

Practical guidelines for EDP long-range planning

by JOHN V. SODEN and GEORGE M. CRANDELL, JR.

McKinsey & Company, Inc.
Los Angeles, California

INTRODUCTION

This paper summarizes the approaches some major organizations are taking toward EDP long-range planning (LRP) and presents what we believe are useful and practical guidelines for others involved in, or contemplating, such an activity. The information presented here was gathered during an April 1974 working conference on long-range planning for information systems cosponsored by McKinsey & Company, Inc., and the University of California at Los Angeles Graduate School of Management.

Some 20 major public and private sector EDP executives attended the invitational conference, and participated in two days of discussions regarding various aspects of their LRP experience. These executives also participated in a detailed preconference survey focusing on the objectives, development process, and end products of their individual planning efforts.

The paper is divided into three sections which discuss:

1. The approaches to EDP planning utilized by the conference participants, including their planning objectives and final LRP documentation.
2. The planning processes used to develop an EDP strategy statement and LRP.
3. Practical planning guidelines that should be considered by the EDP executive in undertaking and carrying out a planning activity.

For the purposes of this paper, it will be assumed that the EDP organization, by which the planning is being done, is responsible for computer operations, systems analysis, and system development activities.

APPROACHES TO PLANNING

The approach to EDP MIS planning adopted by an organization reflects many things, including the charter, credibility, and capability of the organization itself; its industry characteristics; and the maturity, sophistication, and enthusiasm of the company and individual "users." In order to obtain a good cross section of various approaches to planning, conference participants were chosen

to represent the aerospace, airline, business equipment, chemical, consumer goods, insurance, medical services, petroleum, and utility industries as well as government and education at the local, state, and Federal levels. The "average" participant was from an organization that had annual revenues or a total budget greater than \$1 billion, an annual EDP budget of over \$15 million, formal capital allocation and budgeting procedures, and a formal EDP long-range plan for more than three years. They, therefore, represented a cross section of relatively large, mature EDP organizations experienced in EDP planning. Hence, it can be expected that they were familiar with the literature on this subject represented by the References 1 through 8.

Planning objectives

These organizations tended to have five primary objectives for their LRP effort. Ranked in order of importance, they were to:

1. Increase communications and cooperation between the EDP group, its users, and top management.
2. Improve EDP requirements forecasting, allocation of EDP resources, and short-term decision-making within the EDP group.
3. Identify opportunities for improvement and cost reduction within the EDP group.
4. Identify new and/or higher payout computer applications and cancel marginal development efforts.
5. Gain a better understanding of, and increase EDP's visibility within, the overall organization.

Only half of the participants indicated that they attained these objectives above their initial expectations. This, we feel, was caused by several basic shortfalls in, and misunderstanding of, the planning process, as discussed more fully in a subsequent section.

LRP documentation

The vast majority of conference participants agree that something called an LRP document should contain the

following:

- Statement of objectives for the EDP organization.
- Projection of future EDP and user environments.
- Application development priorities and timetable (*including specific project descriptions with cost, benefit, return on investment, and risk estimates*).
- Budget, hardware, personnel, facilities, education, and organization schedules.
- Implementation plan.

There was a difference of opinion, however, over whether certain additional items of information should be included in the document. This information consisted of:

- Summary of EDP organization strengths and weaknesses.
- Alternative strategy definitions and evaluations.
- Projection of host organization's future industry environment.

The objections to including a summary of EDP group strengths and weaknesses in the LRP document were understandable; however, an honest introspective analysis of the current status of the EDP group is necessary, both to identify areas in which improvement is required and to assess the resources available for undertaking any future plans. Regarding alternative strategies, most organizations implicitly considered them, but felt that it was not worth the time to formally document them. Finally, a projection of the host organization's future industry environment was usually left out because the company itself had not developed or documented one—the EDP group either did not desire to or did not feel capable of doing so. This is somewhat paradoxical in that one of the planning objectives was to gain a better understanding of the overall organization—it may explain why that objective was not achieved to a higher degree.

One of the most telling findings regarding the LRP documentation was the fact that, of the participants who agreed that they should include certain information, over half of them failed to do so. This information consisted of return on investment or risk estimates for potential projects, alternative strategy definitions and evaluations, and summaries of the EDP organization's strengths and weaknesses. The failure of these organizations to include items they deemed necessary indicates that even in these relatively large and mature EDP organizations, the gap between recognized standards of planning and actual practice is relatively large. As the next section discusses, this gap is, in part, a result of varying interpretations of what actually constitutes long-range planning.

