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**PRE-PROJECT PLANNING:
BEGINNING A PROJECT
THE RIGHT WAY**



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Pre-Project Planning: Beginning A Project the Right Way

**Prepared by
The Construction Industry Institute
Pre-Project Planning Research Team**

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Executive Summary

Research conducted by the Pre-Project Planning Research Team indicates that well-performed pre-project planning can:

- reduce total project design and construction costs by as much as 20 percent (versus authorization estimate).
- reduce total project design and construction schedule by as much as 39 percent (versus authorization estimate).
- improve project predictability in terms of cost, schedule, and operating performance.
- increase the chance of the project meeting environmental and social goals.

The team has developed a pre-project planning process model outlining the major sub-processes. This publication gives an overview of the process, as well as guidelines and principles for implementing the process.

Six pre-project planning factors that significantly affect project success are outlined in this publication. Among these are the need to increase total project design work-hours completed to between 10 and 25 percent prior to project authorization; development of a written charter; project control guidelines developed; execution approach prepared; adequate number of organizations participating in pre-project planning, and pre-project planning plan in place.

The research team has also arrived at the following three conclusions:

- Pre-project planning is an owner-driven process that must be tied closely to business goals.
- Pre-project planning is a complex process that must be adapted to the business needs of the company, tailored to specific projects, and applied consistently to all projects in order to gain full benefits.
- Corporate goals and guidelines for both pre-project planning and the project must be well defined and aligned among project participants. Alignment requires involvement of operations, business, and project management early in the pre-project planning process.

Key individuals must be empowered by management to act on these goals, as well as be accountable for their actions.

This research indicates a direct relationship exists between the level of pre-project planning effort and project success. The research team therefore encourages owner organizations and other professionals in the construction industry to understand the underlying pre-project planning process and act quickly and effectively to embrace its tenets.

Introduction

The CII Pre-Project Planning Research Team conducted exploratory research to define the pre-project planning process and its benefits in the capital facility life cycle. The research shows that pre-project planning plays an important role in the overall success of any capital facility expenditure.

Research Background

In 1990, CII identified pre-project planning as an important area for research, and subsequently chartered the Pre-Project Planning Research Team to investigate this subject. It is widely believed in the construction industry that pre-project planning has a significant impact on the outcome of capital facility construction. However, to date, little research has appeared in the literature concerning this relationship, and the implications of this process and its potential impact on project success are not well understood.

One widely held belief is that the early stages in the project life cycle, such as business planning and pre-project planning, can have a much greater influence on a project's outcome than later stages, as shown in Figure 1. The curve labeled "influence" in Figure 1 reflects a company's ability to affect the outcome of a

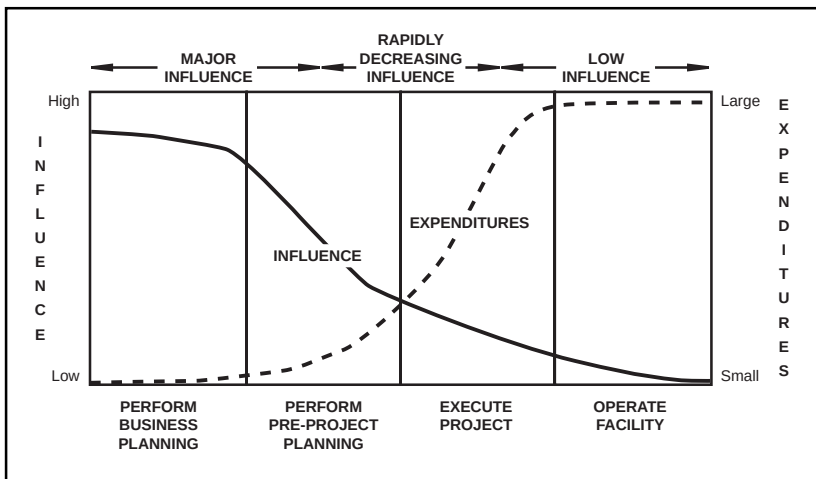


Figure 1. Influence and Expenditures Curve for the Project Life Cycle

project during the various stages of a project. The diagram illustrates that it is much easier to influence a project's outcome during the project planning stage when expenditures are relatively minimal than it is to affect the outcome during project execution or operation of the facility when expenditures are more significant.

