Chapter 3

Responsibility Centers: Revenue and Expense Centers

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Responsibility Centers

- Revenue Centers
- Expense Centers
- Profit Centers
- Investment Centers
- Engineered Expense Centers
- Discretionary Expense Centers
- Administrative And Support Centers
- Research and Development Centers
- Marketing Centers
A responsibility center is an organization unit that is headed by a responsible manager.

Management control focuses on the behavior of managers in responsibility centers.

A company is a collection of responsibility centers, each of which is represented by a box on the organization chart.
Nature Responsibility Centers

- A responsibility center exists to accomplish one or more purposes.
- A responsibility center uses inputs and it usually requires working capital (e.g., inventory, receivables), equipment, and other assets to do this work.
- As a result of this work, the responsibility center produces outputs, which are classified either as goods, if they are tangible, or as services, if they are intangible.
Relation Between Inputs and Outputs

• Management is responsible for obtaining the optimum relationship between inputs and outputs.
• In some situations, the relationship is causal and direct ex. production department
• In many situations, however, inputs are not directly related to outputs: advertising expense, research and development.
Measurements of Inputs

• **Cost is a monetary measure of the amount of resources used by a responsibility center.**
  
  – The monetary amount is ordinarily obtained by multiplying the physical quantity by a price per unit of quantity (e.g., hours of labor times a rate per hour). The resulting amount is called "cost."
  
  – Thus, the inputs of a responsibility center are ordinarily expressed as costs.
Measurements of Inputs

• *Inputs are resources used by the responsibility center*

The patients in a hospital or the students in a school are *not* inputs.
Measurements of Outputs

• The cost of outputs are much more difficult to measure. In a profit-oriented organization, revenue is an important measure of output of the whole organization, but such a measure is rarely a complete expression of outputs; it does not encompass everything that the organization does. For example, this year's revenue does not measure the value of R&D work, employee training, or advertising and sales promotion carried out this year; these inputs produce outputs that will benefit future years.
Measurements of Outputs

- In many responsibility centers, outputs cannot be measured satisfactorily. How can one measure the value of the work done by a public relations department, a quality control department, or a legal staff?
- In many nonprofit organizations, no good quantitative measure of output exists. A college easily can measure the number of students graduated, but it cannot measure how much education each of them acquired.
- Others use an approximation, or surrogate, of the output.
Efficiency and Effectiveness

• The two criteria for judging the performance of a responsibility center.
• The terms are almost always used in a comparative, rather than in an absolute sense.
Efficiency and Effectiveness

- **Efficiency** is the ratio of outputs to inputs, or the amount of output per unit of input.
- Responsibility Center A is more efficient than Responsibility Center B either (1) if it uses less resources than Responsibility Center B, but has the same output, or (2) if it uses the same amount of resources as Responsibility Center B and has a greater output than Responsibility Center B.
- Note that the first type of measure is an easier type of measurement in many situations.
Efficiency and Effectiveness

- Effectiveness is the relationship between a responsibility center's outputs and its objectives.
- The more these outputs contribute to the objectives, the more effective the unit is. Since both objectives and outputs are often difficult to quantify, measures of effectiveness are difficult to come by.
- Effectiveness, therefore, is often expressed in nonquantitative, judgmental terms, such as "College A is doing a first-rate job, but College B has slipped somewhat in recent years."
Efficiency and Effectiveness

- An organization unit should be both efficient and effective; it is not a case of choosing one or the other.

- Efficient responsibility centers are those that do whatever they do with the lowest consumption of resources; but if what they do (i.e., their output) is an inadequate contribution to the accomplishment of the organization's goals, they are ineffective.

- If a credit department handles the paperwork connected with delinquent accounts at a low cost per unit, it is efficient; but if it is unsuccessful in making collections, or if in the process of collecting accounts, it needlessly antagonizes customers, it is ineffective.
Revenue Centers

- Outputs are measured in monetary terms; but no formal attempt is made to relate inputs (i.e., expenses or costs) to outputs (If expenses were matched with revenues, the unit would be a profit center.)

