EFFECTIVE IMPLEMENTATION OF MANAGEMENT INFORMATION SYSTEMS

*Christopher Orpen**

The effective implementation of information systems requires an understanding of its impact on the work lives of users. An interview-based approach for gaining this understanding that proceeds from good formulation through to appraisal is summarized in the paper. The advantages of adopting this kind of systematic approach are stressed.

I. INTRODUCTION

The business environment is being affected by a variety of developments which have multiplied the amounts of knowledge that managers need if their firms are to survive, let alone prosper.

As Van Mesdag (1984) has persuasively pointed out, to really function effectively, firms which deliberately set up systems for 'managing' this knowledge tend to perform much better than firms which fail to do so. Recent history is full of business failures that have arisen because firms did not have specially-designed systems to coordinate and control in such a way as to improve managerial decision-making. However, it is not sufficient just to design a system that meets this requirement. Whatever system that is designed, it needs to be effectively Implemented — something easier said than done.

The present article describes an interview-based approach that has 'worked' for many firms. The approach is characterized by the fact that it requires managers to proceed through a series of discrete steps and not to proceed to a later step until the earlier one has been satisfactorily completed. There are five main steps or stages in the Implementation process.

II. IMPLEMENTATION PROCESS

Define the Goals of the Information System

Unless potential adapters know what it is hoped to be achieved by the system, they are unlikely to be strongly motivated to work hard and effectively. Without knowledge of goals, effort tends to be misdirected and often results in failure as a result. In addition, goals are needed to serve as criteria against which the success or failure of the system can be measured. In the absence of goals, which are preferably clear-cut and measurable, it is not possible to assess the extent to which the system is functioning effectively. In order to establish goals of this kind, it is advisable to set up a series of formal meetings of the managers involved, with instructions to continue as long as is necessary to develop a consensus about what the information system is designed to achieve.

The formulation of information goals should not be left to one person, as so often occurs. In addition, the process of goal formulation should not stop prematurely when there is still disagreement about the precise purpose for which the information system is designed to achieve. However, once the goals are established, it is

* Dorset Business School, Bournemouth University, England.

important that they be consistent with the basic approach of the firm to surviving and prospering. Specifically, the goals of the management information system should help to advance the broader goals of the firm, not work against their attainment. To help ensure that this occurs, it is advisable to have senior managers, who have full knowledge of such broader goals on the management team responsible for the formulation of objectives for the information system. To improve acceptance, many experts advise that one or more spectators of the system (computer programmers, system analysts, hardware designers) be included in the team as well.

Establish Responsibilities for the Information System Function

The business of managing information resources has been complicated by technology and the increased reliance of managers on such resources. Specifically, the new and much closer user-end relationship, while it is desirable, has introduced complex human factors which must be mastered by the information professional in both human and technological terms. Attempts by single individuals to stay on top of all major developments in technology as well as applications have, by and large, proved unsuccessful. As a result, the information function in most firms has begun to divide itself into two areas of specification. The first is becoming increasingly technical, and concerned essentially with the design and operation of hardware and software configurations which serve as the 'information utility' of the firm. The second area is increasingly restricting itself towards application of this utility. Since it is concerned only with solving the business problems, persons in this area need to know much less about the technical details behind the utility. It is my belief that firms should recognise and build upon this 'natural' division of labour, instead of working against it.

In practical terms, what this means is that firms should *not* establish single or monolithic data-processing or computer departments which contain all system functions, including operations, technical design, development of applications, and long-range system planning. They should, instead, set up a tripartite structure which clearly separates the production/distribution of information from its various applications.

The production/distribution function should be *left* to those persons with the technical expertise needed to perform it effectively. They should be assisted and encouraged by senior management and provided with the necessary resources and discretion. However, the technical experts should not take over the essentially managerial roles of planning the information function, denoting who its users should be, co-ordinating the information function with other functions in the firm, and making strategic decisions about that impact on other parts of the firm. These are issues that should, quite deliberately be left to an 'applications section' with a strong senior management representation or with direct lines to senior management.

It is the test of this section to work closely with the technical experts, but not to leave these issues to them. The applications section need not be a permanent department, but could be a team that meets on a regular basis and consists of members drawn from all major activities of the firm. As long as data-processing or computing is seen as a single 'back room' function, these managerial aspects tend to be delegated to the executive in charge of the function, with senior management giving little attention and often hastily-conceived approval to his recommendations.

Over and above the production/distribution information department and the applications team, there are the general managers of the firm. As a matter of deliberate policy, they should not get directly involved in any of the technical or applications issues mentioned so far. As general managers, they only have two fundamental roles, to which they should restrict themselves. The first is for them, after suitable consultation, to communicate their requirements for business planning, co-ordination, operations, and control to the applications team. The second, and crucial requirement for them, as general managers, is to resolve any conflicts that may arise between the production/distribution and the applications functions.

