

Introduction

Heublein, Inc., develops, manufactures, and markets consumer food and beverage products domestically and internationally. The business of Heublein, Inc., their sales revenue, and some of their better known products are shown in Figure 1. Highlights of Figure 1 include:

- The four major businesses ("Groups") use different manufacturing plants, equipment, and processes to produce their products. In the Spirits Group large, continuous-process bottling plants are the rule; in the Food Service and Franchising Group, small fast food restaurants are the "manufacturing plants."
- The amount of spending for capital projects and support varies greatly among the Groups, as would be expected from the differences in the magnitude of sales revenues.

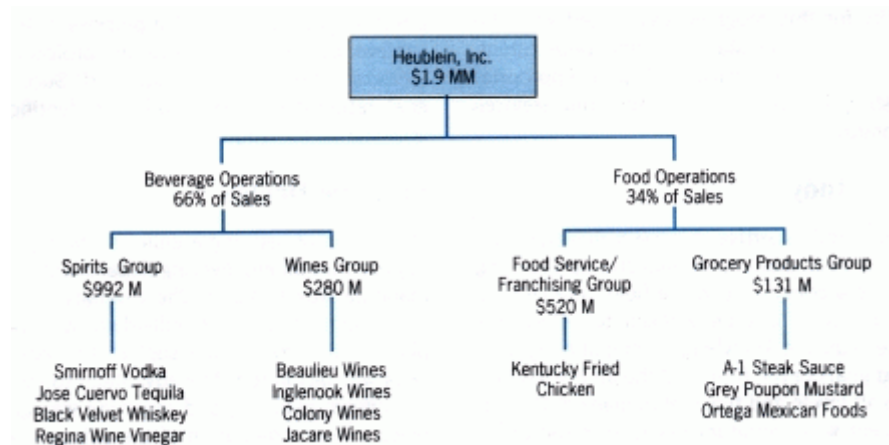


Figure 1: Heiblein, Inc.(fiscal 1981)

The engineering departments of the Groups have responsibility for operational planning and control of capital projects, a common feature of the Groups. However, the differences among the Groups are reflected in differences in the sizes of the engineering departments and their support services. Similarly, financial tracking support varies from full external support to self-maintained records.

Prior to the implementation of the Project Management and Control System (PM&C) described in this paper, the capital project process was chiefly concerned with the financial justification of the projects, as shown in Figure 2. Highlights include:

- A focus on cost-benefit analysis.
- Minimal emphasis on execution of the projects; no mechanism to assure that non-financial results were achieved.

In the late 1970s the following factors focused attention on the execution weaknesses of the process:

- Some major projects went over budget.
- The need for optimal utilization of capital funds intensified since depreciation legislation was not keeping pace with the inflationary rise in costs.

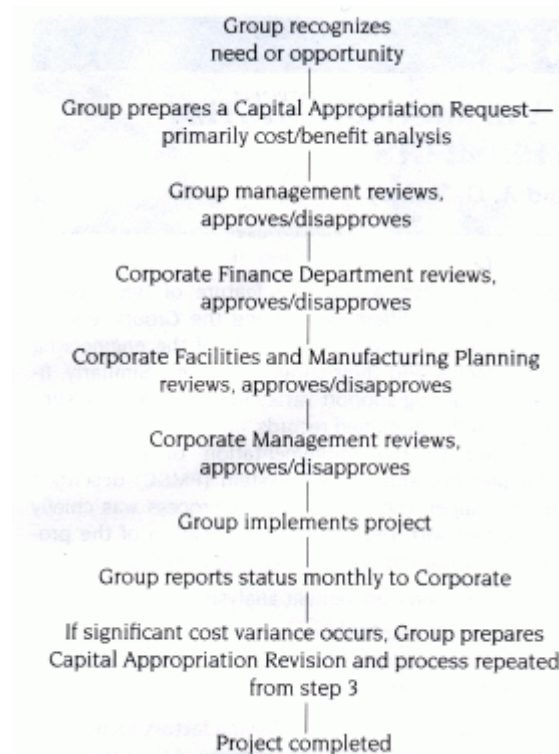


Figure 2: Capital project progress prior to PM&C.

