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Control of Distribution Costs Through the Use of Standards.

Letricia Gayle Rayburn
Louisiana State University and Agricultural & Mechanical College

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A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Accounting

by

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ABSTRACT

During the years that production was increased to supply the needs of rapidly growing markets, major problems in production cost accounting were met and solved with little attention given to distribution cost problems. The scope of marketing has broadened until now the task of distribution is not merely to fill existing demand, but also to create and discover demands for new products. The cost of distribution increased as the role which distribution has been called to play in our economic system expanded. This cost increase has been steeper than the general cost trend. Yet, management has not been quick to appreciate the advantages provided by such accounting tools as standard costs and responsibility accounting in locating areas needing improvements in distribution.

The purpose of this study is to explore the field of distribution cost standards to develop an approach to planning and decision making. In this analysis, the literature in the field was reviewed and summarized and case studies of several companies having standard costs established for the distribution functions were made.

The approach suggested in this study for the control and analysis of distribution costs first involves determining by what particular segment of the market the costs are to
be accumulated. The business segment chosen will depend on the specific nature of the business and the distribution cost problems involved.

The distribution functions to be costed are then determined; so that costs can be accumulated by functions within the business segment chosen. Functionalization of distribution activities leads to a consideration of cost responsibility and control as the responsibilities of individuals in a business organization generally follow the specific lines of a function. The expenses included in a functional group should not only be closely related, but should vary according to the same factor or measurement. The technique followed in this study of dividing major functions into small classifications of responsibility has the purpose of ensuring that the work performed is of a homogeneous character. Generally a greater degree of control is obtained under more precise functionalization.

The factors of variability for measuring the cost centers within the functions are then determined. The factor of variability should reflect the principal activity in the center. Because standards are established for each of the functional factors of variability, care must be exercised in the selection of the units of variability if the standards are to be meaningful and if the variances from standard are to be accepted in the measurement of performance.

Standards are then translated into budgeted costs using a flexible budget. Actual costs are compared with standard
costs and the variances are analyzed for the purpose of identifying the factors that caused the difference between the standard and actual costs so that the inefficiencies can be eliminated.

Although it can reasonably be accepted as factual that problems in determining distribution costs are substantially more difficult than in the factory, it does not necessarily follow that the program should be dropped simply because it is difficult. This study shows that standard costs are effective cost control tools and the application of standard costing to distribution expenses is invaluable if intelligently applied.

This study suggests that marketing and accounting people should make an effort to become more fully aware of the mutual problem they have in developing and applying distribution cost concepts. Since standard costs hold the promise of being able to provide management with better understanding of marketing data, management cannot afford to ignore the advantages of standards in the analysis and control of distribution costs.
CHAPTER I

INTRODUCTION

A Statement of the Problem

Decades ago marketing activity moved in a comparatively narrow area. This was due to the fact that consumers produced much of their own goods and trading was largely on a barter basis. The scope of marketing broadened tremendously as civilization developed from a simple pastoral economy through the stage in which the village craftsmen supplied a local market to the present position in which goods from any one country are distributed to the most distant part of the earth. With the simplest division of labor within the family there was no distribution costs. At each more complex stage of development the expenditures on distribution costs have become larger.

Significance of Distribution Costs

The manufacture of many articles formerly produced in small quantities in almost every locality has now become highly concentrated in a few favorable areas to take advantage of specialized machinery, labor, materials, and other resources. While specialized mass production in highly concentrated geographical areas has increased production efficiency,
this change has made distribution more complicated. Justification of the large capital costs of equipment required in some industries can only be met by a high level of production. This high production level also requires highly skilled techniques in advertising and market research to sell the large output of production.

During the years that production was increased to supply the needs of rapidly growing markets, major problems in production cost accounting were met and solved with little attention given to distribution cost problems. When the American economy is operating at full swing, often the profit leaks due to inefficient distribution are regarded as normal costs of doing business. In this period few companies take the time to determine the efficiency of their distribution systems. Generally it is only when they are in the midst of a cost-price squeeze that they ask themselves how efficient are our distribution systems. The post World War II prosperity enjoyed by many firms was an open invitation to additional competition. Since the war ended, more and more companies have arrived at the point where their products have to be sold rather than apportioned among waiting customers.

In the present buyers' market, the producer must persuade the consumer that his goods are necessary and important. Consumers must be informed about new products before they are

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ready to buy them. Competition calls for increased expenditure on advertising and the presentation of the product. The task of distribution is not merely filling existing demand, but also creating and discovering demands for new products.

As the scope of marketing broadened, the cost of distribution increased. This cost increase has been steeper than the general cost trend.

In 1959, for example, our gross national product was 186 per cent higher than in 1949, an increase of 59 per cent in physical volume and of 27 per cent in price over 10 years. The consumer price index during this period went up 23 per cent. But looking at significant items of the marketing cost, we find that salesmen's salaries went up on the average of 79 per cent. The cost of operating his automobile was 35 per cent higher. The cost of transporting finished goods went up by 41 to 102 per cent, depending upon whether shipment was by rail or truck. A page of advertising in Life magazine cost 44 per cent more in 1959 than it did in 1949. Newspaper ads were up 36 per cent. And, even though the TV audience increased fantastically during that ten-year period, the cost of such advertising per thousand home went up by 34 per cent.²

It has been estimated that distribution costs account for about 59 per cent of the cost of consumer dollar spent while production costs comprise the other 41 per cent. This does not mean that every firm incurs its total costs in this ratio as the manufacturing concern may incur a greater proportion of production costs.³


Because it has been decades since a wide band of the economy has felt the competitive pressures that exist today in industry, many business executives are finding it increasingly difficult to meet their profit objectives. As sales volume drops, the extra effort to get increased volume naturally increases the unit selling costs. Increased selling prices or lower profits are two possible results of increased costs. Since lower profits are seldom acceptable to company management and stockholders and higher selling prices often result in sharply decreased sales volume, the only acceptable alternative is cost control.¹

This cost-price squeeze is forcing management to pay closer attention to operating costs. There is every evidence that in the future the reduction of distribution costs will offer the greatest opportunity for securing competitive advantages. Such cost factors as labor, raw materials, and taxes are becoming more standardized within industries and less under the control of the management.

The problem of knowing how much is spent for distribution is vital because of its direct relationship to the company's profit. The solution of this problem is important not merely to each individual business but to our private enterprise system as a whole. The effectiveness with which management meets the problem has a direct bearing on the country's

economic welfare. The public's attitude toward private business administration is also affected by the effectiveness with which management meets this challenge. Management techniques must be considered in relation to their contribution to the economic and social welfare of the entire community.
Nothing short of the best decisions are in the interest of either corporate profits, good public relations, or the general welfare.  

**Distribution Cost Accounting Development**

For decades creative effort has been dedicated to the lowering of production costs through mechanization and scientific management and to the elimination of inefficiencies in producing goods. The substantial progress that resulted from these efforts has contributed to the increased standards of living in the United States. Although these improvements are still far from ultimate efficiency, production progress has advanced far ahead of the improved efficiency in distribution activities. Much of the benefits of the economies of mass production have been lost in the wastes of haphazard distribution. As production costs have gone down, distribution costs have gone up.

The field of distribution was neglected at the very

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time that the problems of production were being attacked with such vigor and success. The inventive genius that has been successfully applied to production has hardly begun to be applied in the elimination of distribution inefficiencies. Originality has been used in their field but often only to persuade people to buy more goods rather than to reduce their price.

In the manufacturing phase of the production-sales cycle, the cost accountant has been provided standard costs, responsibility accounting, and time studies. The accountant did not let the engineer or production man take over the whole fact finding and evaluation job. But as the marketing function has grown, marketing men turned not to the accountant but to operations research, motivation research, and marketing research techniques. Often the accountant is keeping books without regard to responsibilities or functions, without volume indication or cost measurement, and without analysis or comparison with other methods from the profitability point of view.7

The accountant has not made himself familiar with the marketing process in the same thorough way he has mastered the production process; he has not completely understood the functions he was attempting to measure or to evaluate. He has not learned what induces consumers to buy or how to evaluate

the financial aspects of a new product. The financial man
also does not know what motivates a salesman. He has not
learned that the cheapest method of distribution does not
always lead to the largest net profit. The effect of the
relationship between costs and competition has not been
established.

Today, modern management expects pertinent production
reports that highlight operational weaknesses; manufacturing
inefficiency is viewed as inexcusable. Management has been
quick to appreciate the advantages provided by accounting
tools in locating areas needing improvement. The establishment
of production standards is taken for granted by production
management. There has been an attitude of complacency
toward distribution costs as compared to the scrutiny applied
to production costs. Few manufacturers know the cost of selling
a product to a specific customer in a particular location.
Even fewer producers know how much it should cost to make
this type of sale. The area of distribution cost accounting
remains neglected while much emphasis is placed on production
cost accounting. The result has been extensive wastes.8

There is no doubt that real progress has been
made in some types of cost analysis of distribution. Often,
however, the progress has been made in areas that are comparatively
easy to measure; most of the attention has been directed to

8Frank S. Howell, "A Contribution’ Approach to Distribution
minimizing costs. Too little attention has been given to evaluating the efficiency of various marketing functions. Lack of accepted techniques has not allowed distribution expenditures to receive the critical appraisal necessary for the production of the most effective managerial reports.

**Marketing Management Concept**

The importance of distribution cost analysis has been intensified by the introduction of a new marketing concept called marketing management. This concept places the marketing manager in a key position in the overall management of a company. Under this philosophy the marketing man plays an integral part in every phase of the production-distribution cycle. His job does not begin where production ends as he must first establish what products the consumer wants. This is a significant departure from the traditional focus on manufacturing with the marketing tasks being merely to sell what is made.

Since a significant number of companies have adopted this extended scope of marketing management, the cost accountant cannot afford to ignore this change. The emphasis on marketing and the expanded functions of marketing require more of the accountant's creative talent in developing tools for analysis. By and large, businessmen admit that they are not satisfied with their knowledge of distribution costs, and they feel that their overall distribution performance can and must be improved. Simple average historical cost analysis of distribution costs is
not adequate for modern marketing needs.9

The management challenge concerning the control of
distribution costs exists under any social system. This challenge
has essentially nothing to do with the question of the merits
of private enterprise. Even if the whole challenge was shifted
to government managers, the problem would still remain because
in this situation consumers would have little freedom of choice
concerning what, when, and where to buy. The problem would
exist because business managers must make decisions concerning
distribution based on insufficient knowledge of the true nature
of the problems and inadequate tools for judging performance
to insure that the decisions are the best possible ones.10

A Survey of the Study

Purpose of the Study

The purpose of this study is to explore the field of
distribution cost standards to develop an approach to planning
and decision making. This study suggests that marketing and
accounting people should make an effort to become more fully
aware of the mutual problem they have in developing and applying
distribution cost concepts. Often accountants are not well
informed on the practical problems of marketing and the

9Michael Schiff, "An Accountant's Reflections on New
Thinking on Marketing," NAA Bulletin, XLI, Section 1 (October, 1959),
p. 90.

10Gullitin, loc. cit.
assistance which accounting can render in solving them. Marketing men often are inadequately informed concerning the principles, practices, and problems in accounting which underlie cost records.

This study demonstrates that the same principles used in production apply to distribution costs and that the same techniques can be used successfully. Certain techniques are outlined for providing management with control information. Control through the establishment of standards and the measurement of variances is just as effective as in the production area. The purpose of this study is to show that distribution costs are particularly suitable for the application of standard cost methods. The application of standard costing to distribution expenses is invaluable if intelligently applied. In these days of rising costs and keen competition, management cannot afford to ignore the advantage of standards in the analysis and control of distribution costs.

Method of Approach

The method of approach used in this analysis was to summarize, from primary and secondary sources, the existing information that pertains to the control of distribution costs through the use of standards. A second aspect of the study involved conducting case studies of companies having standard costs established for the distribution functions. The practices of these companies were investigated to determine if accounting tools can be applied to the control of distribution.
Limitations of the Study

It is beyond the scope of this study to evaluate the ever-expanding role which distribution has been called to play in our economic system. Marketing has been assigned this role like other institutions; if it is fulfilling this role poorly, distribution may cost too much. This study accepts the role distribution is playing and does not regard these expanded services demanded of the distribution system as inherently unproductive and wasteful.

Cost standards may be set for production expenses and distribution expenses. This study, however, is concerned primarily with the distribution expenses. There are many different types and forms of cost standards which are applied by many firms to achieve the desired goals of management, but only the current standards are discussed in this study.

Report of Other Studies

In 1948 the National Association of Cost Accountants published a Standard Cost Research Series entitled "How Standard Costs Are Being Used Currently". This research series gave little attention to standards for distribution costs and was

11 Distribution expenses will be defined in a latter chapter.

12 In 1957 The National Association of Cost Accountants changed its name to National Association of Accountants.
concerned more with production standard cost accounting.

The National Association of Cost Accountants published Research Series 19, 20, and 21 in 1951. These reports have been combined and reprinted under the title, "Analysis of Nonmanufacturing Costs for Managerial Decisions". This research study dealt with cost analysis for planning, not with the application of standard costing to distribution expenses.

In 1954, the National Association of Cost Accountants published Research Series 25, 26, and 27 which are combined and reissued under the title, "Cost Control of Marketing Operations". The purpose of these research reports was to reexamine accounting techniques which may be useful to aid management in the control of marketing costs. One of the accounting tools given in this research study was standard costs. A few of the companies interviewed in the study had standard marketing costs, but the research reports showed that standard distribution costs were not as widely used or with as much success as in production. The reports also revealed that none of the companies interviewed had succeeded in developing standards for distribution activities which are comparable in precision to standards used in production.

Examination of the literature of cost and management accounting shows that the portion dealing with distribution costs is indeed small compared to the large volume of material available concerning accounting for costs of production activities. In spite of the increased significance of the marketing function and the increase in the amount of expenditures for marketing
operations, there are comparatively few articles published on industry experience on new methods in this field. This suggests that there is room for innovation in the approach to the analysis and control of distribution costs. This study shows several areas where new techniques and innovation may be very fruitful.
CHAPTER II

DISTRIBUTION COST ACCOUNTING

Distribution Cost Defined

Marketing is the second stage in the life history of every commercial product as products are produced, marketed, and consumed. Marketing includes all activities involved in the flow of goods from production to consumption. Distribution is widely used to mean the same as marketing. Some business analysts, however, feel that marketing is a more descriptive term than distribution. They feel that the term marketing stresses the functional character of these business operations.

Distribution costs have generally been defined in two ways; this term has both a broad and narrow meaning. One interpretation classifies all those costs which can be broken down into marketing functions that are incurred after the product is manufactured as distribution costs. Distribution costs cease at the time the article is converted into cash. This broad definition includes what are commonly known as selling expenses and portions of general administrative and financial

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expenses.

There are several different interpretations that can be included under the narrow definition of distribution costs. One interpretation defines the costs of making sales and delivering products as distribution costs. The expenses incurred in the direction, control, and administration of the company are excluded from distribution costs.²

A more narrow definition excludes both general administration and financial expenses from distribution costs; only those costs which are usually under the control of the sales manager are defined as distribution costs.³ The term distribution costs has also been defined as relating only to the delivery function. Under this concept, the marketing function comprises two costs, delivery and selling. The costs incurred in promoting sales and retaining customers are charged to selling costs; only the physical transportation costs are charged to distribution costs.⁴

The above definitions of distribution costs refer to three classes of costs: productive, distributive, and administrative. There is no place in a profit-seeking enterprise for costs that are not expected to produce revenue, whether directly or indirectly. Production costs are incurred for the purpose of


securing goods to be exchanged for cash. Costs of distribution are incurred so that an actual exchange between the enterprise and an outside party may be effected. Administration costs, including credit and collection costs, are incurred to facilitate both production and distribution functions. When administration costs are considered in relation to the work with which they are so closely related, they are actual, though indirect, portions of production and distribution costs. In view of these facts, it is the opinion of the author that only two classes of costs should be recognized, both revenue producing. These are productive and distributive costs.

Four types of utility are generally recognized by the economists; these types of utility are form, place, time, and possession. Production involves only the creation of form utility. Distribution refers to providing time, place, and possession utility. The practical distinction between production and distribution used in this study is that production is the addition of physical or form utility to goods while distribution is the addition of time, place, and possession utility.5

The term "distribution costs" as used in this study has reference to all costs incurred other than those related to the production of products or acquisition of goods to be sold. This term includes the costs of effecting sales, of getting the goods into the buyers' possession, of collecting the amounts due,

and a portion of general administration. This term includes not only what is commonly known as selling and delivery costs, but also portions of administration and financial management expense. Inclusion of portions of administration and financial management expense would appear to be entirely justified; especially if the expenses of the credit and collection department are considered to be of this type. The analyst using this definition is concerned with the list of expenses which follow the gross profit figure in the income and expense statement.

It is a common mistake to regard distribution as a function only of middlemen and retailers and confined to the finished product. Distribution operations may be a part of every step in the entire process. Distribution costs begin with the determination of consumer wants and the delineation of market opportunities. Product design is a marketing function and its costs are distribution costs. Even though costs are often incurred before or during production, the term "after production" is often used to refer to distribution costs.

Classifying all costs under either production or distribution costs is convenient. However, the dangers in dividing all business costs into these two divisions should be recognized. Some costs are production and/or distribution costs only in the very broadest and long-range sense. Also it is often very difficult to make the cutoff between production and distribution costs because of the interrelationship which exists between them. Changes in
distribution methods can seldom be isolated; their effect on production usually must also be considered. 6

Classification of Distribution Costs

The generally accepted accounting practice is to charge distribution costs against the operations of the accounting period in which they are incurred. This practice is often followed because too much uncertainty exists as to the probable results in future periods arising from distribution expenses incurred.

There are, however, exceptions to this general rule. Sometimes it is possible to determine objectively the amount of distribution costs deferrable to future periods. Exceptions can be made through prepaid or deferred expense accounts or in the inventory values of stock. Many accountants believe that there should be a deferral of such distribution costs as sales promotion assuming a change in the normal volume of sales during the period under review. Unusual advertising incurred in one period may justifiably be deferred to succeeding periods. For example, if a company advertises this month to publicize a new product to be offered for sale for the first time next month, this advertising campaign cost could be deferred.

When expenditures are made for such items as catalogues

which have a life of several years and are used over this period, the expenditure may be charged to a deferred expense account or expensed immediately. Costs of transporting products to warehouses and of handling the product into the warehouse are properly includable in the inventory values of materials at the warehouses. When transportation and handling costs are added to inventory values, they are deferred until the material is sold. The effects on profits of this treatment, however, may not be sufficient to warrant the additional accounting effort required. Unless quantities of product in the warehouse vary considerably from period to period, the effect on profits is immaterial.

Direct, Semidirect, and Indirect Costs

"Direct costs represent costs whose application to specific segments of a business is readily ascertainable." These costs can be directly identified with the specific function or the unit being costed.

Semidirect costs are related to a particular analysis in some measurable way; these costs are a combination of both direct and indirect elements. Semidirect costs are costs which cannot be directly identified with the unit being costed, but good bases for allocation are available in distributing these costs.

"Indirect costs are those incurred for and benefiting

sales generally but that cannot be traced to specific products, customers, or other functional units.\(^8\) Indirect or joint costs are incurred simultaneously for two or more activities. Since these costs have no measurable relationship with specific units, they cannot be traced directly to the units. These jointly incurred costs must be apportioned to the individual marketing activities. The great bulk of distribution costs are indirect in nature.

The distribution of direct and indirect costs varies with the unit being costed. For example, the costs to operate a district sales office would be direct costs for a district sales territory. A company organized on a product basis would treat salesmen's commissions as direct costs to specific products, while the salary of the general sales manager is an indirect cost. Using functional analysis, depreciation of a delivery truck is a direct cost and heat, light, and maintenance are indirect costs.

Variable, Semivariable, and Fixed Costs

Distribution costs must be further analyzed into variable, semivariable, and fixed costs. Variable costs of distribution are costs which vary in approximately direct ratio to changes in volume. If any part of the output is sold on the basis of a commission on the selling price or on the basis of a definite

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sum per unit, these costs will always be variable and will always move in direct ratio with sales. When commissions are calculated as a given percentage of sales, these costs are a variable cost of the direct selling function. Commissions may also vary at an increased rate as sales increase; the change is variable but with the rate of increase of commissions exceeding the rate of the sales increase. Handling, warehousing, and shipping expenses are additional items generally referred to as variable costs.

Many distribution costs are neither fixed nor variable but possess some of the characteristics of both; they are in the nature of semivariable costs. Semivariable costs of distribution are costs which vary with volume, but not in direct ratio because such costs contain both fixed and variable elements. An analysis of distribution costs will likely reveal that many costs are fixed for a given range of sales volume but do change in amount when substantial changes in volume occur. For example, for a given sales volume range, salesmen's salaries may be considered fixed, but if sales volume increases out of this range, additional salesmen will be needed and total salesmen's salaries will increase. Another example of a semivariable distribution cost is salesmen's compensation, composed of both fixed salaries and commissions which vary with sales volume. Statistical techniques such as scattergraph or the least squares method can be used for separating the fixed and variable elements of a semivariable expense.
Costs such as salaries of sales executives, rent, and building depreciation remain constant regardless of the volume; these costs are referred to as fixed costs. Changes in the number of customers or products has little effect on sales management cost; these costs are relatively fixed over large variations in the number of customers served or the quantity of product sold. There are very few costs which are fixed in the sense that they cannot be changed by management action. However, fixed costs of distribution are more subject to change than the fixed costs of production. Many distribution costs are fixed for a given range of sales volume and become variable when substantial changes in volume occur. Depreciation, taxes, and insurance incurred to operate a branch may be considered fixed, but if sales volume declines and the branch is closed, the entire expense may be eliminated.

The distinction between fixed and variable cost is useful for distribution cost analysis as well as for production cost analysis. The fixed and variable classification facilitates the control and analysis of distribution expenses. This distinction permits flexible budgeting, facilitates the allocation of distribution costs to segments of business, and is basic to break-even analysis. Proper recognition of the fixed and variable classification is also especially important in such decisions as the addition of new product lines or territories.

Production costs are segregated into fixed and variable classifications on the basis of their behavior relative to output;
this application cannot be applied to distribution costs with
the same degree of reliability. Sales volume is not a sufficient
factor in determining the fixed and variable elements of all
marketing costs. The complex nature of many distribution costs
require the analysis of causal factors of variability to divide
the costs into fixed and variable components. The distribution
costs classified as fixed or variable may change from company to
company as managerial decisions may dictate the classification.
The divisions between fixed and variable must be flexible, as the
distinction depends upon the conditions in the particular business.