- Revenue centers, therefore, are marketing organizations that do not have profit responsibility. Actual sales or orders booked are measured against budgets or quotas.
• Each revenue center is also an expense center in that the revenue center manager is held accountable for the expenses incurred directly within the unit. The primary measurement however, is revenue. Revenue centers are not charged for the cost of the goods that they market. Consequently, they are not profit centers.

• The manager of a revenue center does not have knowledge that is needed to make the cost/revenue trade-off required for optimum marketing decisions. For instance, revenue centers typically do not have authority to set selling prices.
Expense Centers

• *Expense centers are responsibility centers for which inputs, or expenses, are measured in monetary terms, but in which outputs are not measured in monetary terms.*
  – engineered expense centers
  – discretionary expense centers.
• *Engineered costs* are elements of cost for which the "right" or "proper" amount of costs that should be incurred can be estimated with a reasonable degree of reliability. Costs incurred in a factory for direct labor, direct material, components, supplies, and utilities are examples.
• *Discretionary costs* (also called "managed" costs) are those for which no such engineered estimate is feasible; the amount of costs incurred depends on management's judgment about the amount that is appropriate under the circumstances.
• Expense centers in which all, or most, costs are engineered costs are engineered expense centers; expense centers in which most costs are discretionary are discretionary expense centers.
Engineered Expense Centers

Engineered expense centers have the following characteristics.

- Their inputs can be measured in monetary terms.
- Their outputs can be measured in physical terms.
- The optimal dollar amount of inputs required to produce one unit of output can be established.
Engineered expense centers (also called "standard cost centers") usually are found in manufacturing operations that employ some form of standard cost system. Warehousing, distribution, trucking, and similar units in the marketing organization also may be engineered expense centers, and so may certain responsibility centers within administrative and support departments. Examples are accounts receivable, accounts payable, and payroll sections in the controller department; personnel records and the cafeteria in the human resources department; shareholder records in the corporate secretary department; and the company motor pool. Such units perform repetitive tasks for which standard costs can be developed. (Note that these sections are in departments that are discretionary expense centers.)
• In an engineered expense center, the output multiplied by the standard cost of each unit produced represents what the finished product "should" have cost. When this cost is compared to actual costs, the difference between the two represents the efficiency of the organizational unit being measured.
• We emphasize that engineered expense centers have other important tasks not measured by costs alone. The effectiveness of these aspects of performance should be controlled. For example, expense center supervisors are responsible for the quality of the products and for the volume of production in addition to their responsibility for cost efficiency. Therefore, the type and amount of production is prescribed and specific quality standards are set so that manufacturing costs are not minimized at the expense of quality. Moreover, managers of engineered expense centers may be responsible for activities, such as training, that are not related to current production; judgments about their performance should include an appraisal of how well they carry out these responsibilities.
There are few, if any, responsibility centers in which all items of cost are engineered. Even in highly automated production departments, the amount of indirect labor and of various services used can vary with management's discretion. Thus, the term *engineered expense center* refers to responsibility centers in which engineered costs predominate, but it does not imply that valid engineering estimates can be made for each and every cost item.
Discretionary Expense Centers

• The output of discretionary expense centers cannot be measured in monetary terms. They include administrative and support units (e.g., accounting, legal, industrial relations, public relations, human resources); research and development organizations; and most marketing activities.
• The term "discretionary" does not mean that management's judgments are capricious or haphazard. Management has decided on certain policies that should govern the operation of the company: whether to match, exceed, or spend less than the marketing efforts of its competitors; the level of service that the company provides to its customers; the appropriate amount of spending for R&D, financial planning, public relations, and many other activities.
• One company may have a small headquarters staff; another company of similar size and in the same industry may have a staff that is 10 times as large. The managements of both companies are convinced that they made the correct decision on staff size; but there is no objective way of judging which decision was actually better (or whether they were equally good, and the differences reflect other differences about the way the companies operated.) Managers are hired and paid to make such decisions.
• Management's view about the proper level of discretionary costs is subject to change. Dramatic changes may occur when a new management takes over.

• After such a drastic change, the level of discretionary expenses generally has a similar pattern from one year to the next.
The difference between budgeted and actual expense is *not* a measure of efficiency in a discretionary expense center. It is simply the difference between the budgeted input and the actual input. It in no way measures the value of the output. If actual expenses do not exceed the budget amount, the manager has "lived within the budget"; however, because by definition the budget does not purport to measure the optimum amount of spending, we cannot say that living within the budget is efficient performance.
General Control Characteristic

Budget preparation.

