
ABB Electromechanical Meters

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ABB is a multinational corporation with a large number of quite autonomous divisions or product groups. ABB in Raleigh, NC has two divisions: the electronics group and the ABB Electromechanical Meter division. This case focuses on the latter, i.e., a division within a local organization and within an even larger corporation.

The focus for using Organizational Consultant need not be the entire corporation, but can be any relatively independent unit within the corporation. ABB Electromechanical Meters is not truly independent as it obviously must meet corporate goals given to it, i.e, profits. Further, it has a special relationship with its sister division, electronics. Nonetheless, we can consider ABB Electromechanical Meter as the unit of focus and analysis. Thus, all questions should be answered with respect to it, not ABB overall.

This case does not have the inputs well defined and you will have to make some reasonable guesses. If there is an input fact which is very problematic for you, examine how sensitive the recommendations are to your input. If the recommendations are not very sensitive, then your best guess is fine. If the recommendations are very sensitive to your best guess, you may want to determine what the input should be. (HINT: this analysis is very similar to the delta or sensitivity analysis, but for a different purpose, namely, how accurate should the input answers be.)

Background

The Asea Brown Boveri (ABB) Meter Plant in Raleigh, NC began as the Westinghouse Meter Plant in 1953. The meter plant was a full service, fully integrated operation which relied upon no outside resources, except raw materials and a few components bought outside the company.

In February, 1989, ABB entered into a joint venture with Westinghouse which culminated in the sale of the meter operation to ABB in December, 1989. This led to the revision of the Meter plant's organizational structure to its current form.

ABB has long held the opinion that individual product lines should live or die on their own merit. As a result, all of their operations are organized to maximize the independence and autonomy of product lines. This organizational philosophy was transferred to the meter plant when ABB assumed control of the operation. The meter plant has two dominant product groups, electromechanical and electronic. Thus, the operation was divided into two basically independent operational groups, split along these general boundaries. All product specific functions followed this split, with each group having its own Product Design, Manufacturing, and Marketing.

Accounting, Human Resources, International Marketing, Purchasing, Receiving and Shipping, Production Planning and Management Information Systems remained independent of the product groups, with their respective managers reporting directly to the Site General Manager, Chuck Hodges. The product groups pay for these "general support" functions through an overhead charge based upon some measure of their relative utilizations of these services.

Both product groups are dependent upon each other to some extent for services which they don't have themselves. The EM group has all of the basic manufacturing capability (screw machines, punch presses, diecasters, molding presses, etc.) along with the support for those operations such as the tool room, plant services (maintenance), etc. While not bound to pur-

chase the services of the electromechanical group, the electronics group typically finds it advantageous to utilize the on-site productive capacity of the electromechanical group (with all the inherent conveniences) rather than go to another source for many of its components. For the same reason, the electromechanical group utilizes the electronics group for the design and assembly of certain components. These components, though electronic in nature, are an evolution of products which have no real relationship with the electronics product line and hence remained with the EM group at the split.

The Electromechanical Meter Organization

The Electromechanical Meter (EM) group is headed by Enrique Santacana and consists of six major functional groups (Manufacturing, Manufacturing Services, Plant Services, Design Engineering, Quality Assurance, and Marketing) under three managers. Enrique has direct profit and loss responsibility for the EM product line, which consists primarily of single phase and poly-phase meters and mechanical demand registers.

The EM group structure is functional and fairly centralized. Its basic goal is to design, manufacture, and sell high performance, cost effective products to utilities and electrical cooperatives across the United States while earning an acceptable return on investment.

Manufacturing

The Manager of Manufacturing, Charles Darden, is responsible for production, manufacturing services, and plant services. Three managers report directly to him: Jerry Williams, Production Manager; Dave Daugherty, Manufacturing Services Manager; and W. A. Peoples, Plant Services Manager. The manufacturing organization has eleven production sections utilizing over thirty individual manufacturing technologies. In addition, manufacturing services maintains virtually all of the tooling in the entire plant, including the electronics production area. Plant services maintains all plant equipment and the facility itself.