To find the most effective methods of project definition and cost estimating for appropriation approval, the research team established the following objectives:

- 1) Define the pre-project planning process for the construction of capital facilities and develop a glossary of related terms;
- 2) Evaluate the relationship between overall project success and the level of pre-project planning effort; and
- 3) Develop a handbook identifying the best pre-project planning methods and practices.

What is Pre-Project Planning?

The research team defines pre-project planning as *the process of developing sufficient strategic information with which owners can address risk and decide to commit resources to maximize the chance for a successful project*. Pre-project planning is often perceived as synonymous with front-end loading, front-end planning, feasibility analysis, programming, and conceptual planning.

To study the pre-project planning process, the research team adopted the IDEF0, Structured Analysis and Design Technique, methodology. This methodology was developed for the U.S. Air Force in the early 1980s to model the functional relationships of manufacturing processes involved in defense weapons procurement contracts.

Figure 2 is an example of one of six IDEF0 diagrams that were developed and relates to the major functions involved in pre-project planning. Underlying these diagrams is a structured review process, a detailed glossary of terminology, and a narrative describing the interactions within the diagram (Reference 1).

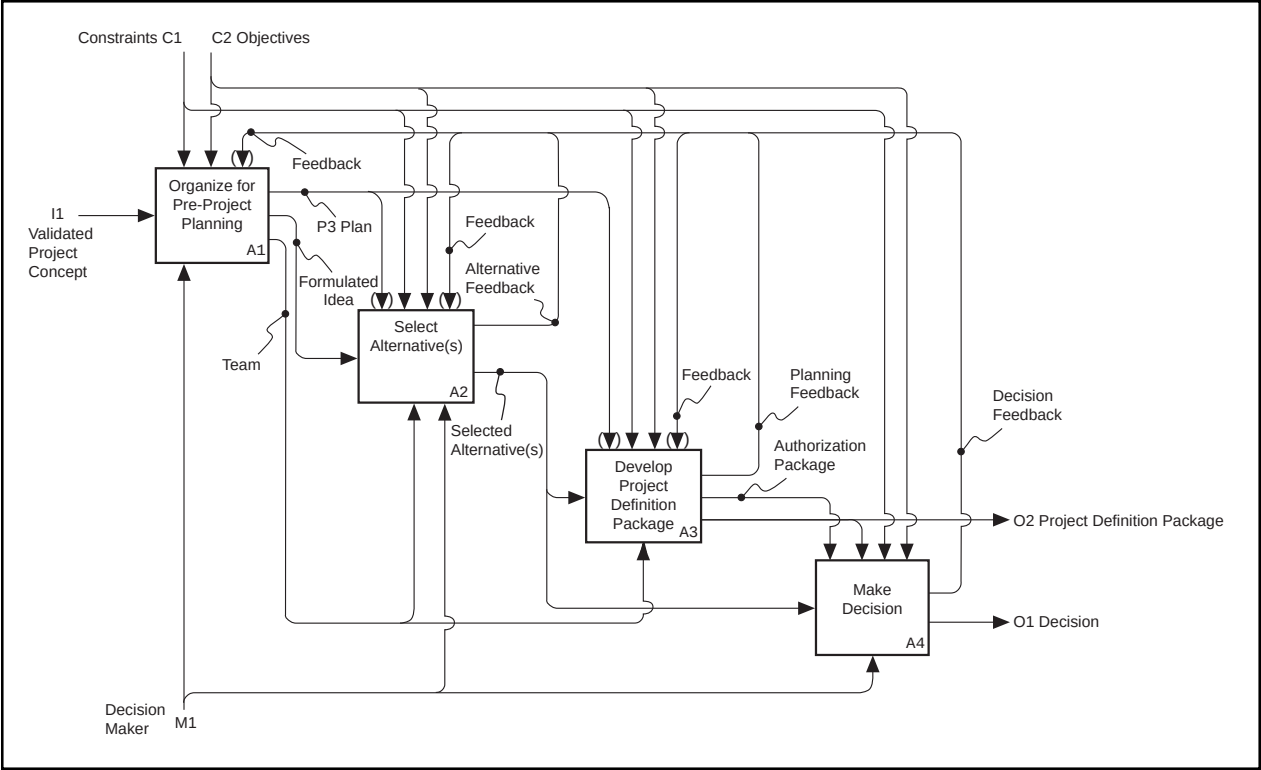


Figure 2. A0 Diagram—Perform Pre-Project Planning