

Project Structure
 Having a definition of deliverables, the project manager needs explicit structuring of the project to:

- Relate the specific objectives to the general.
- Define the elements which comprise the deliverables.
- Define the activities which yield the elements and deliverables as their output.
- Show the hierarchical relationship among objectives, elements, and activities.

The work breakdown structure (WBS) is the tool used to meet these needs. While the WBS may be represented in either indented (textual) or tree (graphical) formats, the graphic tree format has the advantage of easy comprehension at all levels. The tree version of the WBS also has the considerable advantage that entries may be made in the nodes ("boxes") to indicate charge account numbers, accountable staff, etc.

Figure 5 is a portion of the indented WBS for the PM&C Program, showing the nature of the WBS in general and the structure of the PM&C Program project in particular. At this point we can identify the component elements and the activities necessary to achieve them. A hierarchical numbering system was applied to the elements of the WBS, which is always a convenience. The 22 Design Phase Reports (2100 series in Figure 5) speak for themselves, but it is important to note that this WBS is the original WBS: All of these reports, analyses, and determinations were defined prior to starting the program and there were no requirements for additional items.

type of project is involved? What is the cost-benefit relationship? What are the contingency plans? Why is it being done this way (that is, why were alternatives rejected)? Figure 3 not only illustrates this approach, but is the executive summary for the Heublein PM&C system.

Objectives

Goals for a project at Heublein must be stated in terms of deliverable items. To so state a project objective forces the definition of a clear, comprehensible, measurable, and tangible objective. Often, deliverable items resulting from a project are documents. In constructing a residence, is the deliverable item "the house" or is it "the certificate of occupancy"? In the planning stages of a project (which can occur during the project as well as at the beginning), asking this question is as important as getting the answer. Also, defining the project in terms of the deliverables tends to reduce the number of items which are forgotten. Thus, the Heublein PM&C concept of objectives can be seen to be similar to a "statement of work" and is not meant to encompass specifications (detailed descriptions of the attributes of a deliverable item) which can be included as appendices to the objectives of the project.

Figure 4 shows the objectives stated for the Heublein PM&C program. It illustrates one of the principles set for objective statement: that they be hierarchically structured, starting with general statements and moving to increasingly more detailed particular statements. When both particular and general objectives are defined, it is imperative that there be a logical connection; the particular must be in support of the general.

- General Objectives**
1. Enable better communication between Group and Corporate management with regard to the progress of major projects.
 2. Enable Group management to more closely monitor the progress of major projects.
 3. Provide the capability for Group personnel to better manage and control major projects.

- Specific Objectives**
1. Reporting and Control System
 - For communication of project activity with Group and Corporate.
 - Initially for high-cost capital projects, then for "critical," then all others.
 2. Procedures Manual
 - Document procedures and policies.
 - Preliminary manual available for use in general educational seminars.
 3. Computer Support Systems
 - Survey with recommendations to establish need for and value of computer support.
 4. General Educational Package
 - Provide basic project planning and control skills to personnel directly involved in project management, to be conducted by academic authority in field.
 - Technical seminars in construction, engineering, contract administration, and financial aspects of project management.

Defined at the PM&C Workshop, attended by representatives of Operating Groups.

FIGURE 4 Objectives of PM&C program.