

# Management for the 70s

## Making a science of management

by Henry Mintzberg

This article, directed to top managers, aims for a more scientific approach to management through better understanding of the management process, a thorough knowledge of management science techniques, and the intelligent combination of these two factors.

THE COMPANY PRESIDENT sits back in his chair, draws on his cigarette, and replies to the question posed by the MBA student interviewer: "Judgment, that's all it takes, my boy. Don't ask me how I do it. All I know is—we're making money!" In this reply, certainly not an atypical one, the manager effectively summarizes the state of his art. And it is an art, not a science, that he practices.

In this article, I intend to show what we are doing in the McGill University faculty of management toward making a science of what is now an art. And, at the same time, I hope that I can help to destroy some of the myths about management, and replace them with useful understanding.

In recent years, business school education has taken a sharp turn toward theory, and McGill's MBA Program has led the way in Canada. Replacing the older case study method is an emphasis on the underlying disciplines (mathematics and statistics, psychology, and economics) and on the techniques of management science.

One problem, however, has persisted. The management process itself, particularly at top levels in the hierarchy, has remained an art, impossible to teach and impervious

to the influences of management science. But change is clearly on the way. In the future, top managers will look more and more to the technocrats for help.

Organizations have grown larger and their environments have become more complex. At the same time, management science has climbed rapidly up the corporate hierarchy. The process started in the shop with Frederick Taylor and his time study methods. It later received great impetus at middle management levels with the development of operations research and computer systems. Today, management science is knocking at the door of the executive suite.

At McGill, we are embarking on some exciting work to help open the doors of top management to these developments. I would like to use the experiences of the McGill MBA students to describe this particular activity.

In their second year of the MBA program, students register for a course called management policy. The students first form into groups of four and choose an organization to study throughout the year. (Students have chosen a wide variety of organizations—a chartered bank, a hotel, a race-track, a communications company, a psychiatric hospital, a cultural center, and so on.) The students spend their time in this course carrying out a number of assignments designed to give them an understanding both of the processes used by the management of the organization and of the environment in which that management





*Dr. Henry Mintzberg, 30, is assistant professor in the faculty of management, McGill University, Montreal, teaching the M.B.A. course in management policy. A Ph.D. graduate of MIT's Sloan School of Management (where he held Ford and MIT Fellowships), Dr. Mintzberg completed his thesis on the topic "The Manager at Work—Determining his Activities, Roles and Programs by Structures Observation". He has done a considerable amount of consulting work in such areas as marketing, organization study, planning and control for government departments and business concerns. He is the author of a number of articles on various aspects of management and is at present preparing a textbook of management.*

*Dr. Mintzberg's other main area of research is the study of management strategy: the 'making' process in organizations, programming the 'unprogrammed' decision, and crisis handling. He took undergraduate degrees at McGill (B.Eng., 1961) and at Sir George Williams (B.A., 1962) before going to MIT. He has had a number of articles published in a variety of management publications during the past few years.*

## Organizational Structure

Must every firm have rigid job descriptions and clear-cut lines of authority? The traditional answer in the literature of management has been "yes". But McGill MBA stu-

must operate. The students' objective is to cut through many of the vague notions that exist in the literature of management, to develop a clearer understanding of the management process.

Let us review five of their assignments, and in so doing summarize the current knowledge of top management as it appears in the literature and the findings of the students.

## Managerial Work

Our most basic question is: What do top managers do? For too long, students have been told that managers "plan", "control", "organize", and "coordinate". As aids in understanding managerial work, these words are meaningless. The McGill MBA student is concerned with what real managers do, and this means asking some of the following questions: What specific kinds of decisions does the manager make? What kinds of information does he process? How much of this is verbal as opposed to documented, quantitative as opposed to qualitative, fact as opposed to hearsay? To what extent and why must the manager partake in figurehead duties, in developing contacts, in acting as company spokesman, in performing as entrepreneur, in handling crises?

The picture of the manager that has emerged, both from some of my own research and from the student assignments, is one that differs significantly from that in the popular literature. Our manager is not a calm, reflective planner. He is a very busy man, constantly on the firing line, with an enormous workload and little time to delve deeply into anything. He is the focal point of his organization's decision-making and information systems. His brain, not the computer, is the central data bank for storage of organizational information. And because he carries such a great burden of work, the manager can seldom take much time to make decisions.

