contract the purchase of related machines and supplies. This has had the effect of making entry of potential competitors less likely.

Thus Mr. Engelbourg concludes that even though the antitrust actions taken in recent years against these large lessors did not immediately alter the market structure

and conditions of entry in these industries, they were moves in the right direction. "Public policy should strive to prevent existing market shares from being frozen."

RAYMOND C. DOCKWEILER, CPA
University of Illinois

Capital Budgeting: Principles and Projection by C. G. EDGE, *Financial Executive*, September, 1965.

This article is, essentially, an attempt to formulate those principles and practices which have proved useful in evaluating capital expenditure proposals. These principles, which represent a distillation of practical experience, are arranged by the author in such a manner as to "constitute . . . a step-by-step approach to the successful programming of a capital budgeting operation."

Mr. Edge groups these principles into six categories: fundamentals, method, estimating and measuring data, financing, support for an appropriations request, and administration.

In setting forth the *fundamentals* underlying capital budgeting, the author discusses a number of basic concepts. Among those mentioned is the cost of capital, which is defined as the weighted average of the cost of both debt and equity funds. Some allowance over and above the cost of capital should be included in arriving at the minimum acceptable return on investment; the amount of the allowance is dependent, in part, upon the degree of risk associated with the particular investment. The minimum acceptable rate of return on investment is regarded by the author as "the basic criterion against which the economic benefit of a project is judged." This minimum return is not intended to be an inflexible standard, however, since in some circumstances investments yielding a lower rate of return might be justified in view of their intangible benefits.

The *method* advocated by the author for use in evaluating different investment opportunities is known as the discounted cash flow method. Using one variation of this method a rate of discount is determined in such a way that the present value of all future income streams associated with a project is just equal to the present value of the amount invested. This discount rate (labeled the discounted cash flow rate of return) may be compared with the minimum acceptable rate of return established for the investment or with similar discount rates computed for other projects. In this manner a measure of the desirability of the investment opportunity is obtained.

Data accuracy

The author points out that the soundness of the appraisal of any investment is dependent on the accuracy achieved in *estimating and measuring data*. Those factors which must be estimated in attempting to ascertain the rate of return for a given investment include project cost, future yearly benefits, and expected life of the project. The author emphasizes that in attempting to appraise an investment opportunity all relevant costs and benefits should be considered. If the profitability of the company as a whole is not evaluated, misleading conclusions may be reached. That is because while an investment may greatly enhance the earnings of one particular department, the effect on the company as a whole may be quite unfavorable. Thus, the "total company viewpoint" should be adopted.

Financing

Considering the *financing* of projects, the author concludes that "the economics of a project should be evaluated separately from the method of financing it." He feels that the manner in which an expenditure is to be financed should be determined by the treasurer of the company. It is the responsibility of the operating manager to set

forth the desirability of the project itself in an appropriations request. Therefore, the anticipated return from an investment should not be related to a specific source of funds. Instead, the minimum return required on an investment should be computed using a cost of capital which reflects the general ability of the company to acquire funds. A current cost of capital should be used rather than an historical rate; and, in addition, some consideration should be given to the desired long-term debt-equity ratio of the company in establishing the cost of capital.

Other factors

Although the author feels that the discounted cash flow rate of return is a good indicator of the attractiveness of a project, he points out that three other factors should be considered to give added support for an appropriations request. The decision maker should consider the soundness of the assumptions made in estimating a project's overall return. In addition, he should analyze the effect of deviations from anticipated conditions on the return from an investment. Finally, the decision maker should take note of any intangible benefits which can be expected to result from the project.

Administration

Once a procedure has been established for evaluating capital expenditure proposals, it is essential that the system for evaluation be properly administered. The author notes the importance of developing "a favorable climate . . . for the discovery and evaluation of new opportunities for investment." In order to achieve adequate control over capital expenditures, the author stresses the importance of a "post-appraisal" of completed projects. Such an appraisal would not only reveal instances where anticipated benefits had not in fact been achieved but it might also indicate the reasons for the differences.

In this article Mr. Edge discusses

Davis et al.: What People Are Writing About capital budgeting in general terms without getting involved in lengthy illustrations and descriptions of methodology. Thus, the article provides a bird's-eye view of the entirety of the capital budgeting problem which may be useful to those who are interested in a good, overall review of the subject.

RICHARD B. WALWORTH
University of Florida

Bonus Formula for Division Heads by JOHN DEARDEN and WILLIAM S. EDGERLY, *Harvard Business Review*, September-October, 1965.

Giving a division manager profit-and-loss responsibility—and paying him according to the results—seems a logical way for a decentralized company to encourage optimum performance. The compensation formula used is obviously one of the keys to success, and these authors have some suggestions.

The purpose of the article is to present a formula for calculating executive compensation that will harmonize the profit center's capacity for earnings with the company's cost of capital.

The profit objective is expressed as a percentage of investment that is equal to the company's "hurdle rate" for new capital investment, plus or minus a fixed amount based on the potential profitability of the profit center. ("Hurdle rate" refers to a minimum rate of return required by the company, presumably equal to the cost of capital.)

Assume a business requires 10 per cent as its hurdle rate. One of its profit centers has a profit objective for the current year of \$200,000 on an expected investment of \$1,000,000. The formula would be expressed as follows:

$$.10 \text{ Investment} + \$100,000 = \$200,000$$

The following examples illustrate the advantages of this "formula method" over other methods currently employed.