• In formulating the budget for a discretionary expense center, however, management's principal task is to decide on the magnitude of the job that should be done.

• These tasks can be divided generally into two types—continuing and special. Continuing tasks are those that continue from year to year—for example, financial statement preparation by the controller's office. Special tasks are "one-shot" projects—for example, developing and installing a profit budgeting system in a newly acquired division.
• The technique called *management by objectives* is often used in preparing the budget for a discretionary expense center. Management by objectives is a formal process in which a budgetee proposes to accomplish specific tasks and states a means for measuring whether these tasks have been accomplished.
The starting point in preparing the budget is the strategic plan (as described in Chapter 8), or if the company does not prepare a strategic plan, the current level of spending. The program amounts are adjusted for the latest information on inflation as well as for other factors. In recent years, many companies have substantially reduced the size of their administrative and support organizations.
• Some companies include a section in the budget explaining the activities that would be curtailed or canceled if the budget were reduced by 5 or 10 percent and another section explaining the activities that would be increased or started if the budget were increased by 5 or 10 percent. This technique is called sensitivity analysis. Senior management can use this information to form judgments regarding the appropriate level of spending in a discretionary expense center. Most companies, however, do not require a sensitivity analysis; they prefer that departmental managers concentrate their efforts on preparing the best possible budget for the activities that they believe should be undertaken.
Some companies use data for competitors or data from trade and industry associations. For instance, information on R&D spending as a percent of sales for several competitors in the industry may be used as one input in deciding the budget for the R&D department. Industry and competitor comparisons have obvious limitations, and these should be recognized.
General Control Characteristic

• **Cost variability.** In discretionary expense centers, costs tend to vary with volume from one year to the next, but they tend *not* to vary with short-run fluctuations in volume within a given year. By contrast, costs in engineered expense centers are expected to vary with short-run changes in volume. The reason for the difference is that, in preparing budgets for discretionary expense centers, managements tend to approve a change in budget size that corresponds to changes in budgeted sales volume—that is, additional personnel are budgeted when volume is expected to increase, and layoffs or attrition are planned when volume is expected to decrease. In part, this reflects the fact that volume changes do have an impact throughout the company, even though their actual impact cannot be measured; in part, this results from a management judgment that the company can afford to spend more in prosperous times. Since personnel and personnel-related costs are by far the largest expense item in most discretionary expense centers, the annual budgets for these centers tend to be a constant percentage of budgeted sales volume.
Based on the approved budget, managers of discretionary expense centers hire additional personnel or plan attrition. Having done so, it is uneconomical for them to adjust the work force for short-run fluctuations that occur within the year. Hiring and training personnel for short-run needs is expensive, and temporary layoffs hurt morale. Thus, although costs of discretionary expense centers are sometimes classified as fixed, they are in fact fixed only within a year; they tend to change with changes in volume from one year to the next.
Type of Financial Control

• Type of financial control. The financial control exercised in a discretionary expense center is quite different from that in an engineered expense center. The latter attempts to minimize operating costs by setting a standard and reporting actual costs against this standard. The main purpose of a discretionary expense budget, on the other hand, is to allow the superior to control costs by participating in the planning. Costs are controlled primarily by deciding what tasks should be undertaken and what level of effort is appropriate for each. Thus, in a discretionary expense center, financial control is primarily exercised at the planning stage before the amounts are incurred.
Measurement of Performance

• **Measurement of performance.** The primary job of the manager of a discretionary expense center is to accomplish the desired output. Spending an amount that is "on budget" is satisfactory. Spending more than this amount is cause for concern, and spending less than the budgeted amount may indicate that the planned work is not being done. The financial performance report is not a means for evaluating the efficiency of the manager. This is in contrast to the report in an engineered expense center, which helps higher management to evaluate the manager's efficiency.
• If these two types of responsibility centers are not care-fully distinguished, management may treat the performance report for a discretionary expense center as if it were an indication of efficiency. If this is done, the people responsi-ble for spending may be motivated to spend less than budgeted, and the lower spending will result in less output. In any event, there is little point in trying to increase efficiency by such indirect methods as rewarding executives who spend less than budget.
• Control over spending can be exercised by requiring that the superior's approval be obtained before the budget is overrun. Sometimes, a certain percentage of overrun (say, 5 percent) is permitted without additional approval. If the budget really sets forth the best estimate of actual costs, there is a 50 percent probability that it will be overrun, and this is the reason that some latitude is often permitted.