## Organizational Goals

Is it acceptable to assume, as many economists still do, that firms maximize profit? The MBA students investigate these and other questions in an attempt to understand organizational goals and their influence on the manager's decisions. We find that goals depend largely on who controls



the organization. If there is a strong, single owner, as in many small companies, growth or profit goals will probably assume greatest importance. If ownership is widespread, as in many of the largest public companies, management assumes great power and generally imposes growth goals. And if ownership or control is split among competing groups—a situation typical of universities and hospitals and even some older business firms—then the organization may have no strong, single goal, but may jump from one to another de-

pending on who is applying the pressure.

### Organizational Structure

Must every firm have rigid job descriptions and clear-cut lines of authority? The traditional answer in the literature of management has been "yes". But McGill MBA students find all varieties of structure. Much depends on the nature of the work and the size of the organizational unit. Research laboratories and small firms tend to have loose ("organic") structures, while assembly lines and large companies

tend to have tight ("bureaucratic") structural forms. But one point has come out clearly. Top level managers simply do not work according to rigid precepts. The thousands of words of job description and all the elegant organizational charts appear to have little influence on how these people carry out their work.

### Decision-making

Good decision-makers are supposed to identify a problem, generate several possible solutions, carefully evaluate each, and make a choice. Our question is: Do real decision-makers act in this way? And the answer, clearly, is that they do not. Decision-making is far more complex than this.

First, we find that there are a great variety of decisions, each handled differently. Crises are treated in one way, innovative decisions in quite another. Then we find that many decisions are so complex that managers do a number of unexpected things—delay partially completed decisions for months or years until they are prepared to handle them; break single decisions into series of small decisions to be made one-by-one; generate only one solution to a problem and stick to it; evaluate proposed solutions only in the most superficial way, and so on. Finally, we find that choices may be made by one powerful individual or they may involve intense bargaining in the organization.

### Strategy-making

When we talk about a company's strategy, what exactly do we mean? And how did that firm arrive at the strategy? These questions occupy a good share of the McGill MBA's time. We have found that strategy is usually not planned as a conscious way of dealing with the future. Rather, strategy tends to evolve as the sum total of a host of past decisions that gradually form into patterns. And in making these strategies, we find that two approaches are common—entrepreneurship and muddling through.

The entrepreneurial approach centers about one man—the chief executive. He has a vision of where he would like to take his firm, and he is prepared to take bold decisions to get it there. In the