Responding to these factors, Heublein's corporate management called for a program to improve execution of capital projects by implementing PM&C. Responsibility for this program was placed with the Corporate Facilities and Manufacturing Department, which, in addition to reviewing all Capital Appropriation Requests, provided technical consulting services to the corporation.

Feasibility Study

Lacking specialized expertise in project management, the Director of Facilities and

Manufacturing Planning decided to use a consultant in the field. Interviewing of three consultants was undertaken to select one who had the requisite knowledge, compatibility with the style and goals of the firm, and the ability to communicate to all levels and types of managers. The latter requirement was important because of the diversity of the engineering department structures and personnel involved. The first author was selected as the consultant.

With the consultant selected, an internal program manager for PM&C was selected. The deferral of this choice until after selection of the consultant was deliberate, to allow for development of interest and enthusiasm among candidates for this position and so that both the selected individual and the selection committee would have a clear picture of the nature of the program. A program manager was chosen from the corporate staff (the second author).

Having the key staff in place, ground rules were established as follows:

1. The PM&C program would be developed internally to tailor it to the specific needs of the Groups. A "canned" or packaged system would limit this flexibility, which was deemed essential in this application of project management principles.
2. The directors of the engineering departments of each of the Groups were to be directly involved in both the design and implementation of the PM&C system in total and for their particular Group. This would assure the commitment to its success that derives from ownership and guarantees that those who know the needs best determine the nature of the system.
3. To meet the above two ground rules, a thorough fundamental education in the basic principles of project management would be given to all involved in the system design.

The emphasis was to be project planning as opposed to project control. The purpose of PM&C was to achieve better performance on projects, not catch mistakes after they have occurred. Success was the goal, rather than accountability or identification of responsibility for failure.

Program Design

The option of defining a uniform PM&C system, to be imposed on all engineering departments by corporate mandate was rejected. The diversity of projects put the weight in favor of individual systems, provided planning and control was such that success of the projects was facilitated. The advantage to corporate staff of uniform planning and reporting was given second place to accommodation of the unique needs of each Group and the wholehearted commitment of each engineering manager to the effective use of the adopted system. Thus, a phased implementation of PM&C within Heublein was planned in advance. These phases were:

Phase 1. Educational overview for engineering department managers. A three-day seminar with two top-level educational objectives: (1) comprehension by participants of a maximal set of project management principles and (2) explanation of the corporate objectives and

recommended approach for any PM&C system. Despite some expressed initial concern, the response to this session was positive. It was correctly perceived as the first step in a sincere attempt by corporate management to develop a jointly defined PM&C system that would be useful to the managers of projects, rather than to satisfy a corporate reporting need.

Phase II. PM&C system design. A "gestation period" of three weeks was deliberately introduced between Phases I and II to allow for absorption, discussion, and review of the project management principles and objectives by the engineering department managers. At the end of this period a session was called for the explicit purpose of defining the system. The session was chaired by the consultant, a deliberate choice to achieve the "lightning rod" effect whereby any negative concern was directed to an outsider. Also, the consultant-as an outsider-could criticize and comment in ways that should not be done by the engineering department managers who will have long-term working relationships among each other. It was agreed in advance that a consensus would be sought to the greatest possible extent, avoiding any votes on how to handle particular issues which leaves the "nay" votes feeling that their interests have been overridden by the majority. If consensus could not be achieved, then the issue would be sidestepped to be deferred for later consideration; if sufficiently important then a joint solution could be developed outside the session without the pressure of a fixed closing time. The dynamics of this design session included the development of consensus statements which were displayed on overhead transparencies to be worked into shape. As soon as this was acceptable to the Group as a whole, one of two attending stenographers would record the agreement, leave the room and return later with a typed version for group consideration. The use of two group stenographers assured that one was always in attendance. The enthusiasm expressed by the engineering department managers for this meeting was high.