**Controllable and Noncontrollable Costs**

Controllable and noncontrollable costs have sometimes
been considered the same as fixed and variable costs; however,
these classifications are not synonymous. The distinction
between "controllable" and "noncontrollable" is made from the
point of view of the person responsible. Controllable expenses
are those which are subject to the authority and responsibility
of a specific individual. The individual's responsibility is
subject to measurement for only controllable costs. Classification
of an expense as controllable or noncontrollable must be made
within a framework of responsibility and time. For example,
expenses such as depreciation are not controllable within the
short run, but are controllable in the long run because managerial
decisions concerning capital additions determine the amount of
depreciation charges.

One of the first major steps in distribution cost analysis
is the classification of these costs. It is imperative that an accurate analysis and classification be made of each distribution expense. Unless management is able to distinguish and use distribution costs under such headings as direct, indirect, fixed, variable, controllable, and noncontrollable, much of the analysis is wasted. By using this classification of costs, management can gain an insight into which costs can be reduced and which costs will remain constant with changes in sales volume.

**Comparison of Distribution and Production Accounting**

There is no fundamental difference between the problems involved in cost accounting for production and for distribution. The cost must be located and allocated, and the responsibility for incurring the cost must be indicated for cost control purposes. The cost accountant must handle company costs through three major stages: costs must be recorded as they are incurred, costs must be traced in terms of internal activity, and costs must be assigned to periodic revenue. The second and third stages require different treatment for production than for distribution costs. The techniques used in distribution cost accounting are borrowed from cost accounting for production. However, certain fundamental differences exist between distribution and production costs which make the analysis of distribution costs more difficult.

**Numerous and Varied Distribution Agencies**

Cost control is more difficult in distribution than in
production because of the lack of repetitiveness and the lack of consistency in distribution operations. The distribution process is not nearly as highly standardized on the whole as that of production, either between industries or even within the same industry. Each of the operations of the distribution process is open to wide variation of methods, with varying costs.

The nature of distribution makes for little comparability between companies. Many complexities are presented in the analysis and control of distribution costs. It is almost impossible to compare the distribution costs of one company with those of another because the distribution processes probably will be extremely different. Vastly different channels of distribution can be used for similar products. For example, one concern may use a wholesaler-retailer channel of distribution; another concern may use advertising and house-to-house salesmen to distribute a similar product. On the contrary, there are fairly definite limits to the production methods which may be employed. Manufacturers producing like products will usually employ the same or similar production processes.

Flexible Distribution Methods

"Policy commitment need not be projected as far in the future as in the case of production . . . . This situation calls for a greater degree of flexibility and versatility in distributing cost analysis than is usually required for production costs."  

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The field of distribution is an area where courses of action shift quickly. Distribution methods must be flexible for drastic changes and quick revisions in the channel of distribution. Distribution agencies may be quickly readjusted or shifted from one combination to another. A change in market conditions may necessitate a revision in distribution standards. Production changes usually remain in effect longer, and the standards do not require as much revision as distribution standards if they are correctly set in the first place.

Distribution costs are normally subject to more classifications or types of analysis than those of production. Distribution costs presented on a "per product unit" basis are not as meaningful as in production accounting. The tracing of costs within the firm must be done on the basis of some type of cost unit. The unit for production costing is usually a specific quantity of product such as a pound of sugar or a gallon of oil. In production, costs are also collected by departments, cost centers, and processes. Distribution cost accounting is concerned with determining cost by sales territories, by functions, by customers, by salesmen, by products, and by size of order. Cost figures relating to specific market functions or sales channels are generally considered more helpful.

Intangible Cost Elements

One reason for the difference in the growth cycles of distribution and production cost accounting is that the latter measures results that are quantitative in character and the
former does not. In accounting for manufacturing costs identifiable quantities are involved. The end-product of production accounting is subject to ready interpretation by the people possessing knowledge of the manufacturing methods involved. In distribution costing, however, it is not so easy to identify the quantities with the cost incurred. Often there may be no quantitative factors and qualitative factors must be used to measure the results of performance.\textsuperscript{10}

Distribution cost accounting is complicated by the intangible nature of many of the individual costs involved. Psychological factors are present in distribution which are not involved in production. Distribution costs are associated largely with human effort and these human activities generally cannot be reduced to mechanical, repetitive operations. The human element is more pronounced in distribution than in production activity because the worker alone supplies the human element in production, whereas in distribution the action of the buyer as well as the salesman must be considered. The production workers' activities are directly limited to the mechanics of the task. Some distribution activities such as packaging and delivery of goods may be fully as mechanical as production, but most distribution activities such as selling are not purely mechanical tasks.\textsuperscript{11}


Distribution processes are less easily tested than are production processes; many factory processes are subject to rigid laboratory tests with a fairly predictable outcome. The uncertain factors are more numerous in distribution than in production; among the least predictable factor in distribution is the demand of the consumer. The attitudes of customers and competitors are also difficult to measure. The lack of consistent results presents additional distribution problems, for often the efforts of sales promotion may be rewarded with amazing results in one territory, whereas similar efforts in another like territory may produce only frustrating results. Forces in existence prior to the current distribution effort often affects the results produced. Often the success of distribution efforts is contingent upon intangibles which are unpredictable such as eye appeal, fad, seasonal trends, public psychology, and competitors' actions.  

Uncontrollable Factors

Usually the majority of the conditions surrounding production expense are entirely within management control; results of alternative courses of action can be measured with a considerable degree of success. All circumstances are conducive to accurate recording of measurable work and accurate unit costs can be secured. It is easier to develop efficiency in the plant because facts can be more readily determined and conditions more readily

controlled. General business conditions, the weather, and a
wide variety of other uncontrollable factors affect the results
of distribution activities and these factors change rapidly.
The conditions under which distribution costs are incurred often
make costing for control and planning purposes more difficult.

There is often the absence of direct control by one
organization over important costly areas of distribution. In
production, the manufacturer is in relatively direct control
of the operations which he wishes to change. However, in
distribution he must work with many operations that are not
subject to direct managerial control, such as the dealers who
distribute his product. The actions of customers and competitors
are also not under managerial control. Concerns have to solicit
business where the customers are, not necessarily in the location
the concern would like. Customer calls are made at the convenience
of prospective buyers, not at the convenience of the company.
The size of the market and the conditions under which a customer
will give an order are not controllable. Management has little
control over what customers will do, since they may respond to
various appeals.

Production costs are incurred in and near a specific place,
the plant, while distribution activities are spread over the
whole marketing area which frequently represents the entire
nation. The setting for distribution ranges from densely
populated cities to large sparsely settled rural areas.
With so many functions performed away from company locations,
there are no inspectors or timekeepers available when a salesman contacts a prospective customer. Within the factory, time and motion studies can be used to measure effort; no such exact measure of selling effort can be achieved in distribution activities.

Economic Factors

Some economic factors are a handicap to scientific management of distribution activities. There is an inherent tendency for distribution costs to rise with expanded selling efforts while production costs tend to fall with increased manufacturing volume. As more products are produced, more effort is necessary to find additional customers and to open new territories. During periods of keen competition management finds it is far more difficult to increase the sales without increasing the marketing costs more than pro rata.

Historically, most sales managers have considered an increased sales volume as their goal with little regard to profit. Selling efficiency has usually been measured in increased sales volume as an indication of increased profitability. Frequently, however, increased sales volume does not mean increased profit. With the introduction of marketing management, this goal is changing as sales managers see that increased sales do not always mean greater profits. This managerial attitude has not been prevalent in production because the goal in production has been decreased cost per unit. Production efficiency is generally measured in terms of decreasing unit costs.
In production there is a constant drive toward the immediate reduction of direct costs. The most effective means to reduced distribution cost ratios is often more effective sales results without any decrease in total costs.

Competitive distribution is often wasteful because the market territory volume may be so small that one distributor could handle the volume. When a second distributor enters the territory, total distribution costs may double with little or no increased total volume.

Distributors have to consider society's requirements as expressed through public regulatory authorities. Often the public at large is uncertain as to what benefits it desires from a distribution system. These agencies try to control prices for the purpose of preserving competition. Distribution efforts are often surrounded by rules and theories which hinder efforts to distribute goods economically.

**Joint Cost Allocation**

A major problem in both distribution and production cost accounting is the allocation of joint or indirect costs. When an expenditure is incurred for an effort or service that is wholly applicable to one classification for which costs are desired, distribution or production costing is relatively simple. Indirect or joint costs have been troublesome in production, but they are even more so in distribution. Generally the proportion of the total number of items of distribution costs for a given concern that are direct is small as compared with
that of production costs.

Certain distribution costs such as labor, material, delivery, and packaging costs can be traced directly to the cost-unit for which the expenditure was made. For example, salesmen's commissions are direct costs and are incurred only in specific cases; these cost can be directly attributable to a specific sale. There are also certain marketing services such as credit, return privilege, and servicing of products which can be related to units of product. However, while these services are related to production units, they are not necessarily incurred by all units of product. Other distribution costs cannot be clearly identified with units of product because these expenditures are incurred by the enterprise as a whole as a necessity of being in business.

One of the problems inherent in distribution costs is the difficulty of allocating the costs incurred to the sales obtained. In distribution there is often a time lag between effort and result since the entire distributing process may extend over a long period of time. Often a relationship between effort and results is difficult to obtain. During any one fiscal period, for example, the sales may bear little relation to the advertising expense incurred. Results obtained from certain distribution efforts such as advertising and sales promotion do not always appear in the same period the cost was incurred. The response to the first advertising campaign may be negligible as successive appeals are often necessary before
the prospect becomes a buyer. Institutional advertising is often designed to develop brand recognition or to promote long range product expansion. Institutional advertising usually represents a capital expenditure insofar as it aids in the creation of goodwill. Advertising expenditures of this type not only may generate sales immediately, but often will have residual benefits. Another difficulty with advertising is that frequently the expense incurred to develop one specific product line may stimulate the sale of another product line on which no direct advertising cost has been incurred. Therefore, the job of interpreting the results obtained is extremely difficult. 13

Because the majority of distribution costs are indirect expenses and cannot be apportioned to specific cost units, the results which jointly stem from such costs must be determined and separated. A large number of allocations must be made; these allocations must usually be made to more kinds of units of measurement than for similar cases in production. Often there is the lack of sound and determinable basis by which many of the costs can be allocated; because these allocations can be achieved so many ways, a uniform basis of apportionment is generally not established.

Objectives of Distribution Cost Accounting

Distribution cost accounting incorporates both distribution

cost control and distribution cost analysis. Distribution cost analysis is a different process than distribution cost control, and the different approaches use different techniques. Cost control studies the measurement of the performance of a function against a predetermined goal of performance. This predetermined goal may range from a crude average of past performance to a scientifically determined standard based on time and material studies. The difference between the actual and predetermined performance, usually called the variance, is studied with the purpose of decreasing cost and improving performance efficiency.

Cost control is concerned with charges at the point of incurrence or origin rather than with the allocation of the charges to periods, products, and territories. Distribution cost control involves the application of the principles of budgeting and standards to functional costs which the business plans to incurr. Distribution cost control is concerned with the direction of business activities; the distribution method has already been determined by management.

Distribution cost analysis is essentially a search for better ways of performing the distribution tasks. Distribution cost analysis is the assembling of distribution cost items into meaningful classifications; these classifications are then compared with alternative expenditures and with related sales volumes and gross margins. This accounting approach is undertaken in order to aid in the selection of products and territories, in the channels and methods of distribution, and in those quantity sizes in which sale or delivery will yield the largest net profit.
Distribution cost analysis seeks to discover and eliminate the weak areas in the distribution policy and is concerned with efforts to discover the most promising aspects of the business. Both distribution cost control and distribution cost analysis will be discussed in this dissertation, with more attention given to distribution cost control.

Managerial Assistance

In general there are two purposes of distribution cost accounting. First, distribution cost control and analysis is motivated by a desire for more effective planning which will lead to better control over distribution cost. This approach is also concerned with meeting the needs of management in supplying information that will be helpful in decisions relative to increasing the profitability of distribution methods. Distribution cost accounting can force a review of the company's marketing plan; this review provides management with a better understanding of its marketing structure. The second broad objective of distribution cost accounting is to justify courses of action before regulatory bodies which are concerned with marketing policies.

Distribution cost accounting provides various levels of management with distribution cost data necessary to the control of their cost and insures that all supervisors and

employees in distribution areas maintain high performance standards. The marketing expenses incurred in each marketing activity are determined, and the profitability of operations in individual segments of the business are measured. Unfavorable deviations and inefficiencies in distribution procedures are indicated while evaluating the performance of the marketing methods employed; the supervisor and departments responsible for the inefficiencies are also indicated. The detailed record provides a basis for corrective action.

Not only will distribution cost accounting reveal inefficiencies in marketing, but distribution cost accounting is also designed to reveal sources of profits and losses. Marketing policies, methods, and activities can be reviewed in terms of their effect on cost and income. This review can be used to aid management in determining profitable objectives for the business. Distribution cost accounting facilitates appraisal of the profitability of changing distribution policies and techniques. Distribution cost analysis can lead to improved profits through eliminating unprofitable territories and product lines, or by adjusting selling prices. One of the fundamental objectives of controlling and analyzing distribution costs is to select the combination of distribution methods and channels of distribution which will be most profitable in the long run.

The objective of distribution cost accounting is not necessarily cost reduction; the objective is to insure the most effective use of distribution expenditures in terms of maximizing profits. This approach differs in certain respects from production
cost analysis whose objective is usually cost reduction. In fact, as a result of distribution cost analysis distribution expenditures may be increased in order to attract a greater share of the market.

**Government Regulations**

No discussion of a program for the development of distribution cost accounting would be complete without consideration being given to the problems which arise in this field because of legislation and government regulation. Since regulation of business necessarily affects distribution, no study of distribution and its costs should ignore the effects of increasing intervention of government in the conduct of private business. Federal legislation in the matter of marketing practices and price fixing has now made a knowledge of distribution costs a necessity.

The Sherman Act, the Federal Trade Commission Act, and the Clayton Act were all early intrusions of the government into the distribution field. The Sherman Act of 1890 is the basic federal anti-trust law. The purpose of this Act was to preserve the competitive system by forbidding contracts, combinations, or conspiracies in restraint of trade and actual monopolies or attempts to monopolize trade.\(^1\)

The Federal Trade Commission Act of 1914 is in reality a reinforcement and extension of the Sherman Act. This Act created the Federal Trade Commission, an agency which has

jurisdiction over a wide range of unfair competitive methods and practices. A second provision of the Federal Trade Commission Act provided that unfair methods of competition were declared unlawful. 16

The Clayton Act of 1914 was designed to eliminate certain competitive methods that were considered to be potent weapons of monopoly. This Act was directed against such practices as price discrimination, interlocking directorates, acquisition of stock in competing corporations, and tying contracts which force the buyer to buy supplementary and possibly undesirable lines. In addition to curbing monopolistic powers of large industrial concerns, this Act vested authority in the Federal Trade Commission to enforce compliance with the law, subject to review by the federal courts. The general effect of the Clayton Act was to prohibit discrimination only where it had a serious effect on competition generally. Demands arose for further regulatory legislation. 17

The National Recovery Administration of 1933 attempted to establish restrictions on selling below cost. Because of these restrictions, the Act had to develop principles of cost determination which could be uniformly applied throughout industry. Not long after the abrupt demise of National Recovery Administration, business was confronted with more definite cost determination problems as a result of the passage of the Robinson-Patman Act. 18

16 Ibid., p. 354.
17 Ibid., p. 355.
The Robinson-Patman Act is a part of the anti-trust legislation of the nation because it amended Section 2 of the Clayton Act. Of the various regulatory acts which are administered by the Federal Trade Commission, the Federal Trade Practice Act of 1936, better known as the Robinson-Patman Act, is of the greatest direct interest to the cost accountant. Interest in distribution cost analysis increased immediately with the passage of the Robinson-Patman Act, because knowledge of distribution costs became a prerequisite to intelligent price determination. It is not a law for raising or lowering prices; it is a law solely relating to the relationship between prices which different customers pay in a single market.

The general purposes of the Robinson-Patman Act are: (1) to prohibit discrimination in price or in terms of sale between purchasers of commodities of like grade and quality, (2) to prohibit the payment of brokerage or commissions under dummy brokerage firms, (3) to suppress pseudo-advertising allowances, and (4) to provide a presumptive measure of damages in certain cases.

The Act was motivated by a desire to protect small business organizations from misuse of the advantages which large size and buying power may give to some of their competitors. It was thought a large buyer going into a market could persuade some sellers to give him extraordinary concessions in the form of lower costs for materials and merchandise merely because he could offer a large purchase to the seller.

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The first provision above implies that a businessman must first classify his products or commodities into groups; costs of production and distribution must be analyzed on a product and on a market or area basis. Products that are perfect substitutes for each other may be considered different if their brand labels differ because of the imputed value of the label. The Supreme Court recognizes a brand as something of real value.20

Thus a seller who indulges in the luxury of different prices to his customers for the same or similar commodities must be prepared to show (a) that he is not in interstate commerce, or (b) that his pricing practices do not tend to have a substantially undesirable effect either on his own competitors or among his customers, or (c) that the sales in question are nonrepetitive sales of distress merchandise, or (d) that he is merely making a good faith effort to meet the price competition of his peers, or, finally, failing these other defenses, (e) that his price differences are justified by his cost differences.21

The first defense is of little avail because of the difficulty of determining what constitutes interstate commerce. Proof of the second and fourth defenses are very difficult in view of the Federal Trade Commission's interpretations of these phrases. Exceptions to the general rule are provided in the third defense concerning the disposal of obsolescent and seasonal goods. Since the third defense that the sales are nonrepetitive sales of distress merchandise is of no avail.

20 Ibid.

in repetitive transactions, cost justification remains as the defense. 22

The use of distribution cost accounting makes it legally feasible to charge different prices to different types of consumers. This passes on to consumers the advantages of buying in those quantities or by those methods which result in saving to the seller. The Accounting Division of the Federal Trade Commission studies pricing policies and cost data on Robinson-Patman cases. A respondent may elect to justify price differences on the basis of his cost of doing business with different classes of customers. Price variations are allowed for differences arising in the cost of manufacturing different quantities, the cost of sales, or cost of delivering certain quantities. Price differentials granted must not exceed differences in the cost of serving different customers. Not only can price differentials be justified by cost differentials, but also a lower price can be made in good faith to meet a price quoted by a competitor. 23

The cost justification can be applied only if the price differential is offered to all customers who meet the conditions on which the differential is based. Price differentials based on differences in the functions performed by the different classes of customers may be granted without any requirement for cost.

22 Ibid.

justification. This is because customers in different functional groups are normally not in competition with each other.

Under the Robinson-Patman Act manufacturers may at any time be called upon to justify, on the basis of cost, quantity discounts given to large quantity purchases. This Act permits quantity discounts if the same discount is given to all customers purchasing the same quantity. If a company grants quantity discounts, the discount rates should not be established on quantities so high that only a few favored customers can take advantage of them. The quantity ranges in each discount class must be established so that substantial proportions of the company's customers will fall in each range. Advertising allowances are also prohibited under this Act unless the allowances are made to all buyers on proportionately equal terms.²⁴

Savings in distribution costs are most often advanced in justification of price differences. Often the wording of the statute has been interpreted to rule out the possibility of cost justification on the basis of differences in production costs. Rarely are savings in manufacturing costs used as a justification because the greater portion of the products manufactured are not produced on special order. The majority of production activities are performed to meet the needs of all consumers.

No standard type of distribution cost analysis is required by either the Robinson-Patman Act or the regulations

²⁴Neuner, op. cit., p. 873.
of the Federal Trade Commission. To determine cost differences satisfactorily, however, cost statistics regarding all distribution functions must be obtained. Joint costs must be apportioned on bases that appear reasonable and equitable under the individual circumstances. The method used for purposes of price-setting under the Robinson-Patman Act will largely depend upon the manner in which the distribution activity is organized. Activities may be organized on such bases as product lines, territories, and channels of distribution. 25

In order to determine distribution costs applicable to products and classes of customers, analysis of the formal books of account is required. The information obtained in the accounts is often not sufficient to justify pricing policies. Analyses are also required of such statistical records as those which record the functions of credit and collection and the activities of salesmen. According to the report, the Federal Trade Commission has found that most companies do not make this analyses and have no information concerning whether or not they can cost-justify their pricing policies under the provisions of the Robinson-Patman Act. 26

Since discriminatory price making can be avoided when complete cost information is available, this Act will continue to be an important motivating force for improving distribution cost


26 Lundvall, op. cit., p. 642.
accounting methods. The Act has increased the interest and value of distribution cost analysis. The cost accountant should be prepared to study the subject continuously so that unintentional price discrimination that may be in violation of the law will be avoided. Successful enforcement of such regulatory measures as the Robinson-Patman Act require the development and improvement of distribution cost accounting techniques.

However, certain limitations to the successful application of distribution cost accounting under the Robinson-Patman Act should be recognized. The legal use of distribution cost analysis arises only in court tests in which the analysis proceeds upon bases which may utilize legal definitions rather than good accounting theory.

The vague wording of the Robinson-Patman Act leaves ample room for interpretation, as the Act is quite broad and general in its wording. Price discrimination implies competition between purchasers within a given market area; therefore, the producer must define his competitive markets. The area of competition is not defined in the Act. Since the Robinson-Patman regulations refer only to commodities, there are also many borderline cases as between service and commodities. The answers to many of the questions concerning the Act's effect on business operations depend upon the attitude and policy of the Federal Trade Commission.

Summary

Distribution costs are much more difficult to measure
than production costs. In contrast to production, the agencies employed in distribution are numerous and have differing characteristics. The cost to distribute a product will vary not only with the article distributed, but will also usually vary with the type of customer, the territory in which the sale is made, and the method of delivery and sale. The marketing process permits only a limited degree of control because the setting for marketing processes is widely scattered. Psychological factors play a big role in the success of marketing methods; these qualitative factors are often unpredictable and uncontrollable. The problem of indirect and joint costs is also greater in distribution than in production.

In view of these difficulties, the accountant must exert more effort in understanding distribution costs and their relationship to production costs and production and sales volume. Accountants can be of great service to management only when they are aware of the factors which are of the greatest importance for control purposes. While distribution cost accounting will not supply all of the information necessary for effective direction of distribution activities, it is an essential factor. Because of the limitations to successful application of distribution cost accounting under governmental regulations, cost analysis may be more frequently and most profitably employed in areas where distribution cost accounting may assist in managerial decisions. Distribution cost accounting can be an indispensable tool of marketing management.
CHAPTER III

PRELIMINARY PROCEDURES FOR SELECTING DISTRIBUTION COST STANDARDS

Regardless of the objectives of the analysis, the problem of distribution costs requires certain major tasks as the distribution costs must be collected and recorded, the costs must be analyzed on some acceptable basis, and distribution costs must be controlled and interpreted through the use of predetermined standards. The approach used in this study for the control and analysis of distribution costs involves the following basic steps:

1. Determine by what particular segment of the market the costs are to be accumulated: by territories, products, salesmen, methods of distribution, or any combination of these business segments.