Jerry Williams has eight supervisors and two manufacturing technicians reporting directly to him. There are approximately 400 production workers in the electromechanical production operation. Production management makes decisions affecting such things as short-time production schedules, placement of production manpower, and short-time production overtime. Typical actions taken include employee discipline, coordination of routine machine maintenance with production requirements, and coordination of production runs between sections.

Dave Daugherty has one supervisor, six manufacturing engineers, and six industrial engineers reporting directly to him. There are three tool designers and about twenty-five tool makers which report to the toolroom supervisor. Manufacturing services makes decisions such as whether to make or buy production components, when to replace expendable tooling, how to route work through the plant, and when and how to rework worn tooling. Typical actions include the specification of process parameters, specifications and purchase of tooling components, and repair of worn/ broken tooling.

W. A. Peoples has one supervisor and one technician reporting directly to him. In addition, he takes an active role in the day to day functioning of the plant services operation. There are about fifteen maintenance personnel who report to the maintenance supervisor. Plant services makes decisions about how to repair damaged equipment, how to best install new equipment, and when to perform routine (or preventative) maintenance. Typical actions include building repair, equipment repair, and the specification of repair parts and materials.

Design Engineering

The Manager of Design Engineering and Quality Assurance, Rich Greb, is responsible for the product design function, the engineering lab, the model shop, and quality assurance. Five design engineers, three model makers, and two quality assurance supervisors report directly to him. Four engineering lab technicians receive their work instruction through the design engineers. The quality assurance supervisors have about 30 people serving under them in various capacities.

The design group makes decisions such as when to modify an existing component or product, what the best design is for a new product, and what critical parameters need to be maintained in the production of the product. Typical actions include specifying and authorizing changes to component design, testing product performance, and developing new product concepts.

The quality assurance group makes decisions such as when a part or process no longer meets specifications, whether or not a new tool or machine meets all functional requirements, and when a noncritical parameter can deviate from design specifications. Typical actions include rejecting a new tool because of a manufacturing defect, coordinating the establishment of process control guidelines, and shutting down processes and equipment which fail to meet specifications.

Marketing

Enrique is directly in charge of the marketing operation. There are currently about five marketing representatives who serve various sections of the country. Currently, the marketing representatives report to both Enrique and the Electronics product manager, though this may change in the future. Decisions made in marketing include such things as new product pricing, how to best establish market position, and when to discontinue product lines. Typical actions include issuing quotes, entertaining customers, and requesting/specifying product revisions.

Intergroup Communications

There are several dominant lines of communication within the EM group, most of which deal with the continued effective production of the EM product line. The dominant communication channels and the information typically communicated are as follows:

- Manufacturing services to plant services, equipment problems or layout changes.
- Manufacturing services to design engineering, product design changes and new product information.
- Plant services to manufacturing, equipment problems.
- Manufacturing services to manufacturing, major equipment problems and new equipment startup.
- Design engineering to marketing, product design changes and new product initiation.

Managerial Responsibilities

Managers within each of the functional groups are given some leeway in planning work, evaluating subordinates, setting goals, and allocating budgets. However, there are limits to all of the

above, basically surrounding the need to work to a uniform business plan and operate within a fixed set of financial constraints. Therefore, while these managers can generally determine what to do with the people and resources at their disposal, these resources are typically rationed at a higher level.

Questions for Consideration

1. Are there any strategic misfits? If so, are they serious issues that should concern management or should they simply be noted?
2. Examine your inputs on the environment. What would be the implications of an environment which is more uncertain and more complex? Do you think the environment will become more uncertain and more complex in the next five years? What advice would you give to the Plant Manager to prepare for the next five years?
3. Examine the technology inputs for the Electromechanical Meter division. Do you think it will change in the next five years? If so, what are the implications?