1. Does it represent a definite purpose—work towards a definite net result? Therefore does it have unity?

2. Does each element of the system play a definite part in accomplishing the net whole?

3. Is there duplication of the parts played by the various elements of the system?

4. Is there lacking any element necessary to the accomplishment of the net whole?

A simple searching test with which to begin the appraisal of a system is expressed in the questions, with respect to each element of the system, Is the action which the system requires essential and worth its cost? Is the information being compiled used and is its use worth its cost?

Executives hesitate a long while before they will actually scrap any system. A manager will not hesitate a minute to replace expensive machinery once his engineers prove to him that it is necessary; nor will he hesitate to scrap a piece of obsolete equipment, or sell an inactive machine for any price he can obtain for it; but scrap a perfectly good system—never! He often looks upon it as a mysterious sort of possession. Why, it has been in use for years! Think of the money which has been spent to maintain it; why throw all this away? Perhaps he feels that he is competent to rule on the big questions of finance and of general policy; but system, a matter of infinite detail, the very word sends chills up and down his spine!

Systems of all kinds group themselves under several distinct heads:

1. Ready-made systems installed by an outside consultant. These systems are based upon some common plan and are sometimes adapted to the needs of the organization. Usually they are either production control systems, cost control systems, accounting systems, or a system to cover all these branches. These systems must be approached with care. There are very few places where an outsider can install successfully a ready-made system. Generally the system works while it is being governed by its progenitor but as soon as it is turned over to its adopted parent, trouble begins. There are exceptions, but for every success there are countless failures. Another bad feature of this method, and one of the chief reasons for so many failures, is the fact that the management often thinks its job is done when the decision is made to have the system installed. The managers wash their hands of the whole affair and instead of giving the outside consultant the full benefit of their years of experience, they leave him to find it out the best way he can. The installation of a comprehensive system should not be a matter merely of high pressure salesmanship. Unless the management and the administrators feel that the very success of the business depends upon it, nothing should be attempted. Better to guide the ship by avoiding the known rocks than to hang up a chart and think you can read it without the aid of a compass.

Business has grown so large in some cases that the management is too far away from the scene of activity to be able to render just decisions on these matters. You cannot umpire a ball game from the grand stand; neither can you sit in an office in one city and decide the destinies of an industry miles away in another city. It has been done, is being done, and as long as it continues to be done, systems will fail. This idea of having men in charge of big jobs so restricted that they cannot act upon an original idea if it costs money without having it approved by some distant manager may sound all right, but it simply makes managers high priced clerks. A manager should manage and not simply carry out instructions. If he cannot manage, replace him; but he should manage.

2. Systems built by the organization itself as part of a complete plan properly to develop, control and execute all of the various details connected with the task of management. Systems in this category depend entirely upon the ability of those responsible for their development. If those concerned are well trained and have a good background of experience, with a knowledge of what is being done elsewhere, success will often crown their efforts. The main trouble here is that too often the organization is handicapped by a lack of regard of executives for one another. Each executive thinks the other one is "getting away with something." They are apt to underrate one another's ability, especially when it comes to decisions affecting their several departments.

At times it seems as if we suffer from the woes of specialization. Executives are highly trained in their particular phases of the business, but they are unable to think in general terms because of a decided lack of knowledge of the general principles of conduct governing all business. This lack of knowledge tends to make each think that his function is more important than any other function and this causes friction between departments. No system which is



woven into many departments can survive a mass attack from the heads of all departments. Unless all believe that the system is necessary, and that it is, in part, of their creation, it will not stand up under the stress and strain of the daily onslaught. If any system is continually being picked apart by antagonistic executives it cannot fulfill its mission. All concerned should plan and create together, and someone should pass on the thing as a whole before it is started. Once started, all must work together. Each must concede something to the other. Each must be willing to pocket departmental pride for group pride. Unless the management in its entirety is a compact working unit, no system will succeed.

3. Systems built by the organization itself with advice from an outside consultant. Most systems are so developed. If a management is wise in its choice of a consultant this is an ideal arrangement. It is better if the initiative comes from the inside, better to call upon the consultant than to have him call upon you. Every profession but business seems perfectly willing to call upon outside counsel when needed. Medicine, surgery, law, art, music—all except the profession of managing—seem to sense the need for expert advice in the matter of special and difficult problems. Perhaps this lack is due to the fact that business has yet to formulate a set of laws applicable to all business. At any rate, when an organization feels the need for a closer control over some or all of its functions, that is the time to call for help. A surgeon friend of mine once asked one of the leading surgeons of America when should a patient be operated on for appendicitis. This learned man of medicine made an illuminating, terse reply: "The time to operate is when your diagnosis shows that the patient has appendicitis."

The time to call for outside counsel is when the management is satisfied that the answer to their particular problem lies partly or wholly in the hands of one who will bring a fresh viewpoint and a varied experience, one whose training and very experience enable him to do what he is required to do—act as a counsellor.

If a management contemplates a large expenditure of money for a piece of production equipment, it searches the country over for the best. I have in mind a corporation whose production manager brought to light the need for a piece of production machinery which cost approximately $75,000. This company left no stone unturned to obtain the best. They not only had bids from many companies but engineers spent several months at a cost of several thousand dollars visiting plants all over the United States. When they were ready to act, the engineering department drew up a brief setting forth every fact and figure connected with the proposition. After this, and before the order was placed, they submitted this brief to a competent consulting engineer. He visited the plant, studied the job, made certain suggestions and they placed the order. The consultant's suggestions added about $10,000 more to the cost of the machinery, but he was the means of making a considerable reduction in their production costs.

Yet many a management will install a system without any more consideration than if they were buying a bunch of letterheads—and then wonder why it fails.

4. Systems developed by department heads to handle various tasks connected with their respective departments. Such systems are rarely part of a general plan. They are devised for carrying out the various functions of individual departments. Yet even the smallest of them directly or indirectly affect some other function, some other department.

How often a department head starts some system in his department on the impulse of the moment. He finds that he is without certain information or certain facts, so he starts a system. "Get out some forms," says he. Forms are the roadbed of the railroad represented by system. On this roadbed must be laid the rails of orderly and organized procedure and over these rails passes the train of information or facts. Too often some clerk or tracer in the drafting room "gets out the forms." If every department head would spend an average of one day each month studying the systems of his department, noting how they work, whether they meet the need they were built to meet, whether the information is supplied in the proper manner, in the proper place, and at the proper time, he would learn a great deal. As long as department heads operate their branches of the business as if there were no other branches, just so long shall we have these ill-begotten systems.

5. Self-contained system units sold by organizations to buyers for limited, specific purposes, such as bookkeeping systems, visible indexes, filing systems, and so on.

This last group of systems seem at times to give us the most trouble. They are systems sold as such, to be installed intact, and very often by a salesman. With the manufacturers of these things we should have no