2. Determine the functions to be costed and accumulate costs by functions within the business segment. Break broad functions down into cost centers in which operations are reasonably homogeneous and under a single responsibility.

3. Determine the factors of variability for measuring the cost centers within the functions. The factor of variability should reflect the principal activity in the center.

4. Establish standards for each of the functional factors of variability based on past experience modified by industrial engineering studies or judgment. Translate standards into budgeted costs.

5. Compare standards with actual performance and analyze cost variances by source and cause.
A discussion of these steps are included in this chapter and continues into the next chapter. The material in this chapter is concerned with the first three steps.

**Territorial Analysis**

Analysis by manner of application relates effort and cost to results obtained. The application of distribution costs varies with the nature of the analysis sought. In production cost accounting, overhead rates are usually applied only to the products while in distribution cost accounting the scope is much broader because costs may be applied not only to products, but also to sales territories, salesmen, method of distribution, and other business segments. Different business segments can be used for distribution analysis; business concerns should select the ones which will give their operations proper direction. The business segment chosen will depend on the specific nature of the business and the distribution cost problems involved. Since this paper is concerned with the fundamentals of analysis and not the many applications that can be made, distribution costs will only be analyzed by territory.

A territory means a geographical area such as a city, sales district, or other arbitrary area used by a business enterprise as a basis for sales planning and direction. An analysis of distribution costs by territories is needed because the net profit may be influenced greatly by such territorial factors as competitive conditions, needs and desires of the population, and transportation charges. Distribution cost
analysis by territories views each geographical area as a
distinct entity that has unique characteristics which may
invalidate direct comparison of territorial profit figures.
Profit contribution by geographical area measures distribution
cost effectiveness and indicates where efforts should be
concentrated to improve profit position.

**Natural Expense Classification**

A proper system of accounts for recording distribution
cost is an essential prerequisite in distribution cost control
and analysis. The criteria used for choosing expense classifi-
cations is very important. This criteria should not allow
large miscellaneous classifications that contain many different
expense elements because the items in one account should be
homogenous. On the other hand, the classification should not
be so small and insignificant that the dollar savings do not
justify the bookkeeping cost. Analytical efforts will be
considerably impeded if distribution costs cannot be properly
accumulated through the account classification.\(^1\)

Regardless of differences in the kinds of costs needed
for managerial decisions, every concern usually keeps its books
of account so as to express distribution costs by nature or
object of expenditure. The natural expense basis is often
called the primary expense classification since it is usually

made a part of the ledger accounts. Such traditional classifications as salaries, rent, and supplies expenses describe the kind of service the company secured for the expenditures. The particular natural expense classification for a firm depends entirely upon the nature of the enterprise's activity. The number of accounts depends on the extent and detail of the information desired by management.

The natural expense classification serves a broad area as these expenses represent both production and distribution activities; consequently, this classification has little value in itself in determining the cost of various distribution functions. This type of analysis only tells the cost of the entire distribution function; the cost of performing specific operations is not known. Further, this classification has little or no use in itself in determining the cost applicable to certain territories or product lines. If a business concern has no problem as to the efficiency of particular distribution operations or no major decisions to make, analysis by natural expense classification may be adequate. However, since there are so very few business concerns in which these conditions prevail, additional analysis is needed.2

Functionalization

Since the natural classification does not relate groups

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of costs to people or provide a useful means for analyzing functional efficiency, natural expense accounts may be allocated to distribution functions. Distribution of the individual natural classifications to the various functions is the same process as that used in distributing manufacturing overhead costs to departmental accounts.

The term function as applied in this study is defined as any separate and distinct marketing activity carried on by a business concern. Personal exertions that are merely part of another activity are not separate marketing functions; each function should represent a distinctly different activity.

A more dynamic portrayal of company performance can be achieved when expenses are classified by functions. Functionalization of distribution activities also leads to a consideration of cost responsibility and control as the responsibilities of individuals in a business organization generally follow the specific lines of a function. Whenever possible, distribution functions should coincide with an organization setup under an official responsible for results. This organizational setup may be a department, a division, a branch sales office, or other units. Regardless of the scope of this unit, the administrative head is usually delegated authority and is also held responsible for the efficiency of performance under him.3

3 Ibid.
Major Functional Classifications

The functions comprising the distribution task are
variously described and many different ways of organizing
distribution cost are suggested in the pertinent literature.
However, each company must prepare its own list of activities
on the basis of a careful study of the exact work done. Since
the selection of functions depends on the degree of cost control
and cost responsibility desired, marketing executives and
accountants should determine the functions jointly. The best
breakdown may be the one that already exists in the company
for conducting its business.

The number of functions will vary from one company to
another depending upon such factors as size, method of operation,
and the internal organization. The following examples illustrate
how some of these factors affect the scope of distribution
activities assigned to marketing departments. A manufacturer
of a broad product line that sells the product nationally
requires an extensive field organization. If the products are
sold through several channels of distribution, an even wider
range of functions is assigned to the marketing department.
This case may be contrasted with a manufacturer of a narrow
product line that sells the product through a single channel
of distribution. A field force is responsible for personal selling
and for providing information concerning products. 4

4Michael Schiff and Martin Mellman, Financial Management of
the Marketing Function (New York: Financial Executives Research
Since there are so many various marketing procedures and practices in which concerns may engage, a representative functional classification of distribution cost would be difficult to establish. A study of the company organization can help in determining the group of functions needed. In this study, the entire distribution effort is divided into the following major functional classifications: Warehousing and Handling, Transportation, Credit and Collection, Direct Selling, Advertising and Sales Promotion, and General Distribution Activity.

**Detailed Functional Classifications**

The approaches to functionalizing distribution costs vary concerning the degree of functionalization and whether functionalization is integrated completely in the chart of accounts or is made independently off the books. The degree of functionalization refers to the homogeneity of the distribution activities classified within categories. Approaches that have finely defined functional categories consider measures of variability. The expenses included in a functional group should not only be closely related, but should also vary according to the same factor of measurement. For example, the function Advertising and Sales Promotion may require further breakdown into radio media, television media, direct mail, and other advertising media. This technique of dividing major functions into small classifications of responsibility has the purpose of ensuring that the work performed is of a homogeneous character. Generally the more precise functionalization is preferable as
a greater degree of control usually is obtained if the major distribution functions are broken down in detail. This is the approach used in this study; the details of each major function are illustrated in the following chapter.

The chart of accounts can provide for accumulation of sales and distribution costs by control units through the use of digit codes. Digit codes can be incorporated for both analysis by functions and by manner of application with charges coded at the source of the expenditure. In some cases the accounting classification can be set up on a functional basis with the major functions further subdivided by detailed functions. The incorporation of location or territorial codes into functional codes provides for the accumulation of major and detailed functional costs by territories. Product codes, customer codes, and salesmen codes can also be added to simplify additional analysis by manner of application.

If possible the chart of accounts should be so designed that each function receives as many of its charges directly, rather than through allocation, because this incorporation in the general ledger obviously facilitates periodical cost analysis and control. However, such refinements in the official account classification should be carried only to the point where they are feasible. For example, direct identification of an expense item to functions and to application would be neither desirable

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nor feasible if it caused clerical costs to be excessive.
Consideration must also be given to responsibility accounting which dictates cost accumulation along organization lines. In cases where a single responsibility center performs more than a single function or where production responsibility centers perform some distribution functions, functionalization cannot be incorporated in the chart of accounts.

Some natural expense items will have to be apportioned among several functional cost groups since they relate to more than one functional activity. Expenses directly allocable to a functional activity are prorated directly. Expenses not directly allocable to functional activities must be prorated on equitable bases. The bases chosen should reflect most clearly the benefit derived from the indirect costs by the various functions. The procedure is similar to the procedure in accounting for production cost in which the total of the burden is analyzed according to departments or other functional subdivisions of the production process.

Many distribution activities are organized on a territorial basis so that each territory can be charged directly with the expenses incurred within its area and thereby minimizing the proration of expenses. This is especially true when different territories are served by different sales staffs.

A review should be made of each of the functional costs in order to determine if the cost is a direct or indirect cost to territories. For instance, three types of expenses might be
included in the advertising and sales promotion costs: direct territorial advertising, national advertising, and indirect advertising expenses. Advertising which could be definitely identified with expenditures within a specific territory should be allocated directly to each territory. National and indirect advertising covering all territories should be allocated on a unit of variability that appears most appropriate.  

Once direct functional costs are determined and allocated, the application of indirect costs to territories, products, or other market segments can be on a unit fractional cost basis using the factor of variability that appears most appropriate. This procedure appears elementary; however, units of variability may need to be redefined for certain functions. The unit of variability in the functional analysis may not be related to the objective of the applied analysis. The same factor can be applied to some distribution expenses for use in many various types of analyses. For instance, the factor of variability for warehousing is weight and this same work unit can be used in analyses by territories, products, and customers. Other distribution expenses require different factors such as traveling expense which is applied on a per-mile basis to territories and a per-call basis to customers and products. Different conditions may even necessitate different units of variability for

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allocating the same indirect distribution expense to territories.
Units of variability for measuring functional cost in the analysis
by territory will be later discussed in detail.

Functiona1 Factors of Variability

The basis of cost control in production is provided by
the relationships between input and output; this relationship
is reasonably attainable. Standard input costs per unit of
physical output is often used for direct labor and material.
Standard input costs for some broadly defined unit of activity
are generally used for production overhead. In order to extend
this concept to distribution costs, the factors which cause
distribution costs to vary must be identified. A reliable
measure of the volume of output or work performed must be
developed. Such a measure is known as the unit of variability.
This measure is also known as the work or service unit. This
unit will depend upon such factors as the type of function,
product handled, and sales territory used.7

The validity of the functional unit costs depends upon
the reasonableness of the cost unit. If the work unit is not
reasonable to begin with, the resulting functional unit standard
cost will not be valid. Thus, care must be exercised in the
selection of work units if the standards based upon the work

7Gordon Shillinglaw, Cost Accounting — Analysis and
Control (Homewood, Illinois: Richard D. Irwin, Inc., 1961),
pp. 398-399.
units are to be meaningful and if the variances from standard are to be accepted in the measurement of performance. In selecting suitable work units, the unit should be selected on practical grounds to the extent that it should be measurable and produce results which are reasonably accurate and yet are economical in application. There should be a demonstrable relationship between the work unit and the distribution activity. The factor chosen must fluctuate concomitantly with the activity which is the source of the cost. Attention should also be placed upon determining what objectives management had in mind when the expenditures were authorized. The work unit selected for an operation must be a common denominator for all work done in that operation and should be fair and equitable.

The cost accountant should avoid the pitfall of accepting the work units supplied by the marketing department without first analyzing them. Marketing personnel concentrate on the selling aspects and often do not understand how to prorate the time and effort they spend on functional activities.

Sometimes the work unit is chosen merely because of its ease of computation, regardless of the logic. Work units such as percentage of sales, percentage of manufacturing costs, or percentage of gross profit are not often appropriate. This is particularly important because there has been a tendency for distribution managers to think only in terms of sales volume.

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and gross profit per cent.

The simplest method of allocating functional costs to segments uses a single measurement unit to allocate the entire cost of a function. This approach is similar to factory cost allocation methods employing labor hours or machine hours to allocate a cost center's overhead to products. A shortcoming of this approach is that it fails to recognize that some functional expense elements may vary with and be most accurately allocated through more than a single basis.

This is why it was earlier suggested that the more precise functionalization is generally preferable so that the work units can reflect the tasks performed. The selection of a reliable work unit is difficult if discordant elements are combined into a single classification. The analysis of each functional activity to identify the various tasks performed facilitates the selection of valid work units.

The work unit used by other companies for allocating cost is not necessarily a guide to the work unit that should be chosen in a specific case because conditions differ. For this reason, no attempt is made in this study to tabulate all the various work units that could be applied to each function. Since there is no one work unit for each functional operation, it is also difficult to make any intelligent generalizations as to the most appropriate work unit for each function. The examples given in this study are for illustrative purposes only.
Net Profit and Contribution Approach

It may not be necessary to develop units of variability for all distribution costs because there is always a question if a complete analysis of all costs is required or if only direct costs should be allocated to each particular analysis. The view that analysis by manner of application should be designed so as to provide for full allocation of costs and for the determination of a net profit figure is commonly called the net profit approach to cost analysis. On the opposing side is the contribution margin approach which considers only those costs which would be saved if a segment were eliminated or would be incurred if a segment were added.

Advocates of full costing feel that all costs which bear a relationship to the units in question should be assigned to the units for purposes of measuring their profitability. Advocates of this point of view believe each unit must bear its share of the company cost of doing business in addition to its own direct costs. They argue that many of the indirect costs can be assigned to the unit being costed on the basis of demonstrable cost relationship. Where a strong relationship does not exist, the cost must be prorated, but the bases is still reasonable. Those who present this case believe that there is merit in computing a net profit by business units because in the long run, each unit must produce profits.

Other analysts feel the only reliable way to evaluate business activity is to measure the contribution of each unit
to the indirect costs which exists for common benefit of all. Advocates of this opposing view believe that any effort to allocate or prorate costs is confusing and misleading. They feel that allocating common costs to territories may lead to the incorrect conclusion that the removal of a territory would lead to the elimination of these joint cost allocated to them.

Both of these approaches have advantages and are useful managerial tools. The contribution margin approach is often employed as a tool for use in making decisions where alternatives are involved. For example, the results obtained down to the point of indirect costs would be more useful to management in deciding whether to change operation methods or tactics in meeting competition. However, the contribution approach fails where the objective is the determination of explicit net profit figures for each business segment, in which case all costs must be allocated.9

The net profit approach has the advantage of being a guide to management in centering attention upon problem areas calling for long-run remedial action. Net profit is also an indispensable tool of management for judging the profitability of individual territories. Management is familiar with and accustomed to using net profit figures and they can apply the same techniques in dealing with all segments of the business. If a territory does not include its share of all expenses,

management may overlook the need to recover all expenses. It is impossible to say whether a territory is profitable or not, or how profitable or unprofitable, unless it is bearing its share of the cost common to all territories. The net profit approach must also be used in gathering evidence for hearings before the Federal Trade Commission as the analysis must be complete.

Since both viewpoints are valid and the two procedures are not mutually exclusive, there is no reason why the two approaches cannot be combined in a single statement presenting both the contribution margins and the calculated net profit for each territory being studied. This study recognizes that each approach has its own area of usefulness; thus a combined approach is used. In working with territories, directly associated territory costs are first subtracted from the gross margin to give a net contribution to overhead and profit and then the territory’s allocated overhead is subtracted to get net profit. Having both sets of profit figures enables the executive to form judgment with much greater facility than would be the case if only one profit figure were available. Thus, the two tools combined can fill management’s need as each can be used where it best serves.

Summary

Because analysis by natural expense classification neglects the objectives of cost control and cost responsibility,
the natural expenses should be subdivided into functional costs. Cost analysis by functions is useful to management because it usually is more important to know how much it cost to perform a certain operation than to know the total cost of natural expense items. Executives are provided a detailed picture of marketing operations and costs as the patterns and outlines of the marketing structure are revealed when costs are functionalized. Significant changes in total distribution expenses can be traced to specific functions and items of expense for each function.

Costing an activity or function also provides for responsibility reporting. Each functional classification should be made the responsibility of an individual department head. Businesses are normally organized on functional lines; this business organization is a natural outgrowth of the concept of specialization. Functional cost records are based on this manner of business organization in which responsibility and authority are subdivided on the principle of specialization. Individuals can be held responsible for changes in costs through the use of functional cost records. First hand facts concerning actual and standard performance can be given to officials at levels of authority and responsibility.

Costing distribution functions allows for the measurement of efficiency in the performance of these functions. This measurement is accomplished by a comparison of actual results with predetermined standards. A functional classification of expense can serve as a base from which to start as this
classification readily lends itself to the preparation of standards and budgets. Meaningful distribution cost analysis requires an examination of the similarities and differences of the various functional areas of operation to select satisfactory work units on which standards can be selected. Analysis of distribution cost by operating functions has proven to be a useful approach because the purpose and the responsibility for the costs are investigated. The development of functional costs and standards greatly facilitates the further analysis of distribution costs.
CHAPTER IV

SELECTING DISTRIBUTION COST STANDARDS

A complete distribution cost accounting plan must produce both predetermined costs and historical costs. Before management makes an important decision, an estimate of the cost involved must be made and later the actual incurrence of costs must be determined and compared with the advance estimates. Historical analysis of cost is not sufficient for managerial control as management needs to know what the costs should have been as well as what the costs are.

Definition of Standard Costs

Standard costs, as used in this study, refer to predetermined costs set as scientifically as possible with an aim of achieving a certain goal of performance. Standard costs represent what the costs should be under attainable good performance; standard costs do not necessarily imply that perfection has been attained in performance. Standards are yardsticks by which achievement, or lack of achievement, can be measured, and cost trends are indicated by a comparison of actual costs and standard costs. These yardsticks are normally developed through engineering or time study analysis and tend
to reflect historical experience.

There are some differences between standards as applied to production operations and as applied to distribution operations. Standards adaptable to production measure a direct relationship between effort and result. This relationship may not exist in some distribution costs, especially those concerned with order getting. In this study the two principal distribution functions, direct selling and advertising and sales promotion, are considered as order-getting costs, or those costs incurred in activities concerned with persuading the customer to buy. Direct selling differs from the other order-getting cost since it includes those activities which represent primarily personal presentation of the service or product to prospective buyers. Other distribution costs incurred for executing the sales order are designated as order-filling costs. Many order-filling activities relate to the physical handling of goods and clerical operations. Order-getting activities are mainly concerned with nonrepetitive operations, while order-filling costs are concerned more with repetitive operations.¹

Standard cost for order-getting activities are often based on units which measure effort expended rather than results obtained. For example, the work unit for advertising may be cost per reader or per inquiry received, and the standard for selling cost may be based upon a unit of cost per sales call. A comparison of actual and budgeted cost using these

bases will show how effective the cost is in reaching prospective customers with the company's sales appeal. However, these bases will not measure the effectiveness of sales effort in terms of sales order obtained.\(^2\)

Standards and budgets are closely related because standard costs serve as building blocks with which the budgets are constructed. Budgets attempt to set up a predetermined standard of operations for a period or project taken as a whole while standards are concerned with cost per unit. Thus, when standard costs are employed, the budget is largely a summary of standards for all items of revenue and expense.

Standard costing is a very versatile tool with many uses, but probably its greatest contribution is in the field of cost control. Cost control cannot exist without something against which actual results can be compared. Standard costs provide criteria by which it is possible to ascertain what the costs should have been, what they actually are, and why there is a difference. Management is supplied with yardsticks of measurement for use in the day-to-day job of judging operating performance.

**Effect of Accompanying Conditions**

In considering the adoption of standards for distribution, it is important to determine if the surrounding conditions are conducive to a successful use of standard costs for cost control.

\(^2\)Ibid., p. 31.
First of all, management should be interested in controlling cost. In order to achieve maximum utilization, distribution cost analysis must be sold to the top management and the marketing management. There may be little difficulty in selling marketing management because the data supplied by the program can be of invaluable assistance to them in accomplishing their objectives. Top management is usually interested in any program which can improve net profit; however, they also want the assurance that this improved net profit in the distribution operations will not be offset by increased costs in other company operations, particularly the accounting procedures.

It is also important to understand what management thinks such a system will and will not accomplish. Management must understand the principles and basic operations on which these standards are established and the ways they may be employed to facilitate planning and control. Management may have rather serious misconceptions as to what is involved in establishing distribution standards. The advantages and disadvantages of standard costs should be fully reviewed and discussed with all management executives. Management may be under the false impression that the standards in themselves will automatically bring about cost reductions and improvements in operating results. The accountant may find an educational program is needed before distribution standards can be established with any reasonable chance for success. Management should realize that standard costs are flexible and systems and methods can be adapted to develop information which they need. Accountants will be more
interested in producing distribution cost data if they are confident that the results will be used.

A fundamental principle in setting standards is that those responsible for meeting standards should have the opportunity of passing upon them before they are finally set. The people whose activities are controlled by the standard cost system are naturally interested in the methods followed in setting the standards. These people can be of great assistance to the accountant because they are keenly interested that the problems of distribution are given proper weight. These people have insight into day-to-day problems that is valuable for formulating standards.

In selecting standards for distribution costs, the program should be explained fully to the supervisors of cost centers as a means of soliciting their support. These supervisors should have an honest desire to meet the standards. They should feel that the standards are accurate and in terms that the employees under their supervision will understand. Standard costs must also be explained to the employees if maximum effectiveness is to be obtained. The labor force in the cost center to be measured should participate in setting the standards so that they will believe the standards are accurate, reliable performance measurements. Since the success of a standard distribution cost system depends on the reliability and accuracy of the standards, extreme care must be taken to be sure that all factors have been considered in the establishment of standards.
The standard distribution cost system has to be developed as it is seldom completely satisfactory in the early years of operation. The supervisors and employees consulted will be more likely to accept the system because they will feel that they had a part in devising it. Each individual employee should also know his correct relationship to these standards and what performance is expected of him. Cost control is highest when standards are set in terms of personal responsibility as individuals are more inclined to do a better job when they have a clear idea of what constitutes an acceptable job. Management and operating personnel will be more likely to have confidence in the standards and consider the standards established to be correct and fair. As the accountant works closely with the distribution people, he will be able to determine if the system embodies the best company thinking.

The importance of an adequate accounting structure is often overlooked, but without effective accounting control the results of the plant's operations may be incorrectly stated. Unless there is an adequate accounting structure, there can be no reasonably acceptable plan of accounting control. The accounting plan should provide for the essential accounts and make available the necessary plans and procedures for handling the accounting details of the business. This structure must also include essential machinery for controlling costs through the bookkeeping mechanism. Changes in the accounting procedure may be necessary before attempting to establish distribution standards.

In order for standards to be effective in the control and
measurement of costs, it is necessary that they be established for a definite period of time. Standards should usually not be set for a lesser time period than six months. Variance accounts should also be kept over a long period of time. This information will enable management to study separately the long-range cost trends.

**Territorial Cost Standards**

Past, present, and forecasted future conditions in the business organization and in the trade territories must be considered in setting distribution standards for territories as the same standards may not be applicable in different geographical areas. The distance of the territory from the manufacturing plant must be considered in establishing standards; obviously markets farther from the manufacturing plant will have greater transportation expense per unit than those markets located in the same territory as the plant.

Standard costs for advertising will also vary according to different zones such advertising is to cover. One explanation for this is that different advertising media will be used in different territories because of the various types of consumers found in the different territories. A salesman working in a highly populated geographical area will also have a standard cost per call and sales of the unit that is correspondingly low compared with that of a salesman traveling in a sparsely settled area. The nature of the coverage also affects the
time and cost required to serve a territory. Salesmen may be required to stop weekly at each possible outlet while other territories will be covered less frequently. The nature of the competition in the different regions will also affect the standard costs for advertising and direct selling.