PLANNING PROCESSES

The planning process is the sum of the individual activities involved in developing the LRP. It can take an endless number of forms depending upon the desired

comprehensiveness of the end product and the resources available for its development. Some factors that affect the choice of an LRP process are:

- The characteristics of the overall organization—e.g., contingency planning could be very important in a public sector organization subject to rapid changes in administration and direction, while its use might be minimal in a stable manufacturing company.
- The objectives of the overall organization regarding its use of computing resources—i.e., is EDP to be a reactive support function or an assertive agent for improving operations and procedures throughout the company?
- The specific role of the particular EDP organization—e.g., a corporate EDP organization having advisory, but not operating, responsibilities might stress policy planning as opposed to operational planning.
- The managerial sophistication of the overall company and individual “user” executives—e.g., a company without established capital allocation criteria may have difficulty in agreeing on methods for ranking system development projects based on financial attractiveness.
- The relative degree of maturity and sophistication of the EDP function—i.e., an EDP organization struggling to manage computer operations on a timely, accurate, and cost-effective basis should likely concentrate on this area and not be overly concerned with planning to meet the further information needs of users.

A distinction should be made between the development of an *EDP strategy statement* and an *EDP plan*. The two are closely interrelated in that the strategy statement defines the objectives and policies of the EDP organization, while the plan lays out the actions to be taken to achieve the desired objectives. Few participants actually made this distinction and explicitly created an EDP strategy statement as part of their planning process. This appears to be one of the major factors that inhibited achievement of planning objectives.

EDP strategy statement

The strategy statement is a key communication vehicle between EDP and top management. Through it, top management can participate in directing the EDP effort such that it best suits the present and expected needs of the company. The development of an EDP strategy is also a means for the EDP executive to improve his relationship with top management and establish himself as a member of the management team.

One form of the EDP strategy statement development process is depicted in Figure 1. It involves two stages: (1) EDP management develops and presents to top management an environmental assessment, recommended objectives, and proposed policies; and (2) top management re-

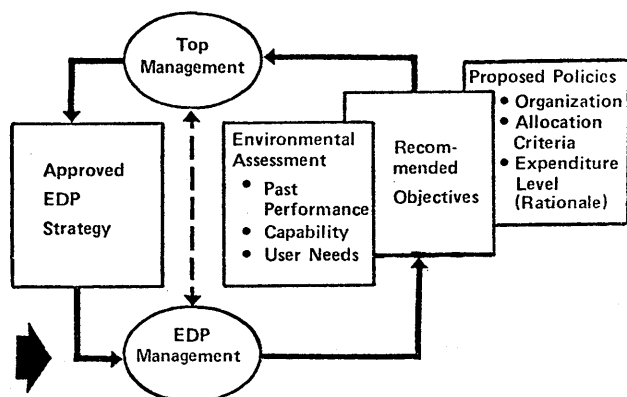


Figure 1—General strategy development process

views and modifies the proposals in accord with its views or desires, thereby producing an approved EDP strategy. Through this top management participation, EDP plans which are later developed will be relatively integrated and aligned with those of the overall company.

The inputs provided by EDP management—i.e., the environmental assessment, recommended objectives, and proposed policies—indicate where the EDP group is, where it should be going, and what some of the guidelines for getting there should be. The assessment, then, evaluates the past performance of the EDP group, its current strengths and weaknesses, and the needs of its users that it is or should be satisfying. Recommended objectives for the EDP organization are generally directed at overcoming present shortcomings and preparing it to satisfy future demands. Proposed policies might cover such topics as the organizational approach to computing (e.g., centralized versus decentralized); the criteria for allocating computer-related resources (e.g., application steering committee versus first-come-first-served); and the expenditure level for EDP services, including an explanation of what services would be provided and why that level of service is appropriate.

Within the general strategy development framework there are (at least) two modes in which EDP can operate:

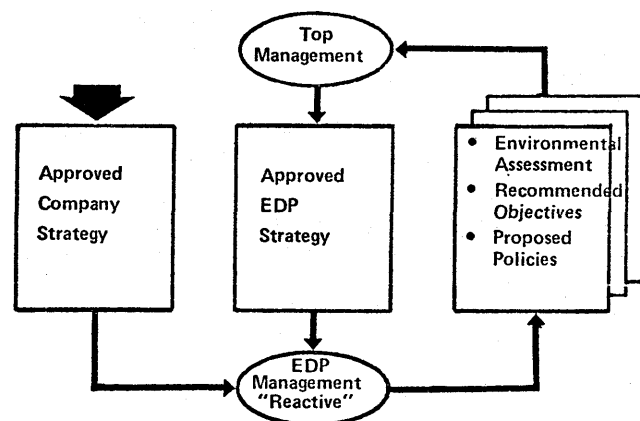


Figure 2—"Reactive" strategy development process

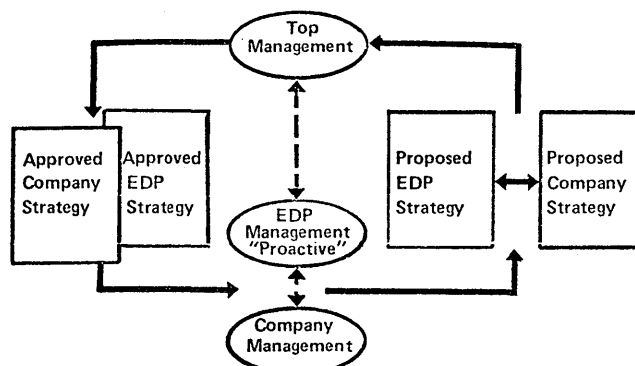


Figure 3—"Proactive" strategy development process

"reactive" and "proactive." The "reactive" mode is depicted in Figure 2. In it, top management develops an overall company-wide strategy and EDP management "reacts" to it by developing a proposed EDP strategy that supports it. In this manner, the EDP strategy does not impact the development of the company strategy. In the "proactive" mode, the EDP and company strategy are developed simultaneously, as shown in Figure 3. In this arrangement, EDP can influence the company's strategy formulation such that it takes the best possible advantage of the computing capabilities and available resources.

In both these modes the choice of appropriate strategic objectives for EDP is key since they set the tone for the long-range planning effort and the pattern for EDP's future role and development. What the appropriate objectives are for a given organization depends on its current status and anticipated future role, and these will change as the EDP group develops. A typical EDP organization might, over time, pass through the following objectives:

- Build a sound foundation for managing the EDP activity day to day.
- Cultivate a core group of appreciative users.
- Filter requests of core users to enhance the return on investment (ROI) of EDP.
- Expand the user group to further enhance the EDP ROI.
- Identify and prepare for user needs likely to arise in the future.
- Influence the future development of the company to make the best possible use of EDP.

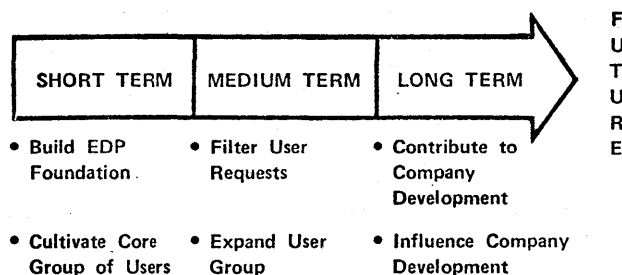


Figure 4—Strategic objectives

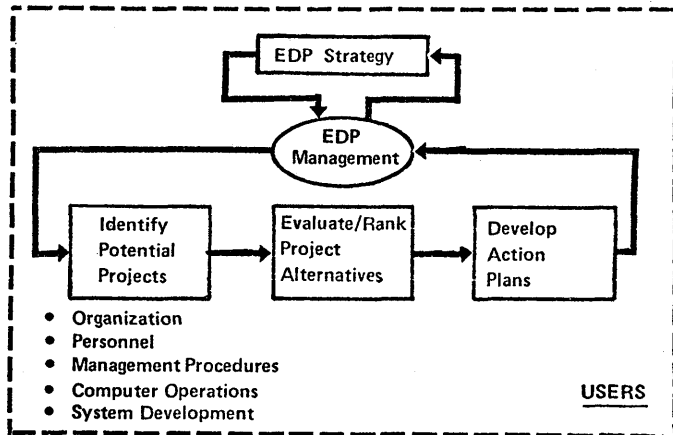


Figure 5—EDP plan development process

The above objectives can, for the purposes of convenience, be divided into three groups: short term, medium term, and long term, as shown in Figure 4. These groupings are based on the time horizon for planning implied by each objective and indicate the type of plan appropriate for achieving it.

EDP plans

As mentioned previously, the EDP plan lays out the actions to be taken to achieve strategic objectives. Thus, the plan is the end result of identifying, evaluating, and ranking alternative projects. The process of developing the EDP plan is diagrammed in Figure 5. The term "projects" in this instance is meant to include not only systems development, but all aspects of EDP activities and management, e.g., organizational modification, personnel development, improvement of management procedures, and improvement of operations. Note that the entire planning process takes place within the organizational framework of the users which it is EDP's main function to serve.

EDP plans can be loosely categorized as short term, medium term, and long term, corresponding to the major objectives they are designed to achieve (see Figure 4).

Short-term plans stress the achievement of precise quantitative objectives during a one-year period. These objectives usually relate to ways of measurably improving such areas as production service levels and costs per transaction, effectiveness and efficiency of system development efforts, and maintenance request throughput. The short-term plan generally takes the form of a statement or list of improvement targets, a schedule with milestones for reviewing progress, and an operating budget.

