1964

Problem solving for decision making

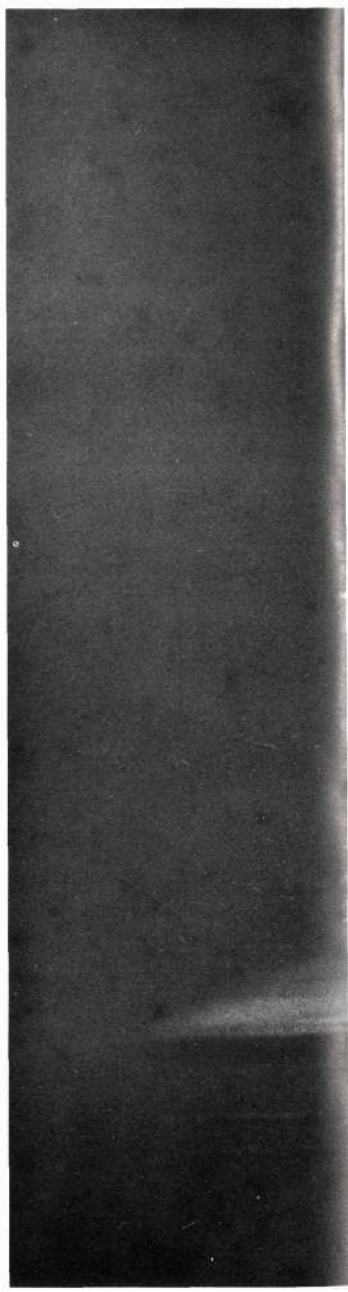
Gordon L. Murray

Roy Stevens

Problem Solving for Decision Making

MANAGEMENT ADVISORY SERVICES

By Gordon L. Murray



As I picture it, we in Haskins & Sells find ever-broadening opportunity in three dimensions: extending our present capabilities to more clients; applying the techniques we already know to more areas of a business; acquiring capability in entirely new techniques.

What does this mean? In the first dimension we do tax and MAS work for those who once were only audit clients, tax and auditing for MAS clients, MAS and auditing for tax clients, and all three for more new clients. The second dimension is not so obvious, and cost accounting furnishes an example. Think of cost accounting and you immediately think of the factory and production. But adapt cost accounting techniques and you can apply them in pre-costing to evaluate designs or plans, to marketing and distribution, to industrial relations (e.g., weighing the effects of wage demands), to decisions on buying capital assets, and to costing clerical operations. Other techniques offer similar opportunities for broader application.