It is often said that marketing functions vary so much between time periods and between companies that it is impossible to establish and use standard costs. However, close examination will reveal that many distribution activities are uniform and are susceptible to techniques for setting standards on a physical basis. The same basic techniques and methods used to determine production standards may be used in determining many distribution standards. The determination of a standard sales volume is the starting point in the establishment of standards for distribution costs. A standard functional unit cost should be established for each distribution activity on the basis of a normal capacity.

**Standards for Repetitive Operations**

Distribution functions can be divided into repetitive and non-repetitive functions. A job audit or analysis may be prepared for all functions; all the operations performed in each function are listed as completely as possible on the job analysis. The object of a job analysis is to measure time apportionment among the tasks comprising a function. Once jobs are determined each operation should be studied to determine if the procedures are repetitive and routine in nature and can
be standardized.

For each distribution function in which there exists a fairly regular work routine, it is possible to study such a routine and record the time that each operation should require under normal existing conditions. Information can be obtained from the supervisor and the employees performing the operations. Previous time and motion study reports may also be examined in determining the standard time for each operation. However, over-all averages of past performance should be avoided as they may contain unnecessary delays and thus may not reflect good performance.

The number of observations required will vary between tasks. If any one of the observations deviates radically from the majority of the observations, this deviation should be investigated in order to determine if the observation should be included in determining the standard performance rate or discarded entirely. In choosing the number of observations to be included in computing the standard for a distribution element, the human element becomes a factor that must be recognized. However, the margin of error due to fatigue and other personal factors is usually small and insignificant.

An adjustment to the standard should be made for nonproductive time lost through rest, interruptions, fatigue, and other normal factors affecting production time in a normal working day. Before final acceptance, the rate should be tested by a standard committee. A time standard can then be applied to each operation element and should reflect a fair
performance expectancy for a worker of acceptable skill functioning at a reasonable pace. Once a standard time per operation is determined, the standard number of operations that could be performed in any given time period can then be computed by dividing the total working time in that period by the standard time per operation.

Standard time may then be converted into standard unit costs by applying the costs expected to prevail during the period for which standards are set. When this standard time is related to the wage rate for the employees performing the tasks, the standard cost would be known. This standard could be used for periodical comparison with the actual costs. Management would then know when unfavorable variances had occurred and could devote effort to finding the reason for the occurrence.3

An accountant familiar with standard costs should be in charge of the procedure for establishing standards for distribution materials. Year-to-date totals of material quantities should be studied and used as guides in setting the physical quantity of distribution materials needed. Work sampling can be used also in determining the standards for materials used in distribution. The engineering department may be used extensively for conducting tests under controlled conditions. A quantity of material can be put into the

distribution process and the results can be carefully analyzed. The accountant will also need assistance from distribution supervisors who are thoroughly familiar with the materials used in each distribution function. Together they should establish detailed information regarding the standard material components needed in each distribution function. This theoretical material quantity must include factors for scrap, shrinkage, and waste.

The best principle to keep in mind in establishing material price standards is to base the standard on the best information possible. An ideal standard should take into consideration both past prices and anticipated prices. All foreseeable factors such as strikes, wide fluctuations in prices, weather conditions, and new discoveries in material must be weighed in setting material price standards. The purchasing department should place an expected material price on the distribution materials and use this in determining the material price standard.

While the unit of variability for most order-filling costs tend to vary with sales volume, the individual cost units respond to different sales activities. This relationship between the amount of each variable cost component and an appropriate measure of activity must be established. For example, where products are sold on consignment, the costs of transporting the product to the consignee will be incurred in one month and the sales of the product may not occur until
Standard Costs for Warehousing and Handling

Warehousing and handling expenses are incurred from the time finished goods are received from the production process or another concern until they are ready for shipment or delivery. In wholesaling and retailing organizations the cost of the receiving function is usually included within this group. The warehousing and handling operations performed are largely of a repetitive nature and lends themselves to standardization and cost control in a manner similar to that of production operations. Industrial engineering methods and personnel can be utilized to set operation standards because warehousing consist largely of physical handling activities.

If each territory has its own warehouse and handling facilities and clerical employees for processing orders, these costs are direct charges to territories. However, when the company centralizes such facilities, the cost must be allocated to the territories. When centralized facilities are used, shipping clerks are required to account for their time between territories.

Shipping forms may indicate the type of packaging used in shipment by codes so that the standard allowed for each order can be determined. This allows the charging of each order for warehousing cost and only permits a comparison of actual costs of warehousing to be compared with the standard cost of the activity.

Where all products are approximately the same size and
weight, product units can be used for developing warehousing and handling standard cost. However, if the effort required to move and handle each product line differs due to the disparity of size and weight among products, a table of unit equivalents for the products can be computed. For instance, the smallest item can be assigned a value of 1 unit, the next larger product 1 1/4 unit, the next 1 1/2 unit, and so forth. This weighting factor compensates for the difference in packing and handling time resulting from the nature of the product. To determine the number of units put into stock, the actual number of product units can be multiplied by the proper unit equivalent.

Standard and actual unit costs can be developed using the most applicable of the following work units:

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>WORK UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiving</td>
<td>Purchase invoice line</td>
</tr>
<tr>
<td></td>
<td>Weight or number of shipping units</td>
</tr>
<tr>
<td></td>
<td>Shipment</td>
</tr>
<tr>
<td></td>
<td>Dollar of merchandise purchased</td>
</tr>
<tr>
<td>Pricing, Tagging, and Marking</td>
<td>Warehouse unit handled</td>
</tr>
<tr>
<td></td>
<td>Invoice line</td>
</tr>
<tr>
<td>Sorting</td>
<td>Physical unit stored</td>
</tr>
<tr>
<td></td>
<td>Dollar of average inventory</td>
</tr>
<tr>
<td></td>
<td>Order</td>
</tr>
</tbody>
</table>

4Many of the work units were developed from:


<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>WORK UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembling Stock for Shipment</td>
<td>Order</td>
</tr>
<tr>
<td></td>
<td>Order line</td>
</tr>
<tr>
<td></td>
<td>Item</td>
</tr>
<tr>
<td></td>
<td>Shipment</td>
</tr>
<tr>
<td></td>
<td>Sales transaction</td>
</tr>
<tr>
<td>Handling Returns</td>
<td>Return</td>
</tr>
<tr>
<td>Packing and Wrapping</td>
<td>Order</td>
</tr>
<tr>
<td></td>
<td>Order line</td>
</tr>
<tr>
<td></td>
<td>Physical unit shipped</td>
</tr>
<tr>
<td></td>
<td>Shipment</td>
</tr>
<tr>
<td>Taking Physical Inventory</td>
<td>Warehouse unit</td>
</tr>
<tr>
<td></td>
<td>Dollar of average inventory</td>
</tr>
<tr>
<td>Clerical Handling of Shipping Orders</td>
<td>Order</td>
</tr>
<tr>
<td></td>
<td>Item</td>
</tr>
<tr>
<td></td>
<td>Shipment</td>
</tr>
<tr>
<td></td>
<td>Sales transaction</td>
</tr>
<tr>
<td></td>
<td>Order line</td>
</tr>
<tr>
<td>Total Warehousing and Handling</td>
<td>Shipment</td>
</tr>
<tr>
<td></td>
<td>Order line</td>
</tr>
<tr>
<td></td>
<td>Item handled</td>
</tr>
<tr>
<td></td>
<td>Physical unit of goods handled</td>
</tr>
<tr>
<td></td>
<td>(product, weight, or weighted factor)</td>
</tr>
</tbody>
</table>

**Standard Costs for Transportation**

Transportation expenses as used in this study begin at the point where the products are packaged ready for shipping and delivery and consist of the shipping and delivery costs incurred in getting the products into customers' possession. Often traffic routings are carefully established by competent traffic men; these traffic routings are designed to produce economical physical distribution costs for the required distribution pattern.
Transportation costs are direct charges to territories if each geographical unit has its own delivery equipment. When the transportation facilities are centralized, the cost must be allocated to the territories. Transportation costs can be identified as to territories by invoice numbers.

Because the transportation function consists largely of physical operations, the same type of techniques as applied in production operations to develop standards can be used. The technique that is used in time studies of manufacturing operations can be employed except that times are taken on a broader operation than the elements or motions observed in shops. For instance, the standard may be developed on day-long studies with the time study observer watching all operations and the time required to perform the operations the entire day.

There is a marked similarity in basic transportation functions even in different industries. However, in some instances, the transportation function is combined with other distribution functions such as selling. "The jobs performed by the driver will fall into one of these classifications:

1. Job performed once for each customer served
2. Job performed once for each case or unit delivered
3. Job performed once for each day of operation
4. Jobs related to and controlled by the mileage driven."5

Time standards expressed in minutes per day, per customer,

per case, and per mile can be established for each detailed
transportation expense. Since the time required for transportation
functions will vary some between companies and markets, a review
should be made of the methods employed, the characteristics of
driving conditions, and other factors affecting time.

If the delivery trucks carry different types of products,
different weightings representing relative space requirements in
the hauling can be assigned to the products. Even though it
costs more to ship larger containers, the smaller containers
may have a certain minimum cost. The business concern should
consider giving small containers a fixed minimum charge even
when the weight factor is used in allocation. Rather than
establish standards for each shipment; this technique is more
useful when the number of shipments is rather small and each
shipment is large.

In establishing standards for transportation costs,
data should be compiled for like units of equipment. For example,
the standard operating cost of a gasoline-operated truck is
not the same as that of a diesel-operated truck. A set of
functional unit costs should be computed for each class of
automotive equipment. A separate set of functional unit standard
costs should also be computed for line-haul equipment and
pick-up and delivery equipment. City delivery trucks have a
great deal of stopping, and trucks on long distance hauls have
a minimum of stopping. Mileage operated by each vehicle class
should be recorded so that an actual expense per mile can be
calculated and compared against the corresponding standard.

Transportation costs may be controlled by establishing standards and determining actual costs on such bases as cost per the following work units:  

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>WORK UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning and Supervision</td>
<td>Sales dollar</td>
</tr>
<tr>
<td></td>
<td>Route</td>
</tr>
<tr>
<td></td>
<td>Customer served</td>
</tr>
<tr>
<td></td>
<td>Tcn-mile</td>
</tr>
<tr>
<td></td>
<td>Unit shipped</td>
</tr>
<tr>
<td>Transportation Clerical Work</td>
<td>Shipment</td>
</tr>
<tr>
<td>Entries in Shipping Records</td>
<td>Delivery</td>
</tr>
<tr>
<td>Preparing Shipping</td>
<td>Shipment</td>
</tr>
<tr>
<td>Documents and Recording</td>
<td>Unit of product shipped</td>
</tr>
<tr>
<td></td>
<td>Weighted unit of product shipped</td>
</tr>
<tr>
<td>Transportation Bills</td>
<td>Unit audited</td>
</tr>
<tr>
<td></td>
<td>Shipment</td>
</tr>
<tr>
<td>Handling Claims</td>
<td>Claim handled</td>
</tr>
<tr>
<td></td>
<td>Shipment</td>
</tr>
<tr>
<td></td>
<td>Entry</td>
</tr>
<tr>
<td>Loading and Unloading</td>
<td>Pounds loaded</td>
</tr>
<tr>
<td>Drivers’ and Helpers’ Wages</td>
<td>Truck hours of operation</td>
</tr>
<tr>
<td></td>
<td>Truck miles</td>
</tr>
<tr>
<td></td>
<td>Cubic foot space</td>
</tr>
<tr>
<td>Gasoline, Oil, Repair and</td>
<td>Mile</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Truck operating hours</td>
</tr>
</tbody>
</table>

6Some of these work units were developed from the following sources:

J. K. Lasser Tax Institute, op. cit., p. 9-172.
**FUNCTION**

<table>
<thead>
<tr>
<th>Total Transportation</th>
<th>Dollar of shipments as delivered</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unit of product shipped as delivered</td>
</tr>
<tr>
<td></td>
<td>Weighted unit of product</td>
</tr>
<tr>
<td></td>
<td>Unit of classes of product</td>
</tr>
</tbody>
</table>

Standard gasoline cost per mile should be carried to five decimal figures. The standard should be based on estimated miles per gallon and the average or anticipated cost of gasoline per gallon. The standards can be compared against the actual cost per mile obtained by dividing the gasoline expense by miles run. The standard for lubrication can be set based on past experience. Comparison of standard with actual will reveal any excessive oil consumption.

Some tire companies will agree to replace tires and tubes on a mileage basis and to furnish road service and regular inspections for an agreed fee. If an arrangement of this type is made, the standard can be determined from the agreement. If no special agreement is made, the standard cost per mile of tire and tube replacement can be estimated by determining the total life of a tire in mileage and dividing this into the expected cost for tires to arrive at a standard cost per mile.\(^7\)

If conditions change from one cost unit to another; for example, transportation differs between territories, a

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different standard should be provided for each territory. It may also be necessary to group equipment units according to their use and according to the type of country, whether rolling, mountainous, or flat, in which it operates. The technique of establishing different standards for each region is useful because a comparison of rates between regions may provide information to management that indicates where new warehousing and plant locations are required. ³

**Standard Costs for Credit and Collection**

The credit and collection department has the general function of extending credit and subsequently collecting the money. Expenses are also incurred for credit services and legal expenses pertaining to the collection of bad accounts. The nature of the functions and the work units applicable vary considerably with different types of business concerns.

Industrial engineering methods can be applied to establish standard times for these office operations. These standards are usually set in detail; broad standards are usually based largely on past experience and are expressed as the number of man-hours required to process a large number of orders rather than the number of minutes per line on an order.

The company may employ a centralized typing unit that provide typing and transcribing services to all departments.

Before setting the standards a survey must be made to determine the work performed and the kind of typewriters used, whether manual or electric. Because letters vary considerably in form and content, different categories of letters should be derived. If both electric and manual typewriters are used, a separate standard for each must be established for each type of letter.

The typing of each letter involves both uniform procedures, such as positioning the necessary paper and carbon in the machine, and variable factors depending on the length of the letter and the number of erasures made. A job audit listing all the activities and a corresponding standard time for each activity should be made. Observations can be made to determine the standard variable rate per line in the body of the letter. Each standard should also contain allowances for rest and delay factors. Work sampling can be used to set standards for transcribing materials consumed. 9

For the credit and collection functions the work units could be: 10

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>WORK UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Investigation and Approval</td>
<td>Sales order</td>
</tr>
<tr>
<td></td>
<td>Account sold</td>
</tr>
<tr>
<td></td>
<td>Credit sales transaction</td>
</tr>
</tbody>
</table>

9 Longman and Schiff, op. cit., p. 392.

10 Much of this information came from:
Heckert and Miner, op. cit., pp. 258-259.
<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>WORK UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Correspondence, Records, and Files</td>
<td>Letter</td>
</tr>
<tr>
<td></td>
<td>Account sold</td>
</tr>
<tr>
<td></td>
<td>Sales order</td>
</tr>
<tr>
<td></td>
<td>Item</td>
</tr>
<tr>
<td>Preparing Invoices - Heading</td>
<td>Invoice</td>
</tr>
<tr>
<td>Preparing Invoices - Line Item</td>
<td>Order line</td>
</tr>
<tr>
<td></td>
<td>Invoice line</td>
</tr>
<tr>
<td>Posting Charges to Accounts Receivable</td>
<td>Number of postings per hour Invoice</td>
</tr>
<tr>
<td></td>
<td>Shipment</td>
</tr>
<tr>
<td>Posting Credits to Accounts Receivable</td>
<td>Number of postings per hour Remittances</td>
</tr>
<tr>
<td></td>
<td>Account sold</td>
</tr>
<tr>
<td>Preparing Customers' Statements</td>
<td>Statement</td>
</tr>
<tr>
<td></td>
<td>Account sold</td>
</tr>
<tr>
<td>Making Street Collections</td>
<td>Dollar collected</td>
</tr>
<tr>
<td></td>
<td>Customer</td>
</tr>
<tr>
<td>Handling Window Collections</td>
<td>Collection</td>
</tr>
<tr>
<td>Total Credit and Collection</td>
<td>Sales order</td>
</tr>
<tr>
<td></td>
<td>Credit sales transaction</td>
</tr>
<tr>
<td></td>
<td>Account sold</td>
</tr>
</tbody>
</table>

Analysis of the information appearing on the invoices should be made before establishing standards for credit and collection. If the number of lines on individual invoices differs, standard costs based on the number of invoices prepared would be a poor measure of performance. Standard costs based on the number of invoice lines prepared would be a better measure of production.
Standard Costs for General Distribution Activities

There are certain general costs relating to distribution activities such as accounting, office, and clerical which vary in importance in different concerns. Often these distribution costs are not of sufficient importance to be treated as a separate function. Distribution finance expenses are also included as a cost of general distribution activities. The financial expenses as considered here include those costs incurred in securing capital and administering the financial program of the business. In trading concerns the entire general distribution expense is a distribution cost; in manufacturing concerns the cost must be separated between production and distribution activities.

Past experience and knowledge of the conditions within each sales territory should make possible the preparation of standards for many general distribution activities. Detailed studies of invoices and charges can often supply an adequate work unit for such joint costs as telephones, stationery, and supplies. Generally if a standard is established for each type of office supply used by each territory, the results are most effective and economical use of the supplies.\(^1\)

Because many different kinds of jobs may be performed in the office, some of them at infrequent intervals, a common basis of measurement is essential. A simple procedure is to

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reduce the jobs to equivalent units. One job can be used as a standard in determining the relative weight of each job. Then by applying these relative weights to the actual units produced, the equivalent units of work performed will be developed.\(^{12}\)

Units of measurement which can be applied to general distribution activities are:\(^{13}\)

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>WORK UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Accounting including Auditing Fee, Salaries of General Bookkeeper, and Accounting Supplies</td>
<td>General ledger posting Customers' orders Invoice lines</td>
</tr>
<tr>
<td>Sales Analyses and Statistics</td>
<td>Order Invoice line</td>
</tr>
<tr>
<td>Financial Expense</td>
<td>Ratio of total distribution cost to sales Ratio of average distribution investment to sales Ratio of inventory turnover</td>
</tr>
<tr>
<td>Personnel Expense</td>
<td>Number of employees Number of persons employed, discharged, and reclassified</td>
</tr>
<tr>
<td>Filing and Maintaining Order and Letter Files</td>
<td>Order Letter Units filed</td>
</tr>
</tbody>
</table>


\(^{13}\)Many of the operations and work units came from: Heckert and Miner, *op. cit.*, p. 268.
<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>WORK UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail Handling</td>
<td>Number of pieces in and out</td>
</tr>
<tr>
<td>Vouchering</td>
<td>Number of voucher</td>
</tr>
<tr>
<td>Sales Auditing</td>
<td>Number of sales slips</td>
</tr>
<tr>
<td>Punching Cards</td>
<td>Number of cards</td>
</tr>
<tr>
<td>Tabulating</td>
<td>Number of cards run</td>
</tr>
<tr>
<td>Cashiering</td>
<td>Number of transactions</td>
</tr>
<tr>
<td>Fixed Administration and Market Research</td>
<td>Time spent</td>
</tr>
</tbody>
</table>

Often home office employees are involved in more than one function; for example a secretary may serve both the sales and advertising managers. Rather than classify such costs as general distribution, these costs may be separated as to the functions that were involved. Each home office employee would be asked to furnish a breakdown as to function and territory on how his time was spent. The time sheets of these employees will indicate how many hours are devoted to each function. Executives salaries may be treated in a similar manner depending upon the estimated time allocation.

**Standards for Nonrepetitive Operations**

For some distribution functions, standards based on time and material studies are difficult to establish because there is such great variation in the details of the work. For example, in some nonrepetitive distribution functions such as advertising, the amount of expenditure affects the total sales volume.
Businessmen usually have a definite plan underlying the performance of each nonrepetitive function; these plans can be modified to reflect general expansion or contraction of business activities. Standard cost can be estimated on such bases.

In some cases standard functional unit costs for a distribution function can also be set by analyzing actual unit costs for a past period and eliminating any obvious excess costs from this actual unit cost. Past experience may also be used to select the best procedure of performing the function.

Effects on costs because of expected changes in external conditions and planned sales program should be considered.

Cost of advertising and sales promotion per dollar of sales can be valuable as a basis on which to establish standards where these costs are designed to stimulate immediate sales of specific goods. Comparisons of standard and actual cost of advertising per dollar of sales may be supplemented by share-of-the-market statistics to measure the effect of general changes in market conditions. If the sales volume of all companies in the market is lower than the expected sales volume on which the standards were established, this condition may cause an unfavorable variance. Management can evaluate the advertising performance under the changed conditions by observing share-of-the-market statistics to determine if the company has maintained or increased its share of the market.14

Thus, standards for order-getting activities cannot be based solely upon a sales forecast as some consideration must be given to market potential and the amount to be spent for getting business. Certain guides can be used by management in determining what standards to establish for order-getting costs. Management can vary the amount of order-getting costs in limited market areas to observe the returns obtained from increments in these costs. The results from these tests can be used to provide measurements. Competitors' actions are also especially important, especially those actions regarding the amount of advertising and activity of competitors' salesmen. Probably the ratios of advertising and selling cost to sales representing past experience is used most to indicate what can be expected from the same sales program in the future.  

Cost Standards for Direct Selling

Direct selling includes all expenses of securing orders by direct contact. This function does not include advertising and sales promotion but includes only those distribution costs which pertain directly to securing orders. Since each sales territory is often a separate unit in the organization, direct selling expenses can usually be charged directly to territories. Generally there are two broad types of direct selling, repetitive and nonrepetitive. Repetitive selling is well adapted to the establishment of cost standards. On the other hand, nonrepetitive

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15Ibid., p. 21.
selling is difficult to standardize.

On the surface the setting of a standard time for each sales call may appear impossible as individual differences exist between salesmen and sales situations. However, much progress has been made in standardizing sales techniques in product presentation and in the showing of photographs and samples. The prevailing practice in industry of using well-developed sales training programs is evidence of this uniformity. Careful study and experimentation is a necessary prerequisite to setting standard time to be taken for each sales call.16

Time studies of salesmen's activities can be made to determine how salesmen spend their working time. Time study observers can accompany salesmen, but often the most practical approach is to obtain the necessary information on observations by supervisors and from salesmen's reports. Results from these studies can be reduced to standard job description and standards for number of accounts per salesmen and calls per day. A standard list of activities to be performed may be compiled for salesmen to follow in the field. Under this approach salesmen are required to turn in daily reports showing time spent with each customer and product sold.

In determining the standard for selling salaries, management should conduct a survey of the entire sales organization to

examine the work performed by each salesman in the different sales territories. As a result of this survey the standard salary rate for each class of employee in each territory can be determined.