• The preceding paragraphs relate to financial control. Total control over discretionary expense centers is achieved primarily by the use of nonfinancial performance measures. For instance, the quality of service provided by many discretionary expense centers can be judged based on the opinion of its users.
Administrative and Support Centers

Administrative centers include senior corporate management, business unit management, and managers who are responsible for their staff units. Support centers are units that provide services to other responsibility centers.

• Control Problems. The control of administrative expense is especially difficult because of (1) the near impossibility of measuring output and (2) the frequent lack of congruence between the goals of the staff department and the goals of the company.
Administrative and Support Centers

- Difficulty in measuring output

Some staff activities, such as payroll accounting, are so routinized that they are engineered expense centers. For others, however, the principal output is advice and service; and there are no valid means of measuring the value, or even the amount, of this output. If output cannot be measured, it is not possible to set cost standards and measure financial performance against these standards. A budget variance, therefore, cannot be interpreted as representing either efficient or inefficient performance. For instance, if the finance staff were given an allowance to "develop an accounts receivable system," a comparison of actual cost to budgeted cost would not tell management how effectively the job had been done. The job of development and installation might have been poor, regardless of the amount spent.
Administrative and Support Centers

• Lack of Goal Congruence

• In most administrative staff offices, managers want to have an excellent department. Superficially it may appear that an excellent department is best for the company. Actually a great deal depends on how one defines an "excellent department." For example:

• Line managers want the controller to be able to answer immediately any question involving accounting data. The cost of a system to do this, however, might far exceed the benefits it provides.

• A perfect legal staff will never permit the slightest flaw in any contract they approve. The staff required for complete assurance can be very large, however. The potential loss from minor flaws may be much less than the cost of ensuring perfection.
Thus, although a staff office may want to develop the "ideal" system, program, or function, the ideal may be too costly when compared to the additional profits that it generates. At worst, there can be a tendency to "empire build" or to "safeguard one's position," without regard to its value to the company.

The severity of these two problems—the difficulty of measuring output and the lack of goal congruence—is directly related to the size and prosperity of the company. In small and medium-sized businesses, senior management is in close personal contact with staff units and can determine from personal observation what they are doing and whether a unit is worth its cost. Also, in a business with low earnings, discretionary expenses are often kept under tight control. In a large business, senior management cannot possibly know about, much less evaluate, all the staff activities; also, in a profitable company, there is a temptation to approve staff requests for constantly increasing budgets.
• The severity of these two problems is also related directly to the organizational level of the staff activity. For example, at the plant level, the administrative staff tends to be controlled carefully by the plant manager who has personal knowledge of what is happening. At the business unit level, the staff has more discretion in the tasks that it performs than at the plant level; at the corporate level, there is even more discretion. In general, the type of staff activity that is performed at the plant and business unit level is closely related to organizational objectives. Discretionary expense centers at the corporate level are the most difficult to judge in relation to objectives.

• Support centers often charge other responsibility centers for the services that they provide. For example, the management information services department may charge others for computer services. These responsibility centers are profit centers, as discussed in Chapter 4.
Administrative and Support Centers

• Budget Preparation

• The proposed budget for an administrative or support center usually consists of a list of expense items, with the proposed budget being compared with the current year's actual. In some companies, the presentation is more elaborate, consisting of some or all of the following components:
• A section covering the basic costs of the center. This includes the costs of "being in business" plus the costs of all activities that must be undertaken and for which no general management decisions are required.

• A section covering the discretionary activities of the center. This includes a description of the objectives and the estimated costs of each such activity. The purpose of this section is to provide information to allow management to make cost-effective decisions.