Phase III. Project plan development. The output of Phase II (the set of consensus conclusions) represented both guidelines and specific conclusions concerning the nature of a PM&C system. Recognizing that the PM&C program will be viewed as a model project and that it should be used as such, serving as an example of what is desired, the program manager prepared a project plan for the PM&C program. The remainder of this paper is primarily concerned with the discussion of this plan, both as an example of how to introduce a PM&C system and how to make a project plan. The plan discussed in this paper and illustrated in Figures 3 to 11 is the type of plan that is now required before any capital project may be submitted to the approval process at Heublein.

Phase IV. Implementation. With the plan developed in Phase III approved, it was possible to move ahead with implementation. Implementation was in accordance with the plan discussed in the balance of this paper. Evaluation of the results was considered a part of this implementation.

Project Plan

A feature of the guidelines developed by the engineering managers in Phase II was that a "menu" of component parts of a project plan was to be established in the corporate PM&C

system, and that elements of this menu were to be chosen to fit the situational or corporate tracking requirements. The menu is:

1. Introduction
2. Project Objectives
3. Project/Program Structure
4. Project/Program Costs
5. Network
6. Schedule & Resource Allocation
7. Organization and Accountability
8. Control System
9. Milestones or Project Subdivisions

In major or critical projects, the minimal set of choices from the menu as specified by corporate staff (the definition of a "major" or "critical" project is a part of the PM&C procedure). For "routine" projects, the choice from the menu is left to the project manager. In the PM&C plan, items 6 and 7, Schedule and Resource Allocation, were combined into one section for reasons which will be described as part of the detailed discussions of the individual sections which follow.

Summary

The Heublein PM&C Program met the conditions for a successful project in the sense that it was completed on time and within the budgeted funds. As is so often the case, the existence of a formal plan and continuing reference to it made it possible to deal with changes of scope. Initial reaction to the educational package was so favorable that the population of attendees was increased by Group executives and engineering managers; by reference to the original plan it was possible to predict cost increases in advance. Thus, there was no overrun in any sense.

To deliver on time and within budget, but to deliver a product which does not serve the client's needs is also unsatisfactory. Did this PM&C Program achieve the "General Objectives" of Figure 5? We all know the difficulties of quantifying and measuring such objectives within the real-world environment, where the concept of a proper research design is not allowable: We rarely deliberately experiment with organizations. This is a similar problem to that faced in medical research; if we have a methodology that can save or make millions of dollars, can we deny it to any group, even if we are not absolutely certain of its value?

Thus, as is so often the case in managerial systems and educational programs, we are forced to rely on the perceptions of the clients. In this PM&C Program, the clients are Corporate Management, Group Management, and most importantly, the Managers of Engineering and their staffs. In the short run, the latter two operational clients are primary. In addition to informal feedback from them, formal feedback was obtained in the form of Impact Statements (item number 4000 in the WBS of Figure 5). The Impact Statements concerned the impact of the PM&C Program on the concerned organization ("How many labor-hours are expected to be devoted to the PM&C System?") and response to the PM&C Program ("Has this been of value to you in doing your job better?").

Clearly, the response of perceived value from the operating personnel was positive, or this paper would not have been written. Can we put any measure on it? We sought no formal instruments for measurement, relying instead on subjective, free form, and anecdotal responses. Can we measure the improvement which we believe to be taking place in the implementation of capital and other projects? It may be years before the impact (positive or negative) can be evaluated, and even then there may be such confounding with internal and external variables that no unequivocal, quantified response can be defined.

At this point we base our belief in the value of the PM&C Program on the continuing flow-starting with Impact Statements-of positive perceptions. The following is an example of such a response, occurring one year after the exposure of the respondent:

... find attached an R&D Project Tracking Diagram developed as a direct result of the [PM&C] seminar ... last year. [In the seminar we called it] a Network Analysis Diagram. The Product Development Group has been using this exclusively to track projects. Its value has been immeasurable. Since its inception, fifteen new products have gone through the sequence. ...