Business enterprises can set a standard per diem rate for meals and lodging; other traveling expenses can be set on a standard rate per mile. In preparing the standards for travel, each territory needs to be studied for the purpose of estimating how many miles each salesman and supervisor will travel to accomplish his sales quota. The survey may be made in detail to show the number of calls to be made each day.

Since such conditions as the channels of distribution, terms of sales, and the product manufactured and sold will vary between companies, the work units chosen will also vary. The type of assistance which the salesman is to render each customer and the number of products the salesman is expected to sell to the customers must also be considered in establishing a standard for the number of calls a salesman is to make. Consideration must also be given to the type of sales call to be made because if some calls can be performed by telephone rather than on a personal contact basis, the standard number of calls can usually be increased.

The cost accountant should use the principles that are most logical under the circumstances. For example, a standard cost for salesman's salaries established on the basis of customer-call is logical if the salesman's calls are relatively routine,
and on the average the salesman spends the same amount of time with each customer regardless of the price-bracket. This would not be satisfactory if the salesman spends a different amount of time in his calls on customers in the different price-brackets. In this case, standard costs should be established on the time spend with each customer.

Since selling expenses are influenced by many factors, different standards may be required for each territory. The type of geographical area covered and the means of covering a given territory influence expenditures required to keep a salesman in the field. The size of the towns and cities and the distance between them all directly modify the number of calls a salesman can make and the cost of making these customer calls. Company-wide standard expense rates per call or day often cannot be established because costs vary so greatly in different geographical areas.

A percentage of gross margin or of gross sales have been suggested as bases for establishing standards for salesmen's salaries and expenses. However, the position taken in this study is that a more direct and reliable relationship can be established by studying the behavior of direct selling costs as to changes in the time spent on calls, distance traveled, number of customers, and number of calls. There are very few conditions where a percentage of gross margin or of gross sales can be used as logical bases for establishing standards for direct selling expense. All products must be equally easy to sell, all customers must be alike in their responsiveness, and mark-ups must be
uniform to correctly use these work units. One exception where standards can be established as a percentage of net sales is where commissions and bonuses are given to salesmen in direct relationship to sales. Obviously the reason for incurring direct selling expenditures is to achieve sales goals; however, this achievement is subject to many factors over which the salesmen have little control. Therefore, it is felt that sales goals are not completely suitable units of measure.\(^{17}\)

Direct selling expenses may be controlled individually or in total by reducing them to unit costs on such bases as cost per work unit listed as follows: \(^{18}\)

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>WORK UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salesmen Salaries</td>
<td>Sales call</td>
</tr>
<tr>
<td></td>
<td>Salesmen's hour</td>
</tr>
<tr>
<td>Commissions and Bonuses</td>
<td>Net sales dollar</td>
</tr>
<tr>
<td></td>
<td>Product units sold</td>
</tr>
<tr>
<td></td>
<td>Sales call</td>
</tr>
<tr>
<td></td>
<td>Sales order</td>
</tr>
<tr>
<td></td>
<td>Sales transaction</td>
</tr>
<tr>
<td>Subsistence</td>
<td>Days subsisted</td>
</tr>
<tr>
<td>Entertainment</td>
<td>Customer</td>
</tr>
<tr>
<td>General Sales Office Expense and Supervision Salaries</td>
<td>Salesmen</td>
</tr>
<tr>
<td></td>
<td>Sales transaction</td>
</tr>
<tr>
<td></td>
<td>Sales order</td>
</tr>
<tr>
<td></td>
<td>Salesmen's hour</td>
</tr>
<tr>
<td></td>
<td>Customer account</td>
</tr>
</tbody>
</table>


\(^{18}\) Many of the bases listed are from:
Heckert and Miner, *op. cit.*, pp. 219-221.
### Function Work Units

<table>
<thead>
<tr>
<th>Function</th>
<th>Work Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salesmen's Traveling Expense</td>
<td>Miles traveled</td>
</tr>
<tr>
<td></td>
<td>Days traveled</td>
</tr>
<tr>
<td></td>
<td>Call</td>
</tr>
<tr>
<td></td>
<td>Customer</td>
</tr>
<tr>
<td></td>
<td>Sales order</td>
</tr>
<tr>
<td>Salesmen Equipment</td>
<td>Sales call</td>
</tr>
<tr>
<td>Telephone Solicitation</td>
<td>Telephone call</td>
</tr>
<tr>
<td></td>
<td>Order received</td>
</tr>
<tr>
<td>Salesmen's Training and Education</td>
<td>Number of salesman</td>
</tr>
<tr>
<td></td>
<td>Number of salesman's calls</td>
</tr>
<tr>
<td>Routing and Scheduling of Salesman</td>
<td>Number of salesmen</td>
</tr>
<tr>
<td></td>
<td>Number of salesman's calls</td>
</tr>
<tr>
<td>Making Quotations</td>
<td>Quotations made</td>
</tr>
<tr>
<td>Payroll Insurance and Taxes and</td>
<td>Payroll dollars</td>
</tr>
<tr>
<td>Supplemental Labor Costs</td>
<td></td>
</tr>
<tr>
<td>Handling Sales Adjustments and Returns</td>
<td>Adjustments and returns handled</td>
</tr>
<tr>
<td>Total Direct Selling</td>
<td>Cost per unit of product sold</td>
</tr>
<tr>
<td></td>
<td>Cost per sales transaction</td>
</tr>
<tr>
<td></td>
<td>Cost per sales order</td>
</tr>
<tr>
<td></td>
<td>Cost per customer served</td>
</tr>
</tbody>
</table>

The sales representative who works the maximum number of work days and makes the largest number of calls per working day is usually the most valuable to the concern. Since these factors should be considered, standards for selling effort may also be set using such bases as the minimum number of calls per day, ratio of orders obtained to calls made, and dollar value of average order. If the salesmen reported fewer calls than were made, the order-call ratio would be boosted while
the number of calls per day would decrease. If his calls per
day were high but the order-call ratio dropped, this would
likely indicate that the salesmen were making many calls, but
not taking sufficient time to do a good selling job. The dollar
value of average orders may reveal a salesman is calling
frequently and successfully but is receiving only small
orders.

Cost Standards for Advertising and Sales Promotion

The major objectives of the advertising and sales promotion
function are to create demand for the company's product and to
establish and maintain consumer good will. Advertising and
sales promotion activities range from the complex situation
where all advertising is handled by the company with the company
producing its own advertising and sales promotion materials to
the simple situation where all advertising is handled by an
outside firm. Direct media charges for companies that obtain
advertising material from outside sources would include agency
commission and advertising material charges. Where the company
prepares its own copy the direct media costs would consist
primarily of charges for space in the different types of media
and costs of copy preparation. Individual standards could be
established for advertising copy prepared based on direct copy
labor hours or copy units prepared.

The advertising and sales promotion function is probably
one of the most difficult of all distribution efforts to measure
in terms of cost standards. Accurate and immediate cost standards
can be applied to some advertising and sales promotion, but for
such expenditures as institutional advertising the cost measurement must be very general in nature and applied to periods of considerable length of time. Some of the standards used for advertising and sales promotion are quantity measurements only and do not reflect the quality of the output. Past experience is used extensively as a guide in budgeting advertising and sales promotion because companies often feel a need for continuity over a period of years in these projects.

If all territories are served by an overall advertising manager and if each territory receives advertising assistance from the home office, these indirect expenses will have to be allocated to each territory. An analysis of the time and effort these executives devote to each territory can be made to determine the standard cost for each territory.

Since many forms of advertising and sales promotion media may reach more than one territory, the advertising costs may be a joint cost and must be allocated to the geographical areas. A standard cost could be established on the basis of the number of families who listen on an average day or night to the radio or television station involved. This information can usually be obtained from the broadcast station itself. Advertising cost can then be allocated to the territories on the basis of the number of listening families in each geographical area. Magazine and newspaper advertising plans can be reduced to the amount of space used and the publication rate for each periodical. Publishers of periodicals can also supply data concerning the number of readers in each territory.
Costs of advertising in periodicals then can be allocated on this basis. 19

The standards established for dealers help which include window and store arrangement service, displays, and demonstrations should be determined after a study has set the amount of service each territory is to receive and its cost has been estimated. Standard cost can then be determined for each unit or customer. Where catalogs are used as a form of advertising, a standard cost can be determined for each catalog unit. The standard cost of catalogs for each territory can then be established by multiplying the number of catalogs distributed in each territory by the standard cost per catalog.

A complete study of the advertising program for the budget period should result in setting a standard advertising and sales promotion appropriation for each advertising media and for each sales territory. Regardless of advertising methods used, generally the cost will bear varying ratios to the volume of sales. However, over a few years the average cost of advertising and sales promotion will show a fairly constant percentage ratio to sales. It is for this reason many companies develop standards for advertising and sales promotion as a percentage of net or gross sales.

However, a direct relationship between sales orders and costs often cannot be established. These activities are a

cause rather than a result of sales; the volume of orders obtained may depend on the amount of money spent for these costs. An increase in advertising and sales promotion may increase sales volume, but sales may not increase at the same rate as the costs. Another reason for not using sales as the work unit on which to establish advertising and sales promotion standards is that there is usually an element of fixed costs in advertising and sales promotion costs. Many companies establish a minimum advertising amount as the cost of maintaining a minimum sales capacity.20

Advertising and sales promotional efforts and some bases for developing standard costs per unit are as follows:21

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>WORK UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Media Costs</td>
<td>Sales transaction</td>
</tr>
<tr>
<td>Newspapers</td>
<td>Newspaper inches</td>
</tr>
<tr>
<td></td>
<td>Gross or net sales (where this is chief medium used)</td>
</tr>
<tr>
<td>Outdoor Billboards and Signs</td>
<td>Billboard and other outdoor sign units</td>
</tr>
<tr>
<td>Radio and Television</td>
<td>Minute of radio or television time</td>
</tr>
<tr>
<td></td>
<td>Number of set owners</td>
</tr>
<tr>
<td>Letters, Circulars, Calendars, and Other Direct Mail</td>
<td>Gross or net direct mail sales</td>
</tr>
<tr>
<td></td>
<td>Item mailed or distributed</td>
</tr>
<tr>
<td></td>
<td>Inquiry received</td>
</tr>
</tbody>
</table>


21 Many of the work units listed are from: J. K. Lasser Tax Institute, op. cit., p. 9-171.
Consideration must be given to population characteristics and environmental conditions before an attempt is made to place quantitative limits on the use of the less tangible costs of advertising and sales promotion. The average income of the
population as well as the average age and education level may have a very material effect upon the results. In determining advertising to be expended, the marketing manager must consider the density of the population, whether urban or rural, types of industry found in the market territory, and climatic factors. These factors should affect the specific type and kind of media used for advertising in each territory. For example, if the territory is a summer resort, billboard advertising may be used extensively. A review of these considerations will help management direct efforts into those channels which hold the promise of greatest return for the amount of money expended.

Summary

Because the definition and measurement of marketing costs and functions have not advanced nearly so far as the definition and measurement of production costs, no one can make statements concerning marketing efficiency with the same degree of assurance. There are not widely accepted standards of performance for distribution costs.

While it must be admitted that it is difficult to establish standards for some distribution functions and that a greater tolerance must sometimes be allowed in the consideration of variances, most of the distribution activity is fully as measurable as production. Many of the same techniques used to establish production standards can be employed in selecting distribution cost standards. Other methods for selecting
distribution cost standards can be used for those distribution activities that are nonrepetitive and are difficult to standardize. Those activities effected by human element are usually capable of reasonably accurate measurement employing less scientific techniques. Many people are under the impression that standard costs are always based on sound engineering studies and rigorous specifications. Although this approach is desirable, less scientific standards can provide a forceful way of presenting information for the purpose of stimulating corrective action.

Although historical methods of analysis applied to distribution costs are not a safe test of efficiency, it is possible that problems of distribution costs can be solved without recourse to standard costs. However, the use of standard costs allows management to examine distribution operations to a greater degree. Standard costs lead operating management to a better understanding of the cost and financial implications of its activities. The effects of management decisions that result from employing distribution cost standards aid in improving the profit position of the company.
CHAPTER V

VARIANCE ANALYSES AND PREPARATION OF STATEMENTS

Budget Preparation

After the individual distribution costs are classified upon the bases of variation factors, a flexible budget should be prepared. A flexible budget shows the standards for each individual expense at all reasonable levels of distribution operations. It seems most reasonable to establish levels of distribution activity comparable to levels of production output.

The important thing to remember in developing a distribution budget is to make the results fit the needs of the particular organization. It should be complicated or simple depending upon the complications or the simplicity of the problems it is designed to control. If the company operates an elaborate distribution organization, the budget should be prepared along detailed lines.

When standard costs have been established, it is necessary only to translate the sales budget into the distribution requirements needed to obtain the stated goals and apply the standards. This method is particularly suitable to costs of a
variable nature. Semivariable and fixed costs can be estimated with little difficulty once the sales budgets are known. For order-filling functions, planning is based on the services required by the projected sales volume. For order-getting functions, planning involves determining the costs necessary to achieve the projected sales volume. It may be necessary to apply this method to each detailed function rather than the function as a whole.

Cost control is facilitated through this budgeting approach involving functional categories. Cost responsibility assignments are permitted because the functional categories generally parallel the organization structure. A knowledge of functional costs by expense elements provide an evaluation of current methods of operation with alternative methods of performance. A comparison of actual costs with budgeted standard cost is more valuable if combined with a study of budgeted and actual units of service.

When the budget is an effective cost control tool, responsibility for planning and control coincides from top management levels down to middle and lower management. Since a budget should be established on the postulate that authority and responsibility go together, those persons responsible for meeting standards should have an opportunity to participate in the construction of standards and budgets. Any revisions to be made to the original budget and standard bases should be referred to the persons who originally compiled the data for his consideration and approval.
Using Standard Distribution Costs in the Accounts

After the preliminary work has been done, the accounts needed for the system may be set up in the general ledger. Distribution standards may be incorporated in the ledger accounts by debiting the accounts for each function with the actual cost and crediting them with standard costs for the number of service units performed. Some accountants feel that executives will take standard costs and variances more seriously and be more responsive to cost reduction if the standard costs and thus the variances are entered in the ledger accounts. The incorporation of distribution cost standards in the accounting system does provide an orderly and somewhat compulsory plan of cost analysis.

However, sometimes it is not practical to incorporate distribution standards with the accounting system just as in certain aspects of production accounting. It is often not advisable because of the constantly fluctuating nature of distribution costs. The incorporation of distribution cost standards is not as important as for production cost standards because distribution costs are not usually charged to inventory.1

The approach taken in this study is that the choice of the accounting method is of no great consequence as long as the actual distribution costs are subjected to proper measurements and control. It is fundamental to cost control that distribution

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cost standards are established. However, their use in connection with a standard cost accounting system is not essential. In some concerns it may be more advisable to record actual costs in the accounts and compare these with budgets and statistical standards. In other concerns the actual reflection of distribution standards in the accounts may be preferable.

**Variance Analysis**

**Distribution Variances**

The analysis of cost variances is the first step toward the goal of identifying the factors that caused the difference between the standard and actual costs so that the inefficiencies can be eliminated. Variances can be either favorable or unfavorable; favorable variances occur when the actual costs or hours are less than the standard costs or hours. Unfavorable variances occur when actual costs or hours are greater than standard costs or hours.

Each enterprise will have to decide what specific variance analyses it may want to use. Two variances, controllable and volume, can be computed for distribution activities. The volume variance represents the difference between the budget allowance and the standard quantity at standard unit cost. The volume variance is sometimes called the seasonal variance. The controllable variance represents the difference between actual expenses incurred and the expenses allowed for the actual volume of operations performed.²

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The following illustration is another type of variance analysis that can be employed for distribution costs.  

**Standard Rates**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Calls</td>
<td>200</td>
</tr>
<tr>
<td>Standard Units</td>
<td>40,000</td>
</tr>
<tr>
<td>Standard Cost per unit</td>
<td>$0.03</td>
</tr>
<tr>
<td>Standard Cost per Call</td>
<td>$6.00</td>
</tr>
</tbody>
</table>

**Actual Results**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual Calls</td>
<td>180</td>
</tr>
<tr>
<td>Actual Units</td>
<td>41,000</td>
</tr>
<tr>
<td>Actual Cost</td>
<td>$1,160.00</td>
</tr>
</tbody>
</table>

**Analysis of Variance:**

- **Effort** $(180 - 200) \times 20$ calls at $6.00$ standard rate $= 120$
- **Results** $(41,000 - 40,000) \times 1000$ units at standard rate of $0.03$ $= 30$
- **Cost Control** $(180$ actual calls $\times 6.00) = 1080$ standard cost $- 1160$ actual cost $= 80$

**Total Variance** $= 70$

The salesmen are judged as to their effort, the results obtained, and the control of their expenses. In the illustration above there is a favorable net variance of $70$. The favorable effort variance of $120$ resulted from the salesman making $20$ less calls than scheduled. It is favorable only in the sense that the smaller number of sales calls resulted in a saving. This saving must be measured against the failure to make the standard number of calls thus limiting coverage of this territory.

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Management has an excellent opportunity to determine the source and cause of the difference between actual and standard costs. However, the interpretation of variances may be difficult. Management must establish criteria by which a variance can be determined if it is significant enough to be investigated. These criteria should be determined because usually management cannot investigate all variances. In establishing the criteria such factors as the absolute size of the variance, the characteristic of the cost, and the size of the variance relative to the total cost incurred in that classification should be established.

Disposition of Variances

There are two basic procedures for the disposition of cost variances. One procedure is to consider these variances as a cost of inefficiency rather than a cost of product. These variances are charged or credited against the revenues of the period. The other procedure is to consider variances as a cost of product and allocate them to work in process, finished goods, and cost of goods sold. The proper procedure is to judge each variance individually and to make a decision based on the nature of the cause of the variance.

If variances represent inefficiencies or savings from the standard, it is generally agreed they should be treated as a period cost. When the variances arise because of some unforeseen condition, the variance can be allocated to work in process, finished goods, and cost of goods sold accounts.
Disposal of distribution variances represent no difficult problem because generally only one of the above procedures can be used. Distribution costs can ordinarily be associated with only one group of goods; that is, the goods sold during the period covered by the distribution expenditure. Thus, variances arising in the accounts for the distribution functions are generally treated as period costs at the end of a year.

However, seasonal or volume variances may be left in the account at the end of any month. Since the standard is normally calculated for the year and if the actual volume of business fluctuates seasonably, little standard costs will be applied to the accounts for the various kinds of sales effort in some months and much will be applied in others. Because actual expenses incurred will be more steady, a seasonal variance will result even if the standard rate and actual rate for the year is the same.

Distribution Cost Reports

In order for the analysis of distribution costs to result in the successful direction of distribution effort and control of costs, the resulting information must be presented to executives in a manner that they can understand and be able to act upon the data. Executives must refine the data and search for significant facts that will provide a bases for

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decisions and action if the data is passed on to management without proper interpretation. Often these executives are pressed with administrative duties and will make only limited use of the reported data. Thus, much of the cost of gathering the data is wasted and management does not have adequate information necessary to direct operations successfully.  

Essential Characteristics of Satisfactory Reports  

The essential features of distribution cost statements are the same which generally apply to all managerial reports. The report should be as simple and clear as possible so that the reader will get the essential facts with the least possible effort. Only essential information should be reported; all unnecessary data should be eliminated. Regular distribution cost reports should be presented on a definite schedule. It is very important that these reports be prepared and presented promptly because distribution cost control has a maximum chance of being successful when prompt and regular reports of expenditures are received by those responsible for the distribution expenditures. 

The content and form of distribution reports should be adapted to the executives who will use them. Some executives prefer tabular reports rather than narrative reports. Reports generally are broader for high executives than for first-line foremen. The advertising manager, credit manager, and other

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functional executives should receive general summaries of the operations and performance of their respective cost centers. Long-term relationships and trends should also be presented. Marketing cost reports usually show actual costs of comparable prior periods even when standards and budgeted costs are in use. Statements may be prepared for each function showing both the actual and budgeted cost and the number of work units. This statement form allows for the computation of actual and standard cost per work unit. The divisional executives in each of the functions should receive more frequent and detailed reports than the functional executives.

The proper treatment of distribution cost variances on the income statement depends upon the way production cost variances are treated on the statement of cost of goods manufactured. Both production and distribution cost variances should be treated alike. Probably the most acceptable method of reporting the variances on the operating statement is to present the standard production cost modified by the respective variances on the statement of cost of goods manufactured. If this procedure is followed, the cost of goods sold and gross profit will appear on the income statement at their actual value. The standard distribution costs, with their variances, would also appear on the statement so that the net profit derived is the actual net profit. Some companies show the cost of goods sold on the income statement at standard and exclude the variance between the standard cost of the products and the actual factory cost of production. This procedure is followed because the
marketing departments have no control over this variance.

Determination of the types of statements to be prepared should be made on the basis of types most needed by marketing management. The content of the distribution report must conform to the needs of each business concern. At the beginning of the program it may be found advisable to limit statement preparation to the most pertinent statements. This provides an opportunity to concentrate on the mechanics of the program and to ensure maximum accuracy and acceptance of the data.

**Territorial Operating Statements**

The content and form of the territorial operating statements should reflect the principal purposes for which the statements are used. The amount of information considered necessary for these purposes usually varies widely between companies. Often performance in a sales territory is appraised better if the costs associated with a given responsibility are segregated between noncontrollable and controllable costs. This focuses the territorial manager's attention on items which he can control from those costs controllable by management at higher levels. This is an important psychological point for the person to whom the report is addressed. 6

Territorial operating statements can also be prepared showing all direct costs of the individual sales division

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without distinguishing between costs controllable and noncontrollable by the territorial manager. The gross profit less the direct marketing costs reflect the performance of the segment studied. The allocated costs are included in the statement to show that those indirect costs are essential to the operation of the business segment under review. The companies following this reporting method may want their territorial managers to be aware of the home office expense that must be covered before a profit is made.

Territorial operating statements usually show both actual costs and budgeted costs for the current period in addition to actual figures for the previous period. A consolidated statement can be prepared for all territories for comparative purposes.

This consolidated statement will likely prove more useful if territories are of like population and have similar marketing characteristics. Competition, normal flow of trade, and customer preference are factors to consider in appraising territorial performance. These factors must be resolved by the sales manager's personal knowledge of the territory. After management has received statements measuring territorial profitability and they are satisfied with the results, other statements may be prepared to measure the results of product lines or customers.

**Summary**

Comparison of actual results with standard costs has
been stressed as an important aspect of control. The analysis of distribution cost variances goes to the very core of a standard distribution cost system. The important aspect of a significant distribution cost variance is that it should result in careful investigation to determine the underlying causes. These causes provide the basis for appropriate corrective action.