Example 1: Assume the same basic data as stated above except that the profit center has a return potential higher than the company's hurdle rate. Let us say an additional investment of \$100,000 made by the profit center is estimated to return 15 per cent. The results are as follows:

$$\text{Profit: } \$200,000 + .15(\$100,000) = \$215,000$$

$$\text{Profit Objective: } .10(\$1,000,000 + \$100,000) + \$100,000 = \$210,000$$

$$\text{Profit Over Objective: } \$215,000 - \$210,000 = \$5,000$$

Note: This method will compensate the executive for making the additional investment at an estimated rate greater than the company's cost of capital.

Example 2: Conversely, if the manager invests in projects earning less than 10 per cent, he will be penalized. Assume the same facts as above except that the additional \$100,000 investment is projected to produce a return of only 5 per cent.

$$\text{Profit: } \$200,000 + .05(\$100,000) = \$205,000$$

$$\text{Profit Objective: } \$210,000 \text{ (same as in Example 1)}$$

$$\text{Profit Under Objective: } \$205,000 - \$210,000 = \$-5,000$$

Logically, the next question one would ask is: Will the formula work where a low-profit division invests at a rate less than the company's hurdle rate but at more than its profit objective? Assume a hurdle rate of 10 per cent and a profit objective of \$50,000 on an investment base of \$1,000,000. The profit objective would now be expressed as:

$$.10 \text{ Investment} - \$50,000 = \$50,000$$

Example 3: The manager finds an additional investment of \$100,000 which will earn \$15,000. Assume all other factors are constant. His profit objective will be as follows:

$$\text{Profit: } \$50,000 + .15(\$100,000) = \$65,000$$

$$\text{Profit Objective: } .10(\$1,000,000 + \$100,000) - \$50,000 = \$60,000$$

$$\text{Profit Over Objective: } \$65,000 - \$60,000 = \$5,000$$

Example 4: Assume everything is the same as in Example 3 except that the additional investment earns \$6,000.

$$\text{Profit: } \$50,000 + .06(\$100,000) = \$56,000$$

$$\text{Profit Objective: } \$60,000 \text{ (same as in Example 3)}$$

$$\text{Profits Under Objective: } \$56,000 - \$60,000 = \$-4,000$$

The amount below the objective (\$4,000) will be the amount by which the return from the new investment fails to equal the company's hurdle rate. Thus, the manager is motivated to invest only where the return on investment will be higher than the hurdle rate although his profit objective is less than this rate.

Now suppose one of the divisions is in a loss position, i.e., it has a loss objective of \$100,000 on an investment base of \$1,000,000, which is \$200,000 less than a 10 per cent return. The objective would be stated as follows:

$$.10 \text{ Investment} - \$200,000 = \$-100,000$$

If the profit center manager can reduce the investment or decrease the loss or find additional investments earning more than 10 per cent, he can exceed his profit objective, although he is in a loss position. On the other hand, he will decrease his chances of meeting his profit objective if he invests at less than a 10 per cent return, even though he reduces the amount of his loss, as is illustrated in Example 5.

Example 5: Assume the same facts except that the additional investment earns \$6,000.

$$\text{Loss: } \$-100,000 + .06(\$100,000) = \$-94,000$$

$$\text{Loss Objective: } .10(\$1,000,000 +$$

$$\$100,000) - \$200,000 = \$-90,000$$

$$\text{Loss Under Objective: } -\$94,000 - (-\$90,000) = -\$4,000$$

By investing at less than 10 per cent the profit center will lose \$4,000 more than its return objective, even though this investment will reduce the fixed amount of the loss.

Long-range planning

The formula method is especially useful in long-range profit planning systems. A firm may acquire a subsidiary in a temporarily poor profit position to which a team of executives is assigned and charged with the responsibility of making it profitable. The approved profit plan for the next five years may show losses for the first two years, no profit for the third, and earnings rising in the fourth year and substantially in the fifth. In this situation the formula method can provide a useful means of compensating the team. If they achieve the profit or loss objective they will be paid their bonuses.

Carry-forwards

A problem common to all bonus plans is whether to carry over into subsequent years any profit or deficiency not required for the annual maximum bonus. There are two good reasons for allowing carry-forwards: (1) The incentive to maximum profits may be weakened; and (2) if actual profits would exceed that necessary to realize the maximum bonus, there is an incentive to transfer as many expenses as possible to the current year, and the reverse would hold true if actual profit would be less than that required for a minimum bonus. The problem, of course, is how many years. If they are many, then current operations will be unrelated to the bonus. Consequently, the authors suggest a one-year carry-forward, thus eliminating any manipulation between years. A method for computing the carry-over is presented.

How often should the profit objective be adjusted? Although it may be computed annually at the time a formal budget is approved, developing a profit center to its maximum capability requires several years. Therefore, it may be advisable to construct a profit plan covering several years and base the bonus on this plan.

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Erratum

The Control and Audit of Electronic Data Processing Systems. by Lybrand, Ross Bros. & Montgomery was described in the March-April issue of MANAGEMENT SERVICES (see page 64) as being available from the Business Equipment Manufacturers Association.

Actually, BEMA is not authorized to distribute this booklet. Copies may be obtained from Lybrand, Ross Bros. & Montgomery.

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