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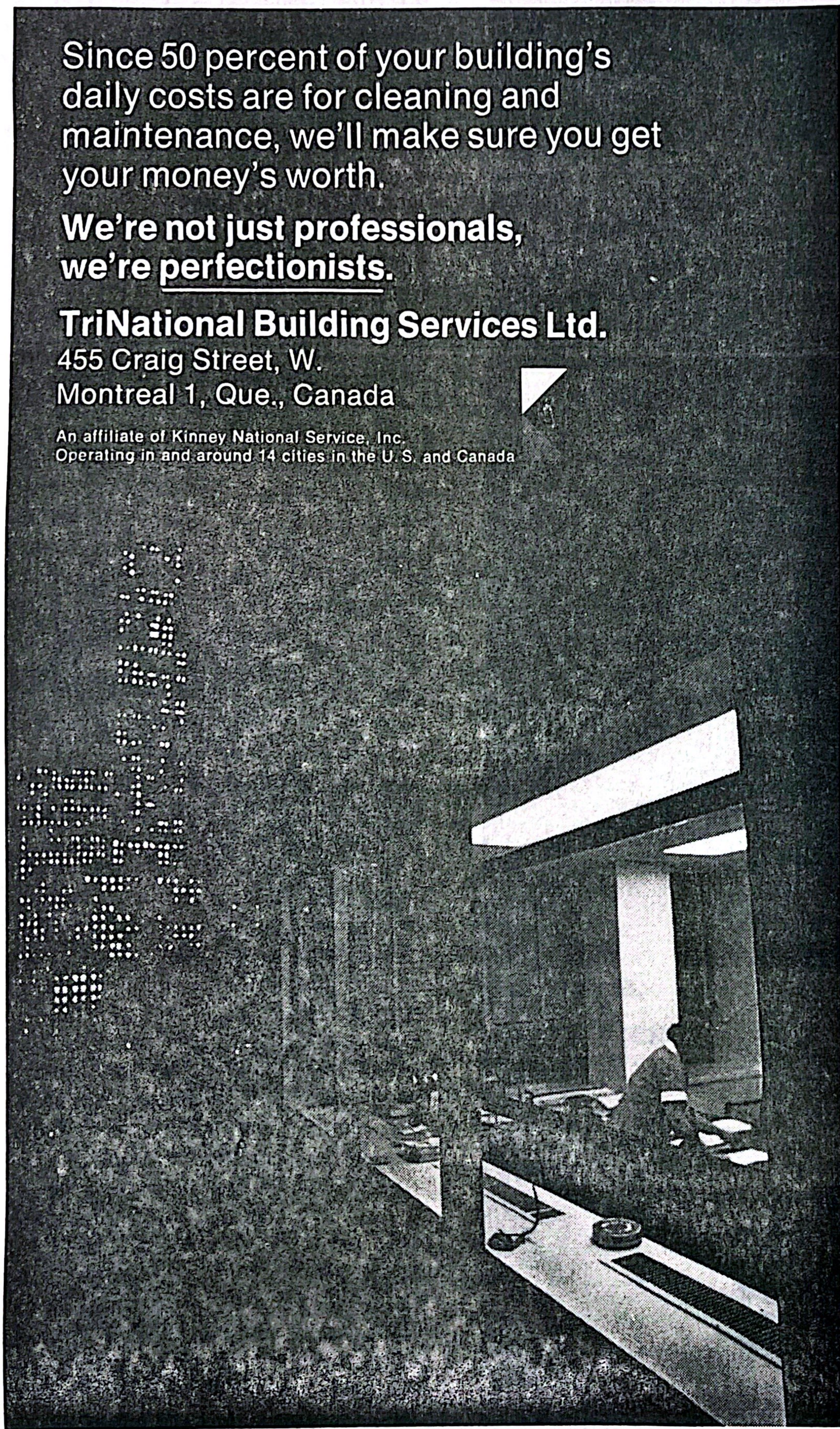
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muddling through approach, the firm is more careful and authority for decision-making may be shared. The firm reacts to problems more often than it innovates. And when it moves, its steps are small.

The entrepreneurial approach seems preferable. But this is the mythology coming through again. The students find that much depends on the type of organization. Small firms in competitive environments can act in entrepreneurial fashion; large, stable firms may often be unable to do so.

In studying each of these five topics—managerial work, organizational goals and structure, decision-making and strategy-making—we are acting as scientists trying to find out about the process of top management. In the past too many words have been wasted by writers who, with inadequate understanding, have tried to tell managers what to do to become better managers. We are making no attempt to criticize particular managers or to distinguish good managers from bad ones. If our description seemed negative in parts, it is simply because a mythology that has existed for decades has tended to glorify the management process. Our aim is not to glorify but (in the modern vernacular) to tell it like it is. Management has been an art, and this means that no one has fully understood the process. It shall become a science when we first understand the process and then bring scientific techniques to bear on it.

This brings us to our final point. With their understanding of management based on these five assignments, the McGill MBA students then analyze the relevance of a number of important techniques for the top management of the organizations they have studied. At this stage, their assessment can be a clear-headed one. The students are not interested in treating these techniques as toys to be used at the first opportunity. They can make an honest evaluation of where and when these techniques should be used and what difficulties will be encountered in using them.