• A section fully explaining all proposed increases in budget other than those related to inflation.
Clearly, these sections are worthwhile only if the budget is large and if management wishes to decide on the extent of the activities of the center. In other situations, the amount of detail depends on the importance of the expenses and the desires of management. The presentation should be aimed at providing the information needed for an intelligent decision, given the level of the center's activities.
R&D Centers

• Control Problems
  – Results are difficult to measure quantitatively
  – As contrasted with administrative activities, R&D usually has at least a semitangible output in patents, new products, or new processes. Nevertheless, the relationship of these outputs to inputs is difficult to measure and appraise. A complete "product" of an R&D group may require several years of effort; consequently, inputs as stated in an annual budget may be unrelated to outputs. Even if an output can be identified, a reliable estimate of its value often cannot be made. Even if the value of the output can be calculated, it is usually not possible for management to evaluate the efficiency of the R&D effort because of its technical nature. A brilliant effort may come up against an insuperable obstacle, whereas a mediocre effort may, by luck, result in a bonanza.
The goal congruence problem in R&D centers is similar to that in administrative centers. The research manager typically wants to build the best research organization that money can buy, even though this is more expensive than the company can afford. A further problem is that research people often may not have sufficient knowledge of (or interest in) the business to determine the optimum direction of the research efforts.

Research and development can seldom be controlled effectively on an annual basis. A research project may take years to reach fruition, and the organization must be built up slowly over a long time period. The principal cost is for the work force. Obtaining highly skilled scientific talent is often difficult, and short-term fluctuations in the work force are inefficient. It is not reasonable, therefore, to reduce R&D costs in years when profits are low and increase them in years when profits are high. R&D should be looked at as a long-term investment, not as an activity that varies with short-run corporate profitability.
R&D Centers

• The R&D Continuum

• Activities conducted by R&D organizations lie along a continuum. At one extreme is basic research, and at the other extreme is product testing. Basic research has two characteristics. First, it is unplanned; management at most can specify the general area that is to he explored. Second, there is often a very long time lag before basic research results in successful new product introductions.
• Financial control systems have little value in managing basic research activities. In some companies, basic research is included as a lump sum in the research program and budget. In others, no specific allowance is made for basic research as such; but there is an understanding that scientists and engineers can devote part of their time (perhaps 20 per-cent, or one day a week) to explorations in whatever direction they find most interesting, subject only to informal agreement with their supervisor.

• For product testing projects, on the other hand, the time and financial requirements can be estimated, not as accurately as production activities, but with sufficient accuracy so that a comparison of actual and budget amounts has some validity.
As a project moves along the continuum from basic research, to applied research, to development, to production engineering, to testing, the amount spent per year tends to increase substantially. Thus, if a project ultimately will turn out to be unprofitable, as is the case with many projects (90 percent by some estimates), it should be terminated as soon as possible. The decision to terminate a project is difficult; the project sponsors are likely to report its likelihood of success in the most favorable light. In some cases failure is not discernible until after the product reaches the market.
R&D Centers

• R&D Program
• There is no scientific way of determining the optimum size of the R&D budget. In many companies, the amount is specified as a percentage of average revenues; "average" rather than "annual" revenue for a specific year, is used because the size of the R&D organization should not fluctuate with short-term swings in revenues. The percentage is arrived at partly by comparisons with what competitors are spending (the amounts must be disclosed in published annual reports), partly by what the company is accustomed to spending, and partly by other factors. For example, senior management may authorize a large and rapid increase in the budget if it thinks there has been a significant breakthrough.
The R&D program consists of a number of projects plus, in some companies, a blanket allowance for unplanned work, as mentioned earlier. This program is reviewed annually by senior management, often by a research committee consisting of the chief executive officer, the research director, and the production and marketing managers; the latter are included because they will use the output of successful research projects. This committee makes broad decisions about the magnitude of projects: new projects, projects in which work is to be expanded, projects in which work is to be cut back, and projects that are to be discontinued. These decisions, of course, are highly subjective. They are made within the ceiling established by the overall policy on total research spending. Thus, the research program is determined not by adding the total amount of approved projects but, rather, by dividing the "research pie" into what seems to be the most worthwhile slices.
R&D Centers

• Annual Budgets

If a company has decided on a long-range R&D program and has implemented this program with a system of project approval, the preparation of the annual R&D budget is a fairly simple matter. The annual budget is the calendarization of the expected expenses for the budget period. If the annual budget is in line with the strategic plan and the approved projects (as it should be), the budget approval is routine, and its main function is to assist in cash and personnel planning. Preparation of the budget gives management an opportunity for another look at the R&D program. Management can ask: "In view of what we now know, is this the best way to use our resources next year?"