When presenting the results of variance analyses, the analyst should constantly keep in mind that the results must be understandable by those expected to use them. It is unrealistic for the analyst to expect top executives to devote undue time to highly technical distribution cost analyses. Thus, distribution cost statements should be simple and understandable. These statements should also be designed with particular consideration of their primary use.
CHAPTER VI

MANAGERIAL CONTROLS PROVIDED BY STANDARD DISTRIBUTION COSTS

Past performance has distinct limitations as a goal for current cost control. The comparison of current performance with past performance implicitly assumes that past costs are proper and no measure of improvement is possible. Attention may not be brought to bear on inefficiencies in order that they may be eliminated. Conditions under which past costs were incurred may also have changed. These past costs may not reflect desirable goals for current operations. A criteria of satisfactory performance is needed.

Standard Functional Cost Controls

Actual costs of specific expenses or operations are meaningless by themselves for purposes of judging or controlling performance. These costs become meaningful only when compared with other figures which are suitable bases of comparison. More control information about a business is obtained through comparisons of actual costs with predetermined standards than cost analysis performed on a purely historical basis. For cost control to be effective, controls should be continuously exercised throughout all operations.
Many people believe standard costs are complicated and difficult to understand. However, standards are based on simple and direct approaches to control. Management obtains much useful information from standard costs because a comparison of actual costs with standard costs enables management to see which cost elements are not in line and to be aware of the distribution functions in which variations exist. Matters needing control are quickly pointed out using cost information under a standard cost system.

By studying functional costs for the purposes of establishing standard unit costs and analyzing the variance between standard and actual cost, many opportunities for cost reduction and control may be indicated. Often the savings resulting from the information obtained through an analysis of variances pays for the expenses involved in selecting standard distribution costs. Comparison of actual cost with the standard cost yardstick also provides management with a sound basis upon which to plan future finances. Standards will frequently indicate solutions that will enable management to plan the way out of an unprofitable situation.

Another advantage attributable to standard cost is that the measurement is very objective. Workers are more willing to be judged against scientifically engineered standards than subjective measures established only by their supervisors. Employees also become cost conscious when they know the costs are under continuous measurements. The performance of each function is also free from influence by the performance of
This accounting method also promotes promptness in the preparation of cost reports for management. The cost analyst will find that these cost control reports are an effective management tool because they are based on the principle of exception. Those facts which require management action are highlighted. Standard costs can also recognize the distinction between controllable and noncontrollable costs and segregate these costs in the records and accounts. Control through the establishment of standards and measurement of variances will help indicate where management action is required to correct out-of-line performance because unfavorable performance is immediately detected and can be traced to the responsible individuals or factors.

Standard costs permit a better advance knowledge of costs, and they encourage a careful scrutiny of the activities which often permit improvements even before an entry is made in the ledger. The process of studying a function in detail in establishing standards may contribute in many ways to work efficiency. Both the quality and the quantity of units produced by the distribution cost center may be improved.

In establishing standards for distribution activities an analysis of the elements in the activity are usually made. As wastes occur in nearly all movement costs, this analysis can lead to improved procedures for the prevention of time wastes in performing marketing functions. As a result of the standard labor rate, management may find it beneficial to
remodel the section layout to eliminate waste motions and to achieve more effective utilization of floor space. Tools and materials may be arranged to be more accessible to workers so that the time lost in picking up the material may be saved. The job audits used in establishing standards can also be employed as a basis for teaching new employees the normal and acceptable method of performing the work.¹

When functional expense statements are available for successive years they highlight departmental cost trends. An examination may reveal that one department's cost have increased at a much faster rate than the over-all distribution expense. An analysis should be made to determine what expense elements have been responsible for the rapid increase. This analysis can compare actual unit costs and standard unit costs by functions within each department to indicate any trend of rising unit costs as compared to figures of prior years. Trends, either favorable or unfavorable, can be observed and plans formulated for correction of unfavorable tendencies as well as for continuance of the favorable conditions. Functions with excessively large unit costs as compared to budgeted standards may be uncovered.

It is most important in the distribution field to analyze the functions performed in relation to their cost.

Merely to force a reduction in an apparently high cost of performing a function is extremely dangerous. The functional classification facilitates cost control because each function can be studied separately and in relationship to other functions. Once the cost of specific distribution functions are defined, responsibility accounting is adopted by relating cost groups to people.

**By-products of Standard Costs for Repetitive Functions**

Often important by-products will be found in a distribution cost analysis that the accountant was not looking for in the original study. Because standard costs are objective, an incentive wage payment system can be established for both repetitive and nonrepetitive distribution functions by using the results of the study producing the standard. Under an incentive system for paying wages, workers who produce a percentage above the standard could receive an additional percentage of their base pay. For example, if the standard is 60 units per hour and a worker produces on the average 66 units per hour, he is producing at an efficiency ratio of 110%. If his base rate was $1.50, he would receive an additional 15 cents per hour or a total hourly wage of $1.65.²

Company warehouses must be studied because warehousing and handling activities provide another field for cost reduction.

Since warehousing is often performed by independent concerns, management can compare the charges for such services with the company's own costs of warehousing. Frequently, comparative warehouse cost figures will point out opportunities to reduce such costs. The causes of high warehouse costs should be determined. Warehousing space may be poorly utilized, or the cost of handling certain products may be high. Packaging costs done specially to meet some customers' requirements may be too expensive. An evaluation of this function may reveal that the items can be packaged in larger lots to reduce both packaging and handling costs.

Companies that operate a fleet of trucks as a side-line to their regular business are usually less aware that profits are at stake at this point than if truck operations were their regular business. Making use of an adequate standard cost system will minimize expensive truck repairs and correct abnormal operating costs quickly. Significant and unfavorable variances in gasoline and oil expense may indicate a dishonest driver or the need for motor overhaul. If repairs for a class of trucks deviate unfavorably from standard, this may indicate to management that the trucks should be disposed of or that the equipment has outlived its usefulness for the particular type of activity for which it has been used and should be transferred to less strenuous service.

Transportation standards determine the time required for each route in view of the particular conditions which exist on the route. Once the volume potential of each route is
determined, operations in a normal working day and the number of customers which could be served can be planned for reaching these potentials. A study made by applying time standards to the route's characteristics may reveal that some routes require fewer hours than a normal working day to serve while other routes require more hours than in a normal working day. Management may decide that the drivers of the shorter routes could be delivering to additional customers and the drivers of the longer routes should be freed of some clerical or loading jobs.  

Detailed operating costs for each unit of equipment is a valuable guide to management in deciding when to replace individual units and in choosing which kinds of equipment are most economical. Analysis of different types of vehicles and equipment will also help management determine which type is best suited to the company's need. For example, if both electric and manual typewriters are used, a comparison of standards for each type of equipment may reveal the advantages of one over the other. This information will help management decide what type of office equipment should be adopted. Management may decide to purchase equipment with a higher initial cash outlay, with the additional investment paying for itself in reduced operating and repair costs.

Possibilities for other corrective actions can frequently

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be indicated by standards for repetitive operations. A comparison of company costs with the costs to purchase the same service from independent agencies may point out locations where action is needed to keep the costs under better control. Comparison of actual outside costs with standard costs can also assist management in making decisions regarding the proper scope of the activities that they engage in. Management can use the cost information when considering the possibility of expanding the operations to include a larger part of the function within the organization itself.

**By-products of Standard Costs for Nonrepetitive Functions**

Standards for measurement of sales effort may improve sales volume and also reduce selling expenses. An evaluation of the direct selling costs with the commission costs of agents may be useful in deciding if wholesalers should replace the company salesmen. A comparison of the advertising expense with sales results for each territory may also assist marketing management in planning profitable sales promotion. If these standards are used by the marketing managers as a basis for counsel and advice, they should contribute to improved individual performance.

Comparison of standard and actual costs enables management to determine if the company's expenditures are following the approved plan. The company's advertising plan may be designed to give a desired distribution of emphasis to various products or to take advantage of seasonal media. An advertising plan
may also be selected for the purpose of obtaining full coverage of the market. Budget comparison reports can bring management's attention to deviations from these plans.

It is the task of the marketing manager to produce net profits, not merely sales or gross profit. As a result of distribution cost analysis, management may find the plan for compensating salesmen does not achieve the results they intended for it to achieve. The salesmen may be paid additional compensation in the form of a commission or bonus with the bonus relating to sales in excess of a certain quota. The important point is that sales over a certain quota do not ensure profits over the quota. A compensation plan that is profit oriented, rather than sales-volume oriented, forces management to consider implications from a company-wide performance viewpoint. 4

Breakeven Point of Order Size

Standard distribution costs help management determine the number of units that must be sold in one order so that all costs incurred in connection with that order may be recovered. Because the objective is to recover costs, this situation is similar to the breakeven point of factory costs and production. In both cases a breakeven point occurs where there is neither a profit nor a loss.

The standard gross profit for each product unit must first be determined. When a standard production cost system is in use, this is easily determined. The standard unit product costs may vary according to the seasonal capacity. Thus, it may be necessary to compute as many breakeven points as there are standard unit product costs. Furthermore, since distribution costs vary with the volume of distribution activity, any breakeven point that is computed at a given volume will hold true only at that particular volume.

After the standard gross profit has been determined, the costs which apply to the order in question should be selected. The costs associated with one territory should not have an effect upon the cost of an order procured in another territory. Furthermore, the costs associated with one product line should not be combined with those involved with another product line.

Those costs which apply to the order in question should then be divided into two groups—those applied on a per order basis and those applied on other bases. The costs applied on the per-order basis are approximately equal per order, regardless of the size of the order. These costs will be referred to as uniform order costs in this study. Costs applied on other bases vary directly with the number of units involved. When costs are applied upon the basis of sales dollars, the variation is indirect. In such instances a conversion to cost per unit sold is necessary. This conversion
can be achieved by multiplying the cost per dollar by the selling price of the unit.

The costs other than the uniform costs must then be converted to a common unit base. It is necessary to determine the total variable costs on a per unit basis for each product in a given order. This total is the amount by which distribution costs increase for each unit sold. When this amount is subtracted from the gross profit of the product, the result is the amount that is available for absorption of the uniform order cost. The minimum number of units per order necessary to absorb the uniform order cost can be found using the following formula:

\[
\text{Breakeven point of order size} = \frac{\text{Uniform order costs}}{\text{Unit gross profit} - \text{Unit variable costs}}
\]

Analysis of costs to reveal the breakeven point for size of order can be of major assistance to management in exerting efforts to control distribution costs. This analysis may reveal that the company is selling in situations in which the cost may exceed the total margin obtained from the product sales. Often the company may not realize that a small, but nevertheless important portion of its sales are unprofitable. The orders may be too small to be processed at a profit or special handling required on certain orders may eliminate the profit on the transaction. This knowledge will enable salesmen to concentrate efforts on bringing all orders up to the minimum. If methods cannot be devised to reduce distribution costs on
these small orders, management may find it advisable to establish a premium charge for such orders. Data of this nature can also provide management a basis for shifting sales promotion emphasis to provide greater profitability. Information concerning the pricing of products can also be provided by these analyses.

The skilled cost analyst should not be content to accept these unprofitable selling conditions on the explanation that they are necessary for a complete market coverage. He should question whether there is such an object as a complete market coverage of the company products. He should also show that handling a volume of unprofitable business is too expensive a price to pay for complete market coverage.

The net profit to be realized from a given order can be predetermined through the use of standard costs. Management can also develop projections of future earnings of territories based on the standard costs expected to be incurred. A method similar to that involved in computing the breakeven point can be used. The predetermination of net profit is a useful tool of management especially in such situations as when orders are received for irregular quantities of more than one product.

**Distribution Cost Differentials**

Once the breakeven point is determined, every effort, of course, should be made to secure orders calling for units in excess of the minimum number. This policy provides a
reasonable certainty that if the bulk of the orders received call for units in excess of the minimum established, distribution activities are profitable. However, this policy has certain limitations. In making a call on a prospective customer, the salesman is not sure if the customer will demand any units, or if he receives an order, whether the number of units will exceed the minimum order number.

Obviously after incurring the direct selling costs, he should not refuse an order falling below the minimum number because some of the direct selling costs would be recovered by the gross margin. Even if an order containing fewer units than the minimum number is accepted, the company may still earn a profit on the entire operations because the fixed distribution costs are spread over a greater number of units. The number of units in the deficient order has increased the total units.

Savings in distribution costs resulting from large orders provide a legitimate justification for price concessions. A differential is created in distribution costs because the fixed order costs is spread over a greater number of units. The budgets can be used to calculate the amount of savings.

Revision of Product Lines

Many companies have found through distribution cost analysis that their product lines contained many low-volume, low-profit items that could be eliminated without encountering serious objections from the market. Often product lines carry
non-standard items which lag behind in sales volume. Frequently these items represent a package of size variation that was originally added to match competition. Very likely leading competitors have long since eliminated these non-standard items from their product lines. These items are often using common production facilities with more profitable items; thus, they are taking up production capacity which could be devoted more profitably.

Such product line simplification can help to increase distribution efficiency by eliminating costly records and lowering inventories. The elimination of unprofitable lines, which are generally slow movers, will also reduce company investments in inventories. Coordination between production and sales effort is required to prevent inventory losses from both obsolescence and lost sales from shortages in consumer goods.

Distribution cost analysis can also be used to evaluate product development plans that involve the addition of new products. Since many manufacturers are tempted to introduce new product lines which cannot use the same distribution methods of those products in the regular line, it is very important that all distribution activities required by proposed new products be considered.

**Territorial Profitability**

Management is interested in the analysis of historical
profit or loss by segments in order to learn how much profit or loss was realized on each segment; these figures can then be compared with standard profit for the same segment. Territorial cost analysis stresses profits rather than sales volume as a basis for decisions. This analysis forces management to review and better understand its marketing organization and plan.

Territorial analysis seeks proper alignment and direction of selling effort within each territory because geographical sales areas are often designed by sales managerial instinct. Territories determined only on this basis often produce profitless operations. The territories may remain unrevised until the cost of coverage has been determined and the operating results between territories are judged against any measure of the potential business available. Comparison of actual expenditures with standard and comparison of cost ratios between different territories and different periods should lead to better cost performance. Thus, uniformity in classification of accounts and in items charged to the various accounts is essential if either intercompany or intracompany cost comparisons are to be significant. Analysis by territories will help management decide what should constitute a territory, what it should produce, and if it can return a profit to the business.

In analyzing the regional differences in the ratio of sales to potential, management may find that they disregarded territorial sales possibilities in the assignment of advertising and salesmen. Some territories may not have enough profit
potential to support a salesman while other territories have so much potential that the salesman leaves much of the profit potential to competitors. Territories making comparatively poor showings can be spotted by studying territorial statements and plans evolved for improvement. A territorial cost analysis may reveal that the reason for some territories having such a high cost is because the company is selling in those territories only because competitors had invaded the original territory of the company. The company has chosen to meet competition in this expensive manner. Unprofitable areas may be made profitable by reassigning salesmen or by changing methods used to obtain a better balance of effort to sales potentialities.

The relative profitability of a territory may also be found by determining each territory's contribution toward indirect expenses and profit. This contribution can then be compared with the contribution required by the budget. This analysis is helpful because it is hoped that each territory will at least bear its own direct costs and that all territories taken together will cover both direct and indirect costs and leave a net profit.

One objective of territorial cost analysis is to measure the performance of the management in charge of an individual territory. This analysis is usually more significant if the sales district operates as a partially independent unit and the district manager is in a position where he can affect the trend of distribution costs.
A review of the territories through a market profit analysis will reveal the existing market situation and help determine the future course of action. This analysis gives information which aids in the direction of effort so that distribution and price policies can be intelligently formed to ensure greater profitability and efficiency. The information can also be used to estimate the effect which a proposed change in territorial operations can be expected to have on profits. Territorial statements showing net profit margins can be used by management to indicate the geographical areas which are most favorable for expansion of marketing activities.

Distribution cost analysis can highlight low margins while a company is reviewing its territories with the thought of eliminating unprofitable regions. However, a company should evaluate the situation carefully before eliminating a territory that is carrying a share of indirect costs if the remaining territories will have to bear a greater load. A careful evaluation should be made because usually there is a heavy investment in a sales territory. The reason for unprofitable operations could be traced to ineffective performance by the salesmen. Another reason for unprofitable operations could be that the salesmen are not adequately trained or supervised. Also, unprofitable territories must be removed in a manner that will not seriously or permanently affect sound growth. Management tools must be used that will at least slow down the process of acquiring new unprofitable operations.
Return on Investment

The sales territory is an important asset; heavy costs are generally necessary to develop a territory to a point where it yields a profit. Management normally has careful controls to assure maximum utilization of factory machinery while the only controls for maximum profit control by territories is a sales quota. This approach is misleading as it stresses volume rather than profit. However, profits alone should not be the sole basis for evaluating a territory's performance.

In making sales, various amounts of capital are tied up in inventory and accounts receivable.

A sales territory has many of the characteristics of a long-life asset; however, the traditional approach has been to treat all costs related to the development of a sales territory as period costs. However, if the value of the sales territory is capitalized for internal accounting and control purposes, the performance could be evaluated in a realistic way. This would also provide a guide in planning territory expansion. The same financial tools employed in production expansion planning could be used.\(^5\)

Direct and allocated costs could be deducted from the gross profit to arrive at a profit. Income tax could also be deducted to yield an after-tax net income. If this approach is followed, the investment base should include not only the

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investment in the district, but also allocated investment of the home office operations which may cover several districts.\(^6\)

Another approach would be to use only direct territorial costs in determining the income that is used to compute the return on the investment. Standard manufacturing costs should be subtracted from sales to arrive at gross margin and direct distribution costs associated with the specific territory would then be deducted from the gross margin. Only the assets employed in the territory such as inventory and accounts receivable would be considered as the investment under this approach.\(^7\)

Regardless of the approach used, the return on the territory can be determined using the following formula:

\[
\frac{\text{Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Investment}} = \text{Return on Territorial Investment}
\]

The analysis to determine return on investment is very important because of the high cost of capital. Management also usually has many alternative uses available to employ the capital. It is for these reasons that control of investment employed in connection with distribution activities calls for as much control as currently is exercised in investments for

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Mechanical and Electronic Data Processing

The study of distribution costs and a knowledge of how to make them more precise and more effective can be more easily achieved through the use of mechanization and automation. The managerial controls provided by standard distribution costs suggested on the previous pages can be facilitated through the use of mechanical and electronic data processing equipment.

Great progress has been made in the development of such equipment in recent years. The principal benefits from the use of improved mechanical and electronic data processing equipment have been greater accuracy, increases in the speed of furnishing information, and also, in some cases, savings in clerical expense. The ability of these machines to combine accounting, political, and sociological data involving many variables permits analyses and forecasting of a high quality.8

Management has often allocated indirect costs to business segments on bases which they recognized were not theoretically correct, but the correct bases were not feasible since they required so much time-consuming detailed work. Electronic data processing equipment can more easily determine the various factors of variability and the detail necessary to establish standard. Through the use of electronic data processing

equipment, distribution cost can be distributed on theoretically correct bases to territories, salesmen, products, or other business segments desired by reference to the tabulating cards.

Tabulating equipment can be used to accumulate the net sales and standard cost of sales for each district. As the manufacturing plant makes shipments to the territories, the unit standard cost and quantity shipped can be recorded. This information can be transferred from the shipping sheet to punch cards, coded, and summarized. Sales information can be coded and summarized in the same manner.

Data processing can be used advantageously in standard distribution costs for materials used in distribution activities. Distribution materials do not have to be individually costed as the material requisitions can be sorted by part number, quantities footed, and costs can be extended in one operation.

The accumulation of other distribution cost information can be facilitated through the use of electronic computers. Such information as the territory number, salesmen number, commission rates, and transportation costs can be punched into tabulating cards from sales invoices, credit notes, and freight bills. The tabulating cards can then be used to produce daily, weekly, or monthly reports. These reports can be prepared for both general accounting use and various sales and distribution cost analyses.9

With modern electronic tabulating equipment, it is possible to produce almost any conceivable analysis of distribution expense. For instance, electronic data processing can be used to prepare a detailed distribution analysis in terms of hours instead of dollar amounts for each type of distribution labor. The comparison of actual and standard distribution labor hours may be more meaningful, especially to lower management, than the comparison of dollar amounts. Detailed distribution reports can be successfully compiled on tabulating equipment, in some cases at no extra cost.

Inventory records can be maintained through the use of tabulating cards or electronic storage drums by means of which the inventory quantity of each type of raw material, manufactured item and quantities on order can be known promptly at any time. The maintenance of inventory records and the tabulating of inventory reports can be combined with procedures for processing customer orders, customer billing, and sales analysis. Repetitive information such as a customer's name and address can be prepared in advance on prepunched cards or tapes to the extent possible or practical. Special information pertaining to an order can be added when the order is received from a customer. In processing the cards or tapes the machines can adjust inventory quantities to reflect withdrawals to meet the order, prepare a customer's invoice, and provide a tabulating of this and other orders for purposes of sales analysis and bookkeeping. If minimum stock levels and order quantities have been established on inventory
items, the machines can prepare manufacturing orders for items which have reached the ordering point as a result of these withdrawals.\textsuperscript{10}

Operations research techniques have been used in problems relating to physical distribution. Operations research is a process of studying the problem and establishing relationships between the component parts of the problem. Theoretical models are constructed using these physical and quantitative relationships established. Operations research relies heavily on mathematics. This process is an application of scientific methods to the study of alternatives in a problem situation.

Through the use of an electronic computer, mathematical symbolization and techniques can express the various relationships and the various quantities which are involved. Because there are so many alternatives in the complex problems of plant and warehouse location and transportation routes, mechanical assistance is essential. The distribution situation can be formulated into a model which can be programmed into an electronic computer. The process is not a quick or easy one. Specially trained personnel are required to use this technique, but the accountant should and can be an important part of the team. A number of companies have used operations research techniques and have found the results are extremely beneficial in terms of reduced costs. Once the optimum

transportation route and warehouse locations are determined, standard cost can be established using these plans.\textsuperscript{11}

An operation research technique known as linear programming can be used in studies to obtain data for minimizing transportation and warehousing costs. Since the objective can be varied in such a problem, the most economical shipment pattern can be determined using plant and warehouse locations that are fixed. Management may decide to hold plant and warehouse locations fixed because of the substantial investments previously made for the facilities. The problem can be varied to indicate the best warehouse locations to supply the existing or anticipated pattern of customer demand. These studies can prove to be very worthwhile in reducing transportation and warehousing costs.\textsuperscript{12}

Operations research techniques can be used to determine adequate inventory levels that provide the desired level of customer service without incurring excessive charges for costs associated with inventories. Use of operations research techniques has the advantage of being objective when the interest of several different departments is involved. The sales department is interested in maintaining a large enough stock on hand of all products to provide immediate customer service. The financial department


wants to minimize investment in inventories and the costs of
carrying company products at the lowest possible level. Since
the production department is interested in maintaining production
at an even flow, this department wants to use inventories as a
buffer to absorb fluctuations in customers' demands. Operation
research studies of inventories can reduce inventory levels to
the satisfaction of all these departments. 13

Limitations Upon Successful Application

The distribution cost standards and the distribution cost
accounting system described in the foregoing pages are, of course,
subject to several definite limitations. The chief arguments
against standard distribution costs are concerned with the
difficulty of their determination and their questionable validity
after they are determined.