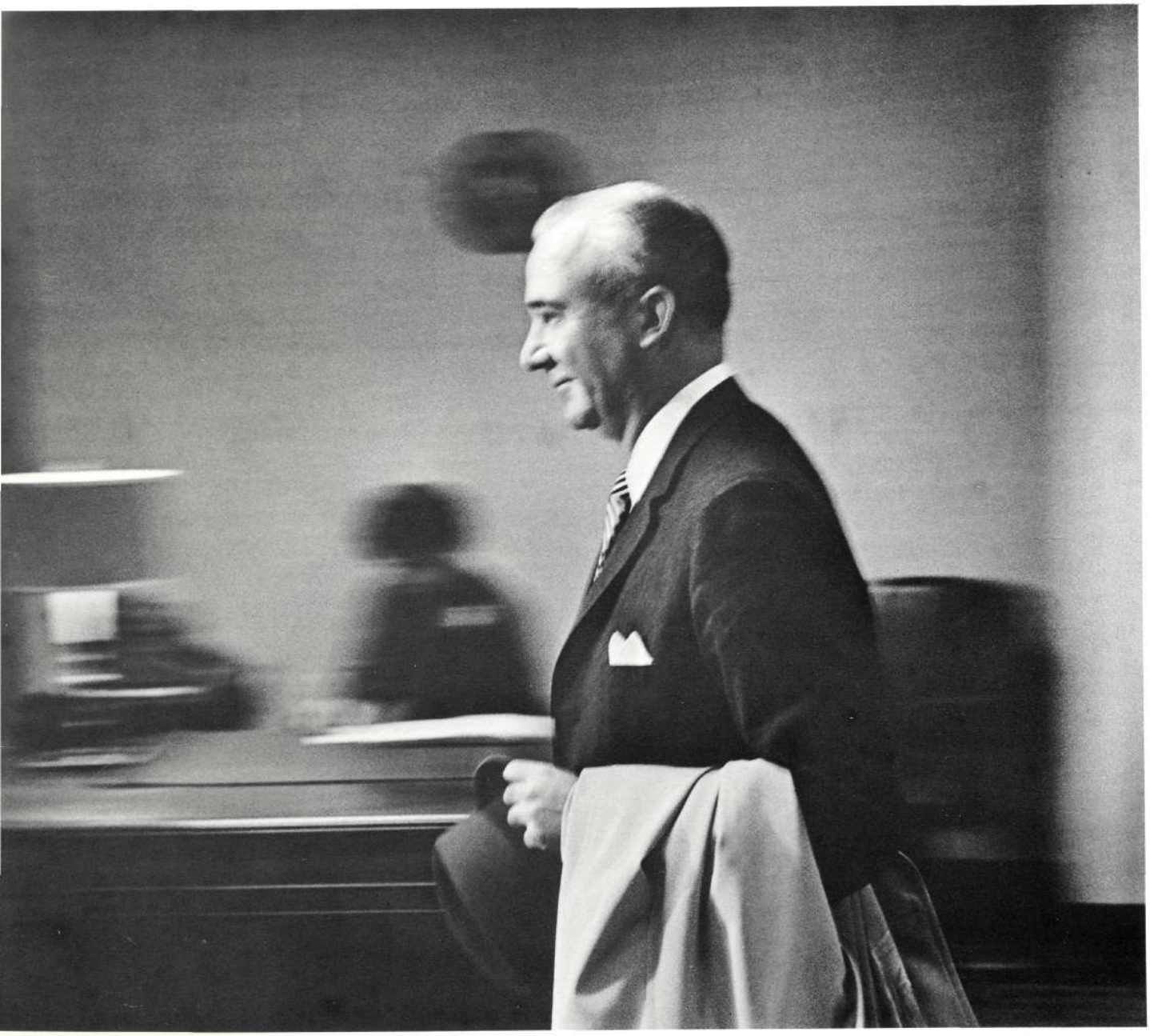
The third dimension, acquiring capability in new techniques, leads to extending the very scope of our services. Some of this extension comes simply from keeping abreast of new developments; some comes through conscious efforts to broaden our qualifications in particular areas; some comes through demands of business itself or through regulatory requirements.

MAS Grows with Complexity

This may all sound highly theoretical, but I find much practical evidence of it in our management advisory services, particularly when I think of how far our services have ranged since ten years ago, when MAS was known as the Systems Department, or five years ago, or even since 1963. There has been a very great growth of MAS both in the profession and in the Firm. Why is this so? Why does business turn to us so much more frequently and why are clients more receptive to our suggestions? The answer in one word: complexity. Let me explain.

In our private lives we long for the simple life, but it never seems to arrive. Contrarily, more and more decisions are forced on us by an ever-widening array of choices: more ways to spend our money, more modes of living, more types of transportation and communication, to name but a few. The more alternatives, and particularly those that are new or outside our experience, the more

Mr. Murray
is partner responsible
for coordinating
Management Advisory
Services.



complicated our personal decision-making becomes.

The business executive can't escape by going to the office—things only get worse, because the very essence of management is deciding among alternatives. Managers plan, organize, direct, and control, but the reason they do these things is essentially to assure that sound decisions are made.

Decision-making follows a process like that used in scientific research. The decision-maker finds facts, defines problems or specifies the opportunity for improvement, identifies alternatives, evaluates alternatives to select a course of action, plans the steps required to reach a decision, and finally he implements the plan. You may say—hasn't this been going on all along? What causes this to become more complicated? Why does the manager need outside help?