Also, the annual budget ensures that actual costs will not exceed budget without management's knowledge. Significant variances from budget should be approved by management before they are incurred.
R&D Centers

- Measurement of Performance
  - Each month or each quarter, actual expenses are compared to budgeted expenses for all responsibility centers and also for projects. These are summarized progressively for managers at higher levels. The purpose of these reports is to assist the managers of responsibility centers to plan their expenses and to assure their superiors that expenses are within approved plans.

- In many companies, two types of financial reports are provided to management. The first type compares the latest forecast of total cost with the approved amount for each active project. This report is prepared periodically and given to the executive or group of executives that controls research spending. Its main purpose is to help determine whether changes should be made in approved projects. The second type is a report of actual expenses in each responsibility center compared with the budget amounts. Its main purpose is to help research executives in expense planning and to make sure expense commitments are being met. Neither report of financial information tells management about the effectiveness of the research effort. Progress reports are the formal source for this information. Management makes judgments about effectiveness, partly on the basis of these progress reports but primarily on the basis of face-to-face discussions.

- The management control of projects is discussed in more detail in Chapter 17.
Marketing Centers

• In many companies, the activities that are grouped under the heading of marketing consist of two quite different types, and the control that is appropriate for one type is different from the control that is appropriate for the other. One set of activities relates to filling orders, and they are called "order-filling" or "logistics" activities. The other type relates to efforts to obtain orders. These are the true marketing activities, and are sometimes labeled as such. Alternatively, they may be called "order-getting" activities. Order-filling activities take place after an order has been received, and order-getting activities take place before an order has been received.
Marketing Centers

• Logistic Activities
Logistics activities are those involved in moving goods from the company to its customers and collecting the amounts due from customers. They include transportation to distribution centers, warehousing, shipping and delivery, billing and the related credit function, and collection of accounts receivables. The responsibility centers that perform these functions fundamentally are similar to expense centers in manufacturing plants. Many are engineered expense centers that can be controlled through standard costs and budgets that are adjusted to reflect the costs at different levels of volume.
• Marketing Activities
  • Marketing activities are those carried on to obtain orders. They include test marketing; establishing, training, and supervising the sales force; advertising; and sales promotion. These activities have important characteristics that affect the management control problem.
  • The output of a marketing organization can be measured; however, it is difficult to evaluate the effectiveness of the marketing effort because the environment in which it operates cannot be controlled. Economic conditions or competitive actions, over which the marketing department has no control, may be different from that expected when sales budgets were established.
  • Meeting the budgetary commitment for selling expense is normally a minor part of the evaluation of marketing performance. If a marketing group sells twice as much as its quota, it is unlikely that management will worry if it exceeded its budgeted cost by 10 percent. The impact of sales volume on profits tends to overshadow cost performance. The sales target, not the expense target, is the critical factor in evaluation.
  • The control techniques that are applicable to logistics activities are generally not applicable to order-getting activities. Failure to appreciate this fact can lead to incorrect decisions. For example, a reasonably good correlation is often found between volume of sales and the level of sales promotion and advertising expense. This may be taken to mean that sales expenses are variable with sales volume. Such a conclusion is fallacious. Budgets that are flexible with changes in sales volume cannot be used to control selling expenses that are incurred before the time of sale. Advertising or sales promotion expense budgets should not be adjusted with short-run changes in sales volume. As indicated above, many companies budget marketing expenses as a percentage of budgeted sales, but they do so not because sales volume causes marketing expense, but rather on the theory that the higher the sales volumes, the more the company can afford to spend on advertising.
  • In summary, a marketing organization has three types of activities and, consequently, three types of activity measures. First, there is the amount of revenue that the activity generates. This is usually measured by comparing actual revenue with budgeted revenue and comparing physical quantities sold with budgeted units. Second, there is the order-filling or logistics activity. Many of these costs are engineered expenses. Third, there are order-getting costs. Order-getting costs are discretionary; no one knows what the optimum amounts are.