Thus, the students may ask: Why does the top management make such little use of the formal information system, and how can it be redesigned to have more relevance? What kinds of decisions lend themselves to formal cost-

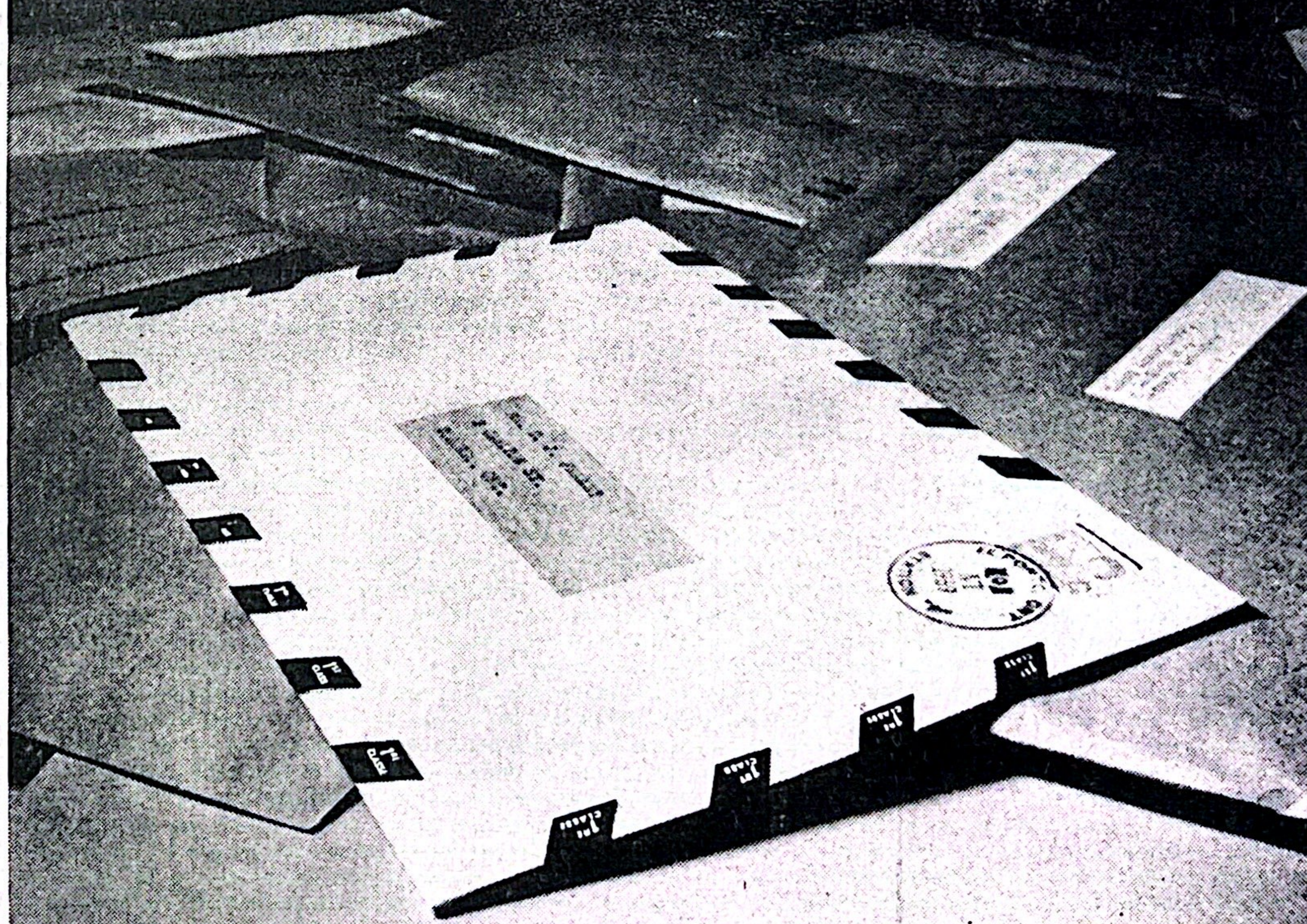
benefit analysis? Why does friction exist between the planners and managers, and how can planning be restructured so that they can be made to complement each other? When should capital budgeting be used and how? Is there room for any mathematical models at the top management level, and how should they be designed?

If the reader of this article now expects to be given specific advice on how to become more scientific, he may find that I have led him down the proverbial garden path.

For there is no simple path to better management. A more scientific approach to management will derive from a better understanding of the top management process, a thorough knowledge of the management science techniques, and, most important, the intelligent combination of these two factors. This belief underlies part of the MBA education in McGill's faculty of management, and this is what we hope will concern an increasing number of top managers who expect to be practising a science. *CB*

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