Medium-term plans generally seek to maximize the contribution of the EDP effort in meeting today's needs using a multiyear planning horizon. This usually involves a study to determine current users needs. A number of approaches to this may be taken, including the simple listing of all previously proposed system development projects, full-scale documentation of the types of information users

throughout the company would like to have available (perhaps embodied in a company MIS architecture diagram), and/or an identification and analysis of key functional areas in the company for which data processing applications might be of high value. This last approach, often referred to as "top down" business analysis, involves an examination of the company's financial and operating data to identify those areas in which the use of EDP could have the greatest impact on the company's current and future success. Mastery of this approach poses a significant challenge to the EDP executive in that it requires him to become a businessman and develop a broad-scale understanding of the economic leverage points of the company which he serves.

Once projects have been identified, they are then ranked and a course of action developed using those policies developed for allocating computer-related resources (as well as internal EDP organization technological policies). The medium-term plan usually consists of a multiyear system development schedule and budget extrapolation to support it.

Long-term plans seek to contribute to, or influence, the future development of the company. "Contribute to" (reactive) plans involve aligning EDP activities with the long-term plans of the overall company. This might involve such things as developing expertise in new areas anticipated to be of use in the future or gradually modifying the organization structure to be better prepared to provide future services. "Influence" (proactive) plans involve active participation of EDP in the long-term planning of the overall company, e.g., making organizational recommendations based on information flow.

Naturally, planning processes cannot all be categorized in such a black and white manner; for instance, a medium-term systems development plan derived from a truly long-term systems development plan might well focus on future rather than current needs.

Most importantly, however, the use of each successively longer ranged plan should be mastered before proceeding to develop the next. This is because the successful implementation of each longer range plan is dependent upon the shorter range plans developed to support it. For example, regardless of how good a given long-range plan is, it will likely lead to disappointing results if adequate short- and medium-range plans have not been mastered for putting it into action.

Note also that the need for top management involvement is not an exclusive aspect of long-term planning. EDP objectives and policies should be established with top management's participation, even if a short- or medium-term plan is most appropriate for a given EDP organization. And these objectives and policies should be carefully set in light of an objective assessment of the EDP organization's capabilities and weaknesses.

PRACTICAL PLANNING GUIDELINES

During the conference, a great deal of discussion centered around the pitfalls involved in developing a plan-

ning approach and carrying out the planning process. Based on those discussions, it would appear that the EDP executive undertaking a planning activity should consider the following guidelines within the framework of his own unique environment.

- Recognize the growing need for formal long-range EDP planning as computer systems become more complex, cost more, require longer to develop, involve multiple functions or departments, and become increasingly important to the success of the company.
- Admit that a set of extrapolated budget, personnel, and hardware schedules routinely submitted to the corporate planners does not constitute an EDP long-range plan.
- Recognize the importance of communication with and support of top management for the planning effort—gain their agreement on a simple set of EDP policies and objectives at the outset and keep them appraised of progress.
- Define specifically the objectives of the planning effort at the outset and “plan the plan” around achieving these—do not attempt the great leap forward.
- Select a planning process suited to the practicalities of your situation—e.g., time and resources, (if possible, develop a conceptual model of the planning process, along with a well-defined set of desired end products)—avoid trying to do everything at once.

- Make the plan one for company/user use of computer systems not one just for the EDP department—involve users in its development and make its language and structure as user-oriented as possible.

Most importantly, remember that helpful as formal long-range planning can be, it cannot replace the political sensitivity, entrepreneurship, conceptual contribution, and basic business leadership required of the successful EDP executive.

REFERENCES

1. Brown, W. F., R. E. Biband, G. L. Hodgkins, “Planning For The Future Computer Complex,” *Computer Decisions*, January, 1973, pp. 30-35.
2. Dearden, J., F. W. McFarlan, W. M. Zani, *Managing Computer-Based Information Systems*. (R. D. Irwin: Homewood, 1971), Chapters 2 and 7.
3. Harvath, C. and B. Bridging Chilcoat, *The Systems Expectations Gap*, an AMA management briefing, 1973.
4. Kriebel, C. H., “The Strategic Dimension of Computer Systems Planning,” *Long Range Planning*, September 1968, pp. 7-12.
5. McFarlan, F. W., “Problems In Planning The Information System,” *Harvard Business Review*, March/April, 1971, pp. 75-89.
6. Neuschel, R. F., “You, Your EDP Plan, And Top Management,” keynote address at the Third Annual Conference of PIMA on April 13-14, 1971.
7. Schwartz, M. H., “MIS Planning,” *Datamation*, September 1, 1970, pp. 28-31.
8. Steiner, G. A., *Top Management Planning*, (McMillan, 1969).