Conduct Interviews with Potential Users of the System

Having decided on the goals for the system and set up a structure that will allow the information system to meet these goals, the next step is to find out (i) what kind of impact the system will have on persons who will have to use it, and (ii) how these users feel about the impacts or changes. This can only be properly and sensitively done, in my view, through face-to-face interviews with at least a representative sample of users. What is important here is for managers , *not* to embark on the interviews until the information system has been designed and responsibilities assigned to certain people to produce and distribute the requisite information. Otherwise, managers will not know precisely what questions to ask, nor will users be able to gauge what effect the system will have on them and their jobs.

The other important requirement for success is that the interviews be perceived in neutral terms. When the potential users have little information or favourable attitudes, a member of the design team or any outside staff member may be perceived as sufficiently neutral. However, where attitudes are already resistant, it may be necessary to employ an external consultant or even someone selected by the users to do the interviewing.

There are four key phases in the interview process: 1. preparation; 2. entry; 3. conducting the interview; and 4. closing.

Preparation

To prepare for the interview, the key organizational task and decision process which will be affected by the information system must be identified. The interviewer should also work out in advance the general questions he is going to ask and the sequence he intends to follow. To assist him in this, it is often useful for the interviewer to conduct a few pilot interviews with several potential users. It is especially crucial for the interviewer to adopt the right kind of attitude to his task, one of wanting to learn from the users and of being keen to help and assist them in their problems. The interviewer is unlikely to learn what he needs to know or improve the morale of users, if the interviewees perceive that he is trying to sell the system, or is just going through the process and is not really interested in what they are telling him.

Entry

The success or failure of interviews is strongly affected by the initial impression the interviewee has of the interviewer. Potential users typically are pleased to have someone inquire about their feelings and attitudes and will usually talk at length about their job and how they can make more effective use of new information systems. But this requires that the interviewer makes the right initial impression. From my experience, the most successful

entry is where the interviewer starts by asking for *help* from the potential user, perhaps, asking him to take the interviewer through a typical working day for the user. The interviewer should not leave this phase to chance, but should work out in advance, how exactly he will approach the interviewees.

Conducting the Interview

The interviewer must not lose sight of the fact that his task is to get the potential user to identify all of the task activities performed and all the major interactions with others. In addition, he must find out exactly how those will change, in the view of the user, when the new information system is adopted.

To help the interviewer achieve these goals, it is important to abide by the following three rules. First, the focus of attention should be on *objective* information, rather than on how the interviewee feels or thinks. It is very easy to get sidetracked if the interview gets into subjective areas and the interviewee frequently becomes defensive and starts to doubt the motives of the interviewer. Second, the interviewer should pay attention to the nonverbal cues and mannerisms of the interviewee, which can help the interviewer interpret the significance of the answers given to his questions. Third, it is very difficult to 'combine' answers to get a general picture, unless basically the same questions are put to all potential users.

Closing the Interview

Once the interviewer has collected the objective information he seeks, he should then ask the user (i) how he feels about the impact the new system will have on his job and relations with others, and (ii) how he thinks any particular implementation problems can be overcome. While some of these feelings and thoughts may have come through voluntarily earlier, it is advisable to set aside the last few minutes of the interview as a special time to ask the interviewee how he feels and thinks. From my experience, this helps to close the interview on the right note.

Evaluate the Results of Interviews with Potential Users

Having collected this data, the next stage is to use it to develop an implementation strategy. Because potential user needs and problems have been identified, it is possible to modify or adapt the system so as to take these needs into account and to minimize these difficulties. In evaluating the data, it is important to take into account not only the actual statements of users but also the interviewer's interpretation of them —'what he thinks the user meant to convey by his statements. It is advisable for the interviewer to report in person to the designers to give them a chance to ask him to explain the significance of what he found.

Modify the System and Assess its Effectiveness

In the final stage, the designers should make whatever changes they think are necessary to the information system, in the light of what has been learnt from the interviews. It often happens that designers need to make the system less technically sophisticated, so as to improve its chances of being effectively implemented. In many cases, the system can remain as the designers wanted it, but changes have to be made in users' procedures. Occasionally, neither the system nor procedures can be altered. However, because of the interviews, managers know that there will be problems unless they work directly with the users who appear likely to be unhappy or resistant. It is frequently necessary in

such situations for managers to speak to particular users and to explain things to them. If this is insufficient, it may be necessary to enhance their roles in some way or even to move them to another part of the firm.

III. CONCLUSION

The interview-based approach summarized in this paper is simple and straightforward and relatively inexpensive. In view of the problems encountered by many firms in getting their information systems properly implemented by their staff(e.g. Argyris, 1980; Dickson and Simmonds, 1984); it is an approach that is certainly worth trying.

Not only do interviews help firms design their systems more effectively for implementation, but they also make the users feel better as well — a worthwhile goal in itself.

References

Argyris, C. (1980), "Resistance to Management Information Systems", *Innovation*, 10, pp. 28-34.

Dickson, G.W. and Simmonds, J.K. (1984), "The Behaviorial Side of MIS"; *Business Horizons*, 29, pp. 59-71.

Van Mesdag, M. (1984), "How to Design Your Management Information System", *Business Information Review*, 1, pp. 24-30.