It gets more complicated because there are forever more alternatives; and because many of these new alternatives are much more complex, you have to know much more to understand them. Because of this, many of these alternatives are likely to be outside the business executive's experience. Decision-making can't be simplified by avoiding them; in fact, we can demonstrate that the best decisions result from exhaustive search for alternatives.

MAS Objectives

Our management advisory services exist to help client management make more effective—more profitable—decisions through the application of appropriate modern management techniques. We serve as consultants.

Sometimes people talk of management advisory services in terms of the things it deals with. We hear, "MAS? Oh, that is working with electronic data processing." Or, "MAS? That is the systems and procedures department." Or the response includes some list of subjects, such as profit planning, cost accounting, reporting systems, and the like. Such responses may serve the need in a particular situation, but our fundamental view of MAS is different.

To illustrate our view, let me draw an analogy between audit and MAS work. Auditing can be described as a process leading to attestation. The auditor is expected to have a degree of knowledge about the matter under examination, but his real forte is the high degree of skill in the auditing process he uses to select and apply audit techniques appropriate to the situation.

So it is with management advisory services. MAS is essentially a problem-solving process. It leads to a better basis for decision-making and, if the decisions are then made with understanding, to improvement in a client's operations. This process may be applied to any type of enterprise, or to all or some part of an enterprise, in a wide range of subject matter. In the same way as the auditor, the MAS man is expected to have a degree of knowledge about the matter to be explored and he is expected to find, select, and adapt techniques appropriate to the situation. At the start of an engagement he will know something about the industry, company, subject matter, and possible techniques. However, at the outset he never knows all that he needs to—part of the problem-solving process he applies is to research the subject matter for techniques as the problem unfolds. His unique contribution, common to all his work, is his problem-solving approach.

The art of management is essentially concerned with decision-making, and MAS is directed toward assisting client managements in that process. We extend our services into all types of industry and into a wide range of problem/decision areas. Our underlying policy is to advise all clients of our capabilities and of our interest in their welfare, and to be ready to discuss any manner of problem with them. Beyond that point, whether or not we undertake to serve depends on obtaining and evaluating the facts to determine whether the opportunity for a successful engagement exists—essentially a matter of our competence and of conditions within the client organization.

A Case Study

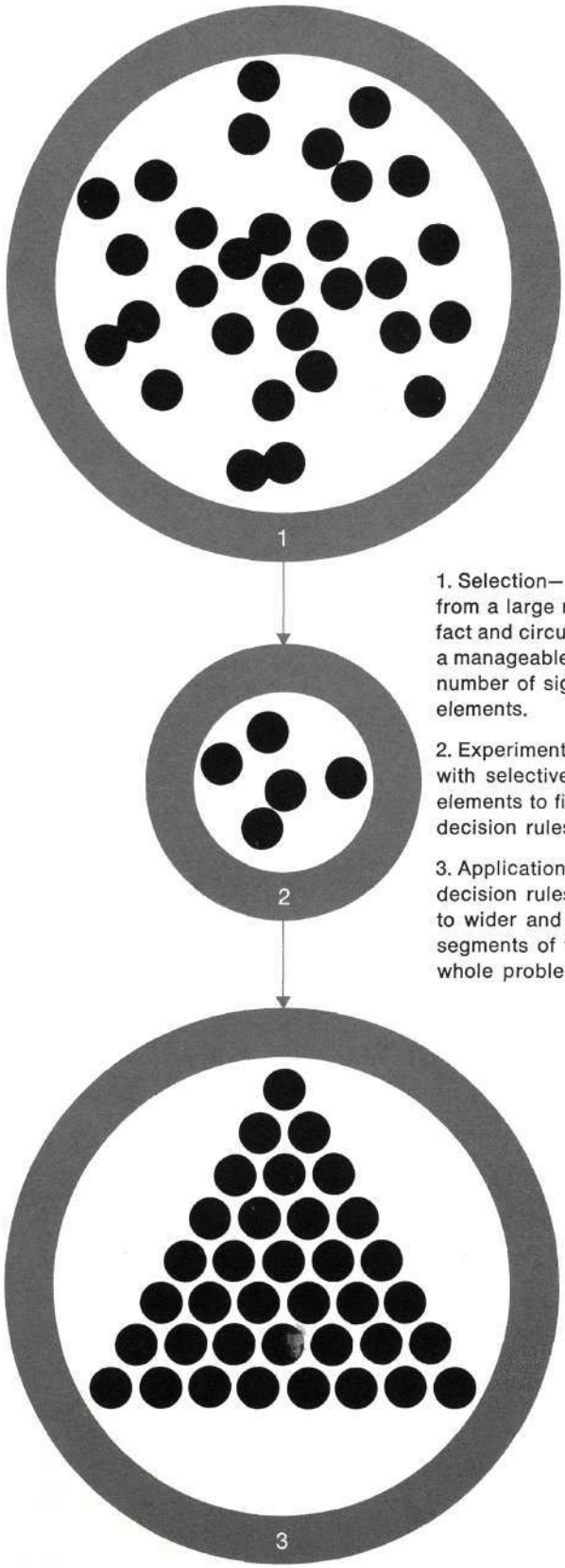
Let's look at a small part of an actual engagement to see MAS at work and to illustrate the increasing complexity in management decision making:

The president of a client company had asked us to make a study of the purchasing function. He pointed to long delays in getting needed materials and parts, frequent stock shortages of some items and excessive stocks of others, hectic procurement and expediting actions, increasing clerical costs in the department—all on a scale serious enough to cause a president to take action.

Following our belief that proper definition of a problem is fundamental to its solution, we proposed, first, spending a little time and a small amount of the client's money to determine whether the problem was in fact where we were told it was and whether a larger effort in that area could be expected to produce results. (Our concept of client service is not to respond with, "How high?" when a client asks us to jump, but rather to exercise the professional prerogative of questioning whether such action is likely to produce a benefit.)

Our brief survey found the purchasing operation reasonably sound. The department was properly organized and staffed, and the procedures were generally well conceived. It was making a conscientious effort to respond

ONE ANALYTICAL TECHNIQUE



1. Selection—from a large mass of fact and circumstance a manageable number of significant elements.

2. Experimentation—with selective elements to find decision rules.

3. Application—of decision rules back to wider and wider segments of the whole problem.

to the demands placed on it by all the other departments. But what demands! A routine requisition received at 9 a.m. frequently became "rush-emergency-expedite" by noon, and was quite likely to be cancelled by 5 p.m. This was a general condition that precluded any reasonably rational procurement. Here was the basic question: Why were requisitioners not making reasonable estimates of their requirements? We saw no immediate purpose to further effort within the four walls of the purchasing department; the source of the problem lay elsewhere. The president accepted this analysis and authorized us to move further.

Practically every department of the company used the purchasing department, but we found that one department used it most. This department kept materials and parts for repairing major equipment. It held over 60,000 items representing a $15 million investment.

In an extensive series of analyses, we concentrated on centralized stocks in this department and on stocks in a particular class. We deferred work on items carried, in effect, as "insurance" (with no expectation of usage under normal conditions), and eliminated items of small value. We sifted out 800 items of this class that were used $1,000-worth or more a year and that accounted for $5 million of the $15 million investment. Giving first attention to these 800 items, we could develop procedures that could then be adapted and applied to all the inventory. This analysis to find essential elements, to focus on the significant, to break a large problem to manageable parts, is an essential of the problem-solving process.

Adapting Techniques

We came, then, to an examination of the company's methods for managing this inventory and we found them to consist of rather crude rules of thumb, with a liberal sprinkling of intuition that was biased in favor of "let's be sure we don't run out of anything." The usefulness of the methods had been outrun by the complexities of an inventory that was tremendously expanded, contained much more complicated and valuable items, and served a much more demanding operation.

Now, "non-intuitive" techniques for making basic inventory decisions—when to order, and how much—and for applying factors of how long it takes to make or buy a new supply (lead-time), how much will be used while you wait (demand forecasting), and how much to carry to cover estimating errors (safety stock), have been known for some time, and in recent years they've been improved.

These techniques, however, require monitoring each and every item and making just the right decision at the