No matter how efficiently distribution costs are planned
and controlled there is no certainty that the resulting sales
will closely correspond to the cost of that effort. A further
major factor which limits the effective use of standard cost in
relation to distribution expense is the time lag between actual
expenditures and the resultant sales.

Since distribution costs are more difficult to measure
than are production costs, often the result of distribution costs
is more one of opinion than of measured fact. Many distribution
standards are cost control tools of a very broad type and at

13Sloat, op. cit., p. 22.
best give only a rough indication of efficiency. It is difficult to develop distribution standards for order-getting activities which are comparable in precision and reliability to production standards. Sometimes standard costs for order-getting activities tend to become merely averages of past costs; such standard costs are unsatisfactory measures of performance because any plan which depends entirely on past performance as a measure of efficiency simply perpetuates weakness. 14

**Appropriate Work Units**

Meaningful cost standards are sometimes difficult to develop for distribution activities. One reason for this difficulty is that common or indirect costs usually represent a large portion of the total distribution costs. The finer the classification, the greater is the proportion of costs that must be classified as indirect. Some distribution costs cannot be definitely traced to any one product or any one territory. Since these allocations are subject to the limitations of all allocations, the full cost of any function can often never be determined except on an arbitrary basis. This fact should be remembered in preparing control standards.

Control of distribution costs through the use of standards is sometimes hampered by the lack of completely satisfactory units of output on which cost standards can be based. This

lack of suitable units of measurement for use in cost allocation constitutes one of the greatest difficulties in distribution cost analysis today. The functional units selected for some types of distribution costs are not entirely satisfactory; as a result, the standards are not always effective measurements of distribution efficiency.

The appropriate work unit is often hard to identify because in many cases the relationship between input and output is not clear or does not provide a satisfactory basis for the preparation of a standard. The number of customer calls made or the number of orders received may be the best work unit for the measurement of direct selling activities; yet it is difficult to establish standards for these work units. Also for some distribution costs the volume of activity depends on the level of cost incurred rather than the other way around.

Standard costs per customer call are often established for direct selling costs, and often the work unit is not clearly defined. If a salesman calls upon a company and finds the purchasing agent was not in, he may decide this activity does not constitute a call and he will record only productive calls.

There are certain limitations to the usefulness of time studies in setting standards for direct selling costs. Salesmen use a wide variety of selling methods to meet the customer's characteristics and local conditions. It is sometimes difficult to standardize these selling methods. Salesmen also make customer contacts in ways other than the formal sales call;
for example, at a golf date or other social event. It may be difficult to establish an intelligent unit cost development for these situations. Since time studies are expensive to use, it may not be feasible to study all types of customer contacts. The amount of detailed calculations required to determine standard costs on appropriate work units may make it a forbidding task for firms without an adequate staff or electronic computers.

**Frequent Revision of Standard Costs**

Distribution cost standards are less precise than production cost standards because it is necessary to base distribution standards on average conditions rather than on controlled conditions. Some opportunity to change distribution policies and procedures should exist so that facts uncovered can be utilized successfully. Thus, the conditions under which a distribution expense standard has to operate often change rapidly. For example, the advertising program may change during certain seasons of the year to take advantage of certain consumers' demands.

If supervisors are allowed to excuse poor performance and a large loss variance by discrediting the standards themselves, the cost controls are not serving their purpose. However, the supervisors may have a valid argument because often distribution standards are not adjusted when operation procedures are changed. The standard cost may not represent good current performance because the actual mixture of the variables affecting cost may differ from the average mixture on which the standards were
based. This situation may cause large variances.

Management often finds in variance analysis that it is difficult to determine what portion of the variance is attributable to individual performance and what is due to the influence of changing outside conditions. Distribution standards must be reliable, accurate, and attainable to achieve the objectives for which they were designed. Thus, for the distribution standards to reflect accurate performance, distribution standards must be revised often. However, these revisions may be very difficult, complicated, and expensive.

**Variance Sometimes Not Meaningful**

Sometimes distribution standards may not be meaningful or contribute to increasing the profitability of business. For example, standards may be established as a cost per salesman's call. Management will have to decide if a cost per salesman's call which is lower than standard really reflects the performance desired. Salesmen may not use judgment in the best interest of the company when they are under pressure to meet the standard expressed in number of calls. The standard may cause them not to spend enough time to secure an order or to obtain the proper volume because of the pressure to meet the daily quota of customer calls. On the other hand, a salesman may increase his sales volume in greater proportions than the cost of the variance over standard by spending more time with certain customers. These variances may not be meaningful because the sales accomplished are not tied in with the standard
A comparison of actual costs with standard costs may reveal only meaningless figures if the human element is ignored. Some of the supervisors may be using dishonest tactics to cover up inefficiencies rather than to expose their cost center's poor performance in distribution activities. If nothing is done about substandard operator performance, or if supervisors look the other way when some of their workers cheat on counts, the cost controls are not serving their objective.

The weakness of personnel time reports rests on the accuracy of the people maintaining the reports. Since these reports may be distasteful to the individual, the actual time recorded may not be accurate. Proper instruction in the training of employees to prepare these time reports may have been lacking. Thus, the comparison between actual time and standard time may not be valid. There is no way to test the accuracy of these actual time reports without additional expense.

Sometimes variances are combined and then reported to management; this procedure results in a report which includes price and volume variances along with performance variances. The company's net variance may be favorable and real inefficiencies are camouflaged. A distinction in the reports should also be

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made between controllable and noncontrollable distribution costs. This procedure allows the controllable variances to be highlighted so that management can evaluate performance easily.

Unless the accountant has explained the procedure used to establish standards and disclosed all facts to the marketing managers, there may be a resistance on their part to using this cost information. When business is good and profits high, management tends to be less cost conscious. An analysis to reveal the source and cause of the variance is considered a luxury by many companies. Management must realize the need or benefit of standard costs and be willing to support and use the analysis. There is a tendency on the part of management to assume that once a problem has been defined, it can be solved by merely adding up the standard cost figures. Management may frequently find it desirable to spend as much time explaining an evaluation and the underlying assumptions as in arriving at the solution.

Summary

The managerial controls illustrated in this chapter are very important because in an increasing number of industries today, costs incurred after the production processes are complete are becoming a major item of expense. Such costs even exceed production costs in many companies. Consumers pay for inefficiencies in distribution just as they do for production inefficiencies.
There is a greater need for efficient distribution due to the increased competition in distribution activity. The extent to which companies succeed in meeting competition will largely depend upon their understanding of the underlying market conditions. Companies that keep inefficiencies in their distribution activities will fall behind in the competitive American economy. The company's ability to recognize its strength and weaknesses and to take advantage of such tools as standard costs in their planning are very crucial. Since such planning must be strongly market oriented, it is essential that the accounting system yield data that reflects the impact of cost behavior decisions. The accounting system and procedures should be geared to measuring costs in terms of behavior and responsibility.

Standard cost accounting, properly interpreted, is essential to management for guidance in seeking to produce optimum profits and avoid unprofitable sales; however, standard cost accounting in itself cannot be the complete answer. Such considerations as the stage of market development of a particular territory, the advantages of distributing products in a broad geographical area must be evaluated. Production factors must also be taken into account such as the effect of volume on costs and the most effective employment of production employment. A reliable company must be ready to supply its customers' needs even if this means selling some products that are less profitable than others. However, the more management knows about its over-all cost picture and the better data they have on the
cost of distribution products in each sales territory, the better they are able to plan their distribution techniques and policies in the direction of better profitability.
CHAPTER VII

CASE STUDY, JACK'S COOKIE CORPORATION

This chapter discusses the standard cost system of the Jack's Cookie Corporation, Baton Rouge, Louisiana. A description of the plan used to control distribution costs through the use of budgets is presented.

Background

Jack's Cookie Corporation is composed of a sales organization and three production plants manufacturing products in the sweet goods industry. These bakeries are located at Baton Rouge, Louisiana; Charlotte, North Carolina; and Pulaski, Tennessee. The plant at Pulaski, Tennessee, has only recently been placed in operation. This Company sells cookies and cakes in thirteen states located in Southern and Eastern United States under the trade name, Jack's Cookies. Outside of this thirteen state area, Jack's Cookie Corporation sells their product to other distributors under private labels. For example, they have a distributor in New York City for whom the production plants manufacture and

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1 The majority of the information in this chapter was obtained during a visit to the Production Plant and Regional Sales Office at Baton Rouge, Louisiana, on July 15, 1965. Those from whom information was obtained were: William MacNaughton, Southern Regional Sales Manager, and Gus Luckett, Plant Manager.
The Company originated in 1930 as Jack's Cookie Company. From 1930 until 1958 there were many small Jack's Cookie Companies with various partnerships. The Company was reorganized and incorporated in 1958. The present chairman of the board was the founder of the original company. The manufacture and distribution of the Company's products was started in Baton Rouge, Louisiana, in the early 1940's. From this time until 1958, a production and sales department of the Baton Rouge, Louisiana, partnership was established.

The founder of the Corporation bought a bakery from Mr. Jack Jones in Mississippi who called his bakery, Jack's Cookie Company. The founder continued to use this name. Management has had some problems, especially in registration, with using the name Jack's Cookie Corporation. However, in 1930 when the name was adopted, people generally did not think a name was important from a trade mark position.

Organization

There are three major departments in the corporate organization; Production, Marketing, and Administration. The home office is located at Charlotte, North Carolina. The Vice President of Operations is responsible for the management of the corporate production. Each production plant has its own production manager. The Vice President and Director of Marketing heads the Marketing Department in which the distribution activities are performed. The Marketing Department
is responsible for marketing the product and is not concerned with where the goods are produced. The performance of each of these major departments is measured independently as each department has a separate basis of evaluation.

The Marketing Department's responsibilities are divided into two market territories, the Southern and Eastern Sales Regions. The Eastern Regional Sales Manager and his staff are located at Charlotte, North Carolina, and the Southern Regional Sales Manager and his staff have offices at Baton Rouge, Louisiana. These two regional sales managers have district sales managers reporting to them. Each district sales manager's territory is divided into sales branches which are situated to cover specific parishes and counties.

Each sales branch performs limited accounting functions. These functions are mainly comprised of the recording of sales and distribution expenses that occur within the sales branch. Each branch has its own branch bank accounts and prepares the payroll for its personnel. All branch accounting is funneled into the regional offices where the data are combined into overall regional reports which are sent to Charlotte, North Carolina, for general corporate accounting.

**Standard Cost System of the Production Plant**

The Production Department at Baton Rouge, Louisiana, has an integrated standard cost system. Standards are established for raw material, packaging material, production and distribution labor, and overhead. Each bakery uses approximately 80 different types of material in production and distribution. A stores ledger
account is kept at standard costs for each item. If the actual price differs from the standard, the variance is isolated before it is transferred to stores. A separate price variance account is maintained.

**Packaging Department**

Standards for packaging materials were established by using work sampling. Standards were established for such packaging materials as tape, liners, and dividers. Master shipping box cases are used to pack bags and boxes. Since these box cases are reusable, an estimate of the expected life is made based on actual experience to arrive at a standard cost. This estimate has been found to be very realistic as it is unusual for a significant variance to occur.

Management employed industrial engineers from another firm to use time study to determine the packaging labor standards. Packaging standards are based on either one of two types of units. One type of unit is a box containing 360 bulk cookies. Six of these boxes can be shipped in the reusable master box cases. The other type of unit is twelve bags which can be placed in a box case.

Daily a record of the number of sweet goods packaged and units of material used in this process are recorded. A material quantity variance is used to accumulate any difference between actual and standard usage. Packaging material standards are not studied in as great detail as raw material standards because the Company has found packaging materials are easier
to control than raw sweet goods materials.

**Transportation Department**

The Production Plant manufactures and packages the goods and transfers these into the Transportation Department. Sales branches submit orders to the Transportation Department and are billed at standard cost. Sales branches are not responsible for Transportation Department performance, and this expense item appears on the operating budget for the plant. The sweet goods are shipped in the Company's trailer trucks. Most of the units are 40 foot trailers; each trailer holds approximately one million cookies. Sweet goods are also delivered through direct lines to large chain stores.

Time study is used to establish transportation labor standards. Standards for other transportation expenses such as gasoline are established using historical data and are expressed as a percent of sales. Because many of these expense items contain fixed expense elements, a flexible budget is used.

Every four weeks periodic reports are prepared showing a comparison of actual cost with standard cost. All price and quantity variances are treated as an expense on the four weeks periodic reports.

**Cost Accounting System of the Marketing Department**

**Establishment of Standards**

The Marketing Department does not have an integrated standard cost system. However, standards are established on
realistic bases and used for statistical analysis. All expenses of the sales branches are distribution expenses. Many of the distribution expense standards are expressed as a percentage of gross sales; for example, Unsalable (Stores) Account, which is the account for stale products, is related to sales and the standard is expressed as a percentage of this unit. Route and distribution volume discounts also use a percentage of gross sales as their standard. Many of the delivery expense items are expressed as a standard cost per mile traveled. The standards for repair and maintenance are based on historical data and the age of the vehicles in each branch. A Branch Vehicle Report is prepared listing each vehicle by age. The Company has found the standard must be revised to increase the cost as the vehicle becomes older. Vehicle depreciation standards are based on what actual depreciation is expected. Standards vary between sales branches because of the influence of geographical conditions.

The Company revised its advertising standards three years ago to decrease the standard which was expressed as a percentage of gross sales. The Company had employed an advertising agency for six years to plan their sales promotion. The standards were established by both management and the advertising agency on the basis of what these people thought was needed to accomplish the sales objective. With a change in the marketing department personnel, the Company decided to reduce their advertising expenditures.
Percentage analysis is used extensively for control and planning purposes as management feels that percentage analysis is important in evaluating performance efficiency. A total operations standard is set for the seasoned branches that have been in operation for some length of time. This standard is expressed in a percentage of sales. A branch is considered profitable if its branch expenses are less than 30% of actual gross sales within the branch. If branch expenses exceed 30% of gross sales, this indicates an unprofitable situation because either sales volume is too low or branch expenses are too high. Generally the seasoned branches operate with expenses that are below 30% of actual gross sales.

Budget Preparation

Annually branch managers submit to the regional sales manager information concerning what they think operating expenses should be to achieve the desired branch sales volume. The regional sales manager uses this information in setting sales and operating expenses for a branch budget. The budget is broken down by accounts for a four week accounting period and also for each quarter of the year. The sales objective is set on a quarterly basis and the corresponding expenses necessary to accomplish the sales objective are budgeted. The regional sales manager submits the suggested branch budgets to the marketing department at Charlotte, North Carolina. Sales analysts in the marketing department adjust the budgeted sales and expenses based on market research and an analysis of historical data. Market trends are evaluated closely in
preparing budgets. Seasonal fluctuations in sales volume are also considered because the company's sales volume generally increases during holidays. An annual budget is prepared for each fiscal year on a regional and branch basis.

The forms used to record the branch operating budgets are presented in Figure 1 on the following three pages. Space is provided for recording the actual and the budgeted sales and expenses as well as any variances. Actual costs are also computed as a percentage of actual gross sales. Each branch manager receives a copy of his operating budget and periodically has conferences with the district and regional sales managers concerning the control of these expenses. Branch managers are aware of the standards under which they are operating.

The budget set for each branch uses a controllable cost approach. Only those expenses that are controllable on the branch level are included in the budget. Branch administration expenses are included in the budget; however, regional and home office administration expenses are not allocated to branches. Sales regional officers traveling in branches pay strict adherence to recording their expenses as regional and charge none of the expenses to the branches.

Variance Analysis

At the end of each four week period branch variances are analyzed. If a variance is significant in the opinion of the regional sales manager, the regional accountant or the branch manager begins an investigation to determine the cause.
<table>
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<th>Description</th>
<th>Actual</th>
<th>Budget</th>
<th>Variance</th>
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<td>502-2</td>
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<td>511-A</td>
<td>Salary/Commission -</td>
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<td>Salesmen</td>
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<tr>
<td>511-B</td>
<td>Salary - Special Salesmen</td>
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<tr>
<td>512-2</td>
<td>Bonus - T/M</td>
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<tr>
<td>601-2A</td>
<td>Travel Expense - T/M</td>
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<tr>
<td>601-2B</td>
<td>Travel Expense - S/S</td>
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<tr>
<td>601-2C</td>
<td>Travel Expense - Salesmen</td>
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</tr>
<tr>
<td>618</td>
<td>Uniforms</td>
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<td>Sub-Total</td>
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FIGURE 1

BRANCH OPERATING BUDGETS OF JACK'S COOKIE CORPORATION
<table>
<thead>
<tr>
<th>Account Number</th>
<th>Description</th>
<th>Actual</th>
<th>Budget</th>
<th>Variance</th>
<th>Gross Sales</th>
</tr>
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<tbody>
<tr>
<td>507</td>
<td>Wages - Driver</td>
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<tr>
<td>522</td>
<td>Wages - Mechanic</td>
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<tr>
<td>561-3</td>
<td>Overtime - Mechanic</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>599</td>
<td>Labor Transfer Credits</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>601-3</td>
<td>Travel Expense - Mechanic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>620-62</td>
<td>Repair &amp; Maintenance</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>621-62</td>
<td>Parts &amp; Supplies</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>531</td>
<td>Gas, Oil &amp; Grease</td>
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<tr>
<td>641</td>
<td>Tires &amp; Tubes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>678</td>
<td>Vehicles - Lease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>697</td>
<td>Insurance - Vehicle</td>
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<tr>
<td>716</td>
<td>Licenses - Vehicle</td>
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<td>720-3</td>
<td>Vehicle - Depreciation</td>
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**Sub-Total**

<table>
<thead>
<tr>
<th>Account Number</th>
<th>Description</th>
<th>Actual</th>
<th>Budget</th>
<th>Variance</th>
<th>Gross Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>502-4</td>
<td>Salary - Management</td>
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</tr>
<tr>
<td>505</td>
<td>Salary - Clerical</td>
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</tr>
<tr>
<td>512-4</td>
<td>Bonus - Management</td>
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<tr>
<td>551-4</td>
<td>Casual Labor</td>
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<tr>
<td>561-4</td>
<td>Overtime Excess</td>
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<tr>
<td>600</td>
<td>Entertainment Expense</td>
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<tr>
<td>601-4</td>
<td>Travel Expense</td>
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<td>602-6</td>
<td>Meeting Expense</td>
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<tr>
<td>604-6</td>
<td>Dues &amp; Memberships</td>
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<tr>
<td>606</td>
<td>Contributions</td>
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<tr>
<td>612-6</td>
<td>Employee Procurement - Moving - Medical</td>
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<td>617</td>
<td>Employee Relations</td>
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<tr>
<td>629-6</td>
<td>Post./Stat. &amp; Office Supplies</td>
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<tr>
<td>650</td>
<td>Telephone &amp; Telegraph</td>
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<tr>
<td>662</td>
<td>Bank Service Charges</td>
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<td>666-6</td>
<td>Other Services &amp; Misc. Admin. Expense</td>
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<tr>
<td>676</td>
<td>Machinery &amp; Equipment - Rent/Lease</td>
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<td>695</td>
<td>Insurance - Group</td>
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<tr>
<td>696</td>
<td>Insurance - W. Comp.</td>
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<tr>
<td>698</td>
<td>Insurance - Other</td>
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<tr>
<td>699</td>
<td>Non-Reimb. Casualty Loss</td>
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<tr>
<td>711</td>
<td>Taxes - Franchise &amp; Intangible</td>
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**FIGURE 1 (continued)**
<table>
<thead>
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<th>Account Number</th>
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**ADMINISTRATIVE EXPENSE:**

**WAREHOUSING EXPENSE:**

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**ADVERTISING & SALES PROMOTION:**

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<tr>
<td>859</td>
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</table>

**GRAND TOTAL**

*FIGURE 1 (continued)*
If an actual expense deviates from standard in a material amount, the standard and actual percentages of sales are evaluated to determine if a trend can be detected. Management uses the information gained from variance analysis in revising standards for the next budget year.

**Summary and Conclusions**

The standards established by Jack's Cookie Corporation have succeeded in increasing production and distribution efficiency. As a result of distribution cost analysis, management found that advertising expenditures could be reduced by a material amount and the Company could continue growing at the same rate. The Company has been employing the same advertising techniques in all market territories. As a result of distribution cost analysis, management now is investigating the possible effects of geographical influence on the results obtained from sales promotion. Management may decide to vary the advertising methods to meet a specific marketing area's characteristics.

The distinction made in the sales branch budget between controllable and noncontrollable cost is useful in assigning responsibility for cost control. This distinction allows for each organizational unit of responsibility to be budgeted on its controllable costs. Standard cost variances can be related more closely to the cause of the variance and attention can be focused on controllable cost variations. Management feels that the purpose of the controllable and
noncontrollable segregation is to emphasize those expense items over which the branch managers have control.

The viewpoint of this management is that the preferred method of disposition of variances for their operations is to charge or credit them to the income statement. Management does not feel that goods manufactured in one period should be inventoried at different costs from those manufactured in other periods as long as the underlying operating conditions remain unchanged. Therefore, all variances are taken to the income statement as charges or credits to the gross margin of the period in which they occur. Management takes the position that since its standards are carefully determined and revised when necessary, the variance accounts reflect losses and gains due to factors related to efficiency. Another reason for this position is that generally the net variances are insignificant and do not materially affect the reported income of a period.
CHAPTER VIII

CASE STUDY, XYZ COFFEE COMPANY

This chapter discusses the distribution cost control program of the XYZ Coffee Company, Alexandria, Louisiana.\(^1\) This study was undertaken with the objective of determining how successfully a small company can use standards for distribution costs since standard cost methods have generally been associated with complex procedures and considered suitable only for large firms. This case presents a philosophy of standard distribution costs in the language of small business and the description of a standard cost procedure adaptable to small businesses.

**Background**

The Company originated in 1919 as a very small operation and since that time has experienced a steady growth. The home office and manufacturing plant are located at Alexandria, Louisiana, and the Company has four sales and service centers located in the state of Louisiana. Each sales and service center has a division manager. There are two warehouses in each division, a coffee products and a premium products warehouse.

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\(^1\)The Company name and location have been changed. The majority of the information in this chapter was obtained during a visit to the home office and manufacturing plant on July 14, 1965.

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The finished product is shipped from the production plant to the various sales offices. The Company employs approximately 90 people in its production and distribution processes.

Green coffee is imported by the XYZ Coffee Company from coffee plantations in eight Latin American countries. The bulk of the Company's green coffee comes from Brazil. Green coffee is shipped in bags, each weighing 132 pounds. The XYZ Coffee Company manufactures approximately 40 different mixes and blends of coffee. These different blends require green coffee of various types. The green coffee is stored in the company's warehouses before processing.

The green coffee is first routed through a cleaning process to remove any foreign matter. Once the green coffees are mixed, the batch goes to the roasting machines. The roasters are automatically operated by electronic controls and recording devices to assure the correct degree of roasting. The batches are then moved into the whole bean coffee storage bins where they stay for a short time until thoroughly cooled. After the cooling period is ended, the roasted coffee flows into a battery of gump granulizers which are capable of producing all grinds from regular to fine.

Coffee is then ready to be packaged. The packaging machine first forms an airtight inner liner which keeps the ground coffee fresh. The outer wrapper of the bag is formed next from a large roll of paper. This outer bag carries the brand name and other necessary information, such as the particular blend, roast, grind, weight, and coupons. The packaging machines
produces 63 one-pound packages of coffee per minute. An elaborate series of tests is applied to the coffee at different stages of production.

Cost Accounting System

There is a shrinkage in coffee during the roasting process. The actual unit cost of the processed coffee is increased because of this shrinkage in roasting. The actual process cost is charged to each division and no standards are used in costing these coffee products. Actual cost per pound of finished product will vary between periods; this variation is generally attributable to the change in cost of imported green coffee. This affects the division's gross profit because the selling price of the coffee usually does not change directly with the cost of processing. Because of this, the sales divisions' performances are judged on the basis of selling and delivery expense.

Nearly all accounting functions are performed at the home office and very little financial information is given to the division managers. However, the division managers are given the weekly sales volume of coffee sold in their division.

Establishment of Standards

The company operates on a fiscal year ending on June 30. The XYZ Coffee Company does not use an integrated standard cost system. Standards are established for certain distribution expenses based on historical data with necessary adjustments made when management anticipates changes in environmental
conditions. The standards against which the distribution costs are measured in the XYZ Coffee Company are expressed in cost per pound of coffee sold. Standards cannot be exact for all divisions. Differences in geographical conditions of the divisions cause the standards for distribution cost to be somewhat different for each division. For example, in one of the four divisions the market territory covers a wide geographical area. Since each delivery truck in this division is required to travel a further distance than trucks in the other three divisions, auto and truck expense is higher for this division. Each division's performance is compared with individual division standards established.

All advertising activity is under one advertising manager who plans the entire company's sales promotion program. An advertising budget is established after the desired sales volume for the next fiscal year is established. This sales volume objective is expressed both in number of coffee pounds and in a dollar amount. The allowance established for advertising is four cents per pound of coffee to be sold within each division. The advertising manager works with the division managers in determining how the total advertising budget is to be allocated between the different advertising media. Some division managers feel that they receive a better coverage from certain media in their own territory. Since the advertising manager carefully watches the advertising expense through the year, it is very unusual to have an unfavorable deviation. There is also usually very little variance between divisions.
This allowance of four cents per pound of coffee to be sold applies only to established territories. When the Company enters into a territory in which it has never marketed products, the allowance is revised and is usually a higher rate per pound of coffee to be sold. If conditions change and management feels that profitable advertising above the allowance can be employed, more sales promotion is used. The budget can easily be changed to adapt to the marketing situations. The advertising budget is subdivided by different communication media. The advertising manager knows how much of the total is spent for each type of media in the divisions.

Coffee bags carry coupons that can be redeemed in premium merchandise. All expenses relating to the premium merchandise are charged to one company department. Then the cost is charged back to each sales division as a selling and delivery expense. The company follows this procedure because they feel the premium coupons are an advertising media. Each division receives a share of the premium department expense based on the ratio of the coupons issued in that division to the total coupons issued in the company. A standard is established for the premium department distribution expense. This standard is two cents for each coupon redeemed. The selling price of the premium merchandise is determined by adding the cost of the product and the standard distribution cost for the required number of coupons.

Variance Analysis

Every quarter an operating expense statement is prepared
for each division. A consolidated statement is also prepared quarterly for all divisions. This operating expense statement shows the sales and cost of sales for the divisions leaving the gross profit against which is applied the selling and delivery and the general and administration expense for the division. These statements are compared with the corresponding data for the same quarter of the previous year. There is no operating expense statement prepared in the fourth quarter because independent auditors prepare a statement for the entire fiscal year. Since several of the distribution expenses are related, actual cost per pound of coffee sold is not computed for all distribution expenses. For instance, compensation, retirement expense, social security expense and group insurance are combined to compute a cost per coffee pound sold. Depreciation of autos and trucks, garage overhead, and auto and truck expense are also related and an allowance is established for these combined expenses. However, if this actual combined cost per pound deviates significantly from the allowance established, the allowance and the actual cost per expense item is compared to determine the total variance for each expense item.

All sales divisions have the same distribution accounts and the same types of costs are charged to each account in order to facilitate comparison between divisions. Most of the analysis of actual and standard cost is performed at the home office. However, since the costs are broken down by territories, the cause of the variance can be traced to the person responsible.
Summary and Conclusions

At present, the management of the XYZ Coffee Company does not feel that an integrated standard cost system could be profitably installed in their Company, either for production or for distribution. The Company is small and management is in close contact with operations. This management feels that the first step in the use of standard costs for small businesses is to take a practical simple step; in this beginning stage, standards are established at the best estimate or measure which is practical. This management plans to grow step by step from this very simple beginning. An informal system is used whereby standards are used to measure performance and management feels this modified approach is accomplishing approximately the same end-results as a highly sophisticated standard cost system would for this small business.
CHAPTER IX

CASE STUDY, DATA PROCESSING DIVISION,
LOUISIANA NATIONAL BANK

This chapter is a case study of the use of standards to control distribution costs in the Data Processing Division, Louisiana National Bank. Included in this study is a description of selected factors used by the Company and an analysis of their value in improving performance.

Background

The Louisiana National Bank was founded in 1910. In 1960 a change in the policy under which the Bank had been operating was made when new personnel was brought in to manage operations. The Bank's management policy was to provide the best service to as many people as possible at a profit. The objective was to organize and operate all divisions of the Bank as a profit-making enterprise. At this time the Bank had 67 million dollars in total assets. In the five year period from 1960 to 1965, the total assets of Louisiana National Bank have grown to 106 million dollars.

Following this management objective, the Data Processing Division was founded in February, 1962. In May, 1963, one

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1 Most of the information in this chapter was obtained through a visit to the Data Processing Division, Louisiana National Bank in Baton Rouge, Louisiana, on July 15, 1965.
electronic data computer was installed. At this time management of the Bank did not believe the bank's volume would be sufficient to profitably employ the use of an International Business Machine^2 1401 computer. They decided to expand and provide data processing service to clients.

The Data Processing Division operates under the policy of consistent prices for all clients and no concession is given to firms that have bank accounts in the Louisiana National Bank. The division has experienced profitable operations and has grown in capacity. At present the division has two IBM 1401 computers and have two IBM 360 computers on order. Autocoder is the computer language most frequently used; all computer equipment used in this division is manufactured and serviced by IBM.

**Organization**

The division is headed by a Data Processing Manager who reports to the Cashier of the Bank. The President of the Bank has direct line authority over the Cashier of the Bank. The Data Processing Division has three departments, Operations, Sales, and Programming, employing a total of 25 people. The Operations Manager has line authority over the machine operators and key punch operators. The Sales Representative has the responsibility of contacting clients and selling the division's service; he also performs preliminary systems study. The

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^2Hereafter this company will be referred to as IBM.
Programming Manager has authority over the people responsible for designing systems and writing programs.

A committee-type management is used, composed of the Data Processing Manager, Operations Manager, Sales Representative, and Programming Manager. This group forms the Data Processing Internal Policy Making Committee and is concerned with such matters as the selection of the computer language to be used, daily operating procedures, and standards of performance. The Data Processing Manager, Bank Cashier, and Bank President form the Data Processing Policy Management Committee. This committee sets basic data processing policies and objectives for the bank. This committee would be required to approve the purchase of a new computer.

**Standard Cost System**

**Establishment and Revision of Standards**

The Data Processing Division has a very unique system employing the use of standards. A schedule of standard rates is shown in Figure 2 on the following page. A standard rate is set for each operation, for example, key punch, clerical and computer. Both an operator and machine standard rate is established. These two standards are added to arrive at the standard cost per minute. The standards for each class of operators are based on an average expected cost per minute.

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3 This schedule was obtained during a visit with John Lawrence, Data Processing Manager on July 15, 1965.
**SCHEDULE OF STANDARD COST AND PRICES**

<table>
<thead>
<tr>
<th>MACH. OPER.</th>
<th>MACH. 2</th>
<th>COST/MIN CHARGE</th>
<th>PER HOURS CHARGE</th>
</tr>
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<tr>
<td>NO.</td>
<td></td>
<td>/MIN</td>
<td>Mach. Oper. Total</td>
</tr>
<tr>
<td>Keypunch</td>
<td>0240</td>
<td>$0.0334 $0.0105</td>
<td>$0.044 $0.083</td>
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<tr>
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<td>$0.0334</td>
<td>$0.044 $0.083</td>
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<td>$0.039 $0.083</td>
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<td>$0.0454 $0.0276</td>
<td>$0.073 $0.108 $4.00 $2.50 6.50</td>
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<tr>
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<td>$0.0297 $0.0167</td>
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<td>$0.046 $2.75</td>
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<td>Tape</td>
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<td>0.0564 0.056</td>
<td>0.067 4.00</td>
</tr>
</tbody>
</table>

1*(OPERATOR)* Base and Fringe

2*(MACHINE)* Monthly Cost and 10% Overhead

(Originally, Monthly Cost and Tax and 10% Overhead)

3Hourly Cost based on 176 hours/month and all costs are based on Prime Shift

**FIGURE 2**

**STANDARD COST AND PRICES OF DATA PROCESSING DIVISION, LOUISIANA NATIONAL BANK**
determined by using historical data. Both a base salary and a 22% fringe benefit cost is used to compute the standard. A guaranteed bonus is included in the base. A standard is established for all division employees except management.

The machine standard rate is computed by using historical data to determine the average monthly cost and overhead cost. The Company has found by actual experience that a 10 per cent rate is the best estimate to include for such costs as air conditioning and heating. On July 1, 1965, the federal excise tax on calculators and sorters was eliminated; the Company has never paid an excise tax on their systems. Prior to July 1, 1965, this federal excise tax was included in determining the standard machine rate. Even though the Louisiana National Bank can deduct federal excise taxes paid for income tax purposes, the management of the division felt the excise tax should be included in the standard because this tax was a direct expense to the service bureau.

The division has a pricing policy that is consistent for all clients. The charge per minute is partially determined by reference to competitors' prices and by using the division's objective to price at average cost plus 25%. Even though the division works two shifts each working day, all hourly costs are based on prime shift work. Each average month equals 176 hours or eight hours each 22 average monthly working days.

In order to protect themselves in Baton Rouge, Louisiana, where strikes are prevalent, a minimum charge for each job is established. The minimum charge is based on time study data
observing the time necessary to set up a machine to run one document; for example, the time required to run only one payroll check. Thus, if the labor force of one of the division's clients is on a strike and the client will not require a preparation of payroll checks, the client will be billed for a minimum charge for this job.

Less detail is given to determining time standards because the average turnover of service jobs is 18 months and the jobs require many different operating procedures. These standards are based on the experience of the management group. The Data Processing Internal Policy Making Committee reviews each operation in a job to help determine how much time should be required to prepare and run the job.

The end of each working day the Data Processing Internal Policy Making Committee meets to anticipate the time required to perform the next day's operations. Each programmer is required to report how much test time he needs for the following day. The daily schedules also report what equipment is needed for each operations. Some allowances for breakdowns and difficulties are added to the standard time in determining the schedule. The management committee has tried to schedule operations on a monthly basis, but found this was not feasible because of inherent features in their fluctuating operations.

Management revises operator standards every three months because of the turnover of this group. They have found this standard rate varies significantly from period to period because of the differences in base salaries. An operator with three or
four years experience with the Company will generally have gotten salary increases and will have a higher base. If there are many new operators, the standards will be lower because of the beginning salaries. Standards for machines do not require as much revision because after a contract is signed, rentals do not decrease or increase.

Budget Preparation

Each department of the Louisiana National Bank submits annual budgets broken down on a monthly basis to the accounting department. After arriving at different levels of desired sales volumes, the Data Processing Manager must estimate the expenses necessary to accomplish these sales. A flexible budget is established for different levels of capacity. Income statements are prepared for the division showing a comparison of actual and budgeted figures.

Variance Analysis

All employees in this division except the management personnel fill out time cards. The time cards provide space for recording the client number, job number, machine number used, operations performed, operator number, and time employed. A weekly detailed report of these time cards is prepared.

At the end of each month a summary of the time cards is prepared. As the divisions perform more than one job for some clients, a two page report is prepared for each job. For example, a two page report would be prepared for Louisiana National Bank demand deposits and other jobs performed for the Bank. This
Summary is very helpful for management decision making. It shows the standard cost of performing the operations, the cost absorbed by data processing for corrections, the actual time used to complete the job and the total job charge. A comparison of the total job cost with the total job charge enables management to determine if the specific job is profitable or unprofitable.

A time report is prepared monthly and reviewed by the Data Processing Internal Policy Making Committee. This report shows actual job time broken down into regular time, test time, and rerun time or additional time caused by the presence of errors. Because the computer operators are experienced and trained in programming, they can determine the cause of the rerun, whether operations, key punch, or programming corrections.

The time report facilitates the employment of sophisticated procedures. If total actual time exceeds the time management expected the job to take, the computer program can be analyzed to determine if the time can be decreased by changing the sequence. For example, the program may be sorting at a point in the program that is time consuming and can be changed.

Variance analysis is also conducted in a monthly conference with the Data Processing Division Manager and the Bank Cashier.

**Summary and Conclusions**

Although the Data Processing Division is a young organization, it has a well developed program for controlling
costs and its young and enterprising management have plans for additional methods of cost control and analysis. A majority of the employees in the division have had prior experience in this area and have been able to contribute significantly to the division's progress. Very few data processing divisions have their expenses broken down into as great a detail as the Data Processing Division of the Louisiana National Bank. This service bureau has experienced an increasing profit each year of its operations and a big growth is anticipated. All indications are that this data processing division will continue operating more efficiently and thus, more profitably.
CHAPTER X

CASE STUDY, THOMAS J. MORAN AND SONS, INCORPORATED

The results of a case study of Thomas J. Moran and Sons, Incorporated, in Baton Rouge, Louisiana are presented in this chapter. This study was undertaken with the objective of determining what factors were used to establish standards for the distribution costs of a printing concern.

Organization

All printing services are performed by Moran Incorporated in Baton Rouge, Louisiana. The Company has sales offices in New Orleans and Baton Rouge, Louisiana. The Chairman of the Board is located at New Orleans while all other top management personnel have offices in Baton Rouge, Louisiana. The President and the Executive Vice President of the Company are primarily responsible for sales of forms, books, and magazine printing. The Sales Manager, Production Manager, Chief Engineer, Controller,

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1 Most of the information in this chapter was obtained by visiting the plant on August 4, 1965, and talking with the Controller and Sales Manager. After this, the Company will be called Moran Incorporated.
and Manager of Administrative Services all report to the 
Executive Vice President. The industrial engineers conduct 
feasibility studies, establish time and quantity standards, and 
evaluate system and procedures. The administrative service 
department is responsible for estimating printing job fees and 
converting standard time and quantities into standard costs.

Cost Accounting System

The cost system of Moran Incorporated is a job order 
cost system; only actual costs are recorded in the ledger 
accounts. Statistical standards have been used for two or 
three years for control and planning purposes. These standards 
are periodically evaluated and revised when management considers 
it necessary. Many standards presently used were developed 
through engineering or time study analysis. Other standards 
used were determined by reference to historical data; the 
Company is in the process of converting these standards to a 
more scientific basis through the use of time and motion studies.

All income and expense ledger accounts, with the exception 
of payroll accounts, are closed at the end of the month. Since 
the pay period ends on the last Wednesday of each month, payroll 
accounts are closed at this time. The Company follows this 
procedure to eliminate any monthly payroll accruals. However, 
provision is made for these accruals at the end of each fiscal 
year.

Establishing Distribution Standards

The Company performs printing services for some customers
who sign contracts and are obligated to purchase a year’s supply of the printed forms or materials. There is some risk involved for Moran Incorporated because they must estimate the annual usage for each of these customers. The printed material is stored in Moran Incorporated warehouses. The Company has warehouses in both New Orleans and Baton Rouge, Louisiana. Customers requisition the printed forms and materials from Moran Incorporated and are billed for these requisitions only. Because the Company has these annual contracts, they are able to print in economic lots on a uniform production basis. Moran Incorporated also provides printing services on a special order basis.

Moran Incorporated has 19 cost centers or responsibility units for accumulating costs. Costs are broken down into variable, fixed, departmental, and factory within each cost center. The main items comprising the variable expense classification are labor, payroll taxes, supplies, repair and maintenance, electricity, power, and spoilage. Insurance, depreciation, taxes, and license generally are the fixed expense elements of a cost center. Departmental overhead and factory overhead are also accumulated by cost centers to arrive at a cost per hour.

The shipping cost center has two types of operations for packaging the company products, hand wrap and plastic wrap. Any printed material containing carbon inserts must be packaged by hand because the heat of the plastic wrap machine would destroy the carbon inserts. Hand wrap is a more expensive
operation than plastic wrap. Industrial engineers studied the shipping routines and recorded the time each operation should require under normal conditions. Factors such as the number of sheets in the package and the size of the package are considered in determining the standard time necessary to perform each operation. The work unit on which standards are based for this cost center is 100 packages. Standard time is converted into standard cost by applying the costs expected to prevail during the period for which standards are established. Some employees performing the shipping operations are under union agreements, and their wage rate is easily determined.

Stock handling and truck delivery are two other cost centers. Time and motion studies were not used to establish the standards in these cost centers. The actual time recorded in the prior year to perform these operations are examined and used as a basis for setting standards. An allowance is made for any event that is expected to occur that will affect the time required to perform the operations. Since all employees in these two cost centers are under union contract, the regular wage rate and overtime wage rate is readily determined and used in converting the standard time into standard cost.

Separate budgets are established for each cost center. Budgets are established for the entire fiscal year and are then broken down into monthly budgets.

Variance Analysis

Moran Incorporated uses the following three variances:
1. The Expense Variance represents the difference between budgeted variable expenses and actual variable expenses.

2. The Efficiency Variance represents the difference between the budget allowed for standard hours and the budget allowed for actual hours.

3. The Volume Variance represents the difference between the budget allowance and the standard expenses charged to the cost center.

The volume and expense variances are computed for each cost center. The efficiency variance for each customer job is determined and then the variance is analyzed by cost centers. The administrative service department determines the efficiency variance daily and gives this report to the production manager. The production manager and the supervisors determine the cause of significant variances.

**Statement Preparation**

A weekly labor report is prepared for each cost center. This report contains the total budgeted and actual hours and the total budgeted and actual costs and any variances.

Monthly cost center reports are prepared showing actual and budgeted costs and year to date cost totals for both actual and budgeted costs. These dollar amounts are broken down by natural expense items within each cost center. The production manager receives a summary for all cost centers.

A balance sheet, income and expense statement, and cash flow statement are prepared for the company each quarter. Projected statements are also prepared for these three reports. These statements are projected four quarters in advance. A
balance sheet and income and expense statement are also prepared at the end of each fiscal year.

**Summary and Conclusions**

The accounting system employed by Moran Incorporated is designed to meet the specific needs of the printing concern. Since the labor costs for each cost center of this company are often greater than all other costs combined, management feels that careful planning and systematic control of labor costs are essential. They feel that the weekly labor reports are very important in giving them timely information. This rapid reporting of operating data allows better control because unfavorable variances can be corrected soon after their occurrence.
CHAPTER XI

CASE STUDY, ABC DEPARTMENT STORE, INC.

This chapter presents the approach used to control distribution costs through the use of standards and budgets at the ABC Department Store, Inc., New Orleans, Louisiana. The use of common industry statistics in developing distribution standards is discussed.

Background

There are three department stores in the organization, two of which are referred to as branch stores. One of the branch stores is basically a soft goods store specializing in ladies' and men's ready-to-wear and accessories. The other branch store carries hard goods merchandise such as furniture, household appliances, radios, and television sets. The Company also has a branch store in another state which performs some marketing functions independently.

There are 200 employees in the corporate organization. Reporting to the President is the General Merchandise Manager and the Treasurer and Controller. The General Merchandise

1The Company name and location have been changed. The majority of the information in this chapter was obtained during a visit to the home office on July 26, 1965.
Manager is responsible for the merchandising and advertising functions. All other functions are under the authority of the Treasurer and Controller. The General Merchandise Manager is also the Vice President of the organization, and the Treasurer and Controller is also the Chairman of the Board. The General Merchandise Manager and the Treasurer and Controller have direct line authority over each of the store managers.

Cost Accounting System

The majority of the accounting functions are performed at the home office. Standards are not incorporated into the accounting system, but statistical standards are used for planning and control. No data processing equipment is used to process the accounting records.

Establishment of Distribution Standards

Management of this Company uses the statistics obtained through a publication of the Controllers' Congress, which is a division of the National Retail Merchants Association, in establishing distribution standards. Members of the National Retail Merchants Association may submit their sales and cost figures to this division which compiles the data. All the standards are expressed as a percentage of net sales and are broken down into different sales volume classifications. Since the ABC Department Store falls in the five to ten million dollars sales volume, they refer to the percentages for this classification. Even though department stores are not required to report their
cost percentages, so many stores participate that management feels the figures are representative. The Controllers' Congress publishes this pamphlet once a year.

Management of this Company does not establish their standards entirely on these representative figures as they believe the peculiarities of their operations should be given some consideration. Reference is also made to past experience and future plans in establishing the standards.

Budget Preparation

The organization of each store is broken down into functional cost centers. The supervisor responsible for the performance of each cost center compiles a budget for his center. Top management then adjusts these budgets if necessary to arrive at a total store budget. Budgets are established every six months and are segregated by months. A standard dollar amount is established for each expense item within the cost center. For example, the wrapping and packaging cost center establishes standard dollar amounts for such expense elements as payroll, supplies, and services purchased.

The ABC Department Store, Inc. has two large merchandise sales each year, one in the spring and one in the fall. Advertising is used extensively to publicize these sales. Newspaper advertising is used the most; however, advertising by radio, television, and direct mail is also used. The Company also has one or two fashion shows annually.

The General Merchandise Manager compiles detailed
information concerning the advertising used in the prior year. The products advertised and the number of newspaper lines used are listed by months. The Advertising Manager and the General Merchandise Manager adjusts this information for any future plans in arriving at the advertising budgets. A budgeted figure is also established for the fashion shows based on the number of shows they expect to give and the standard cost per show.

Variance Analysis

Each month income and expense statements are prepared for each store showing dollar amounts and percentages for current operations, budