Timing Strategies for Feasibility Studies in Information Systems Development

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The feasibility study has been prescribed and described as an important step in information system development. One of the key issues pertaining to the feasibility study is its time of preparation and presentation during the system development life cycle. Systems analysis and design texts suggest different timings for its preparation and presentation; informal survey of forty seven organizations reveals that the feasibility studies are not being performed on a formal basis and that the timings used by them are different from the ones recommended by texts; and finally results from our quasi-experimental study indicate that there is a divergence of views among analysts and users regarding the appropriate feasibility study timings. Based on our results, three alternate strategies are recommended for conducting feasibility studies, and a contingency model is proposed for strategy selection.

One of the central concerns of information system developers and managers over the last three decades has been to develop information systems which meet users’ requirements and are developed on time and within budget. Developers and managers have taken several steps, over the years, to assure the accomplishment of the above objectives. One of these key steps has been the use of reviews during system development life cycle (SDLC). Feasibility study is one such review.

The importance of the feasibility study has been stressed almost unanimously by most researchers and authors in the information systems field. For example, most text-book authors, researchers, and practitioner methodologies in the area of systems analysis and design identify the feasibility study as one of the important phases of the system development life cycle (Couger et al., 1982; Davis and Olson, 1985; Dickson and Wetherbe, 1985; Gore and Stubbe, 1983; Horsey, 1983; Long, 1983; Robey and Markus, 1984; Semprevivo, 1982; Thierauf, 1984; Wetherbe, 1979). The feasibility study is also considered important from the point of view of user/management involvement (Debrabander and Edstrom, 1977; Edstrom, 1977). In fact, in most organizations, it is common to include some kind of feasibility study as part of any major system development effort. In spite of this agreement, the research literature does not pro-

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vide much insight into the contents and timing of feasibility studies. For example, Ives and Olson (Ives and Olson, 1984), while reviewing the “user involvement” literature, did not cite a single paper directly related to feasibility studies. However, a recent study (Palvia and Palvia, 1988) has examined the desirable evaluation criteria and contents of a feasibility study.

One of the key issues about feasibility studies is its timing of preparation and presentation during the system development life cycle. While the sequence of the various stages in the system life cycle is pretty much defined, there are many views on the stage where the feasibility study should be conducted. As DeMarco (DeMarco, 1978) succinctly puts it:

“Management would like to see the cost-benefit study completed during the survey phase. .... But the sober fact is that you cannot analyze the trade-offs until you have something to analyze. The idea of performing an early cost-benefit analysis is largely a fiction.”

This paper addresses the feasibility timing issue; specifically it includes the following:

1. Reviews the literature and identifies the various timings suggested in the literature.

2. Reports on an informal survey of companies to determine the scope and timing of feasibility studies in their organizations.

Then using a rigorous quasi-experimental study,

3. Identifies suitable timing strategies for feasibility study preparation and presentation.

4. Identifies differences in preferred feasibility study timings based on system type and orientation of the evaluation team.

5. Develops multiple strategies for appropriately addressing the feasibility study timing issue.


The next section is devoted to the literature survey and the informal survey of several companies. Subsequent sections report the results from the detailed study. Note that in the rest of the paper, we do not distinguish between preparation and presentation times; thus the terms “preparation” and “presentation” are used interchangeably.

**Literature Survey and Comments on Organizational Use**

There is very little reported research findings on feasibility timings. However, authors of systems analysis and design texts have recommended different timings, as shown in figure 1. It is noteworthy that most authors recommend only one feasibility study, to be conducted early in the system development cycle. A few authors suggest multiple studies at different points in the life cycle. There is considerable difference of opinion as to how early the study should be conducted. A rough tabulation from figure 1 indicates the following textbook preferences for the feasibility timing:

- 28% at investigation proposal time
- 24% at requirements study time
- 48% at system proposal time

Furthermore, an informal survey of companies in the Greater Boston area and in the Memphis area was conducted to determine the feasibility study timings used in recently completed system development projects. Of the responses on 42 projects, a feasibility study was done on twenty nine projects (69%). Of these, nine (31%) were formal feasibility studies, and the remaining twenty (69%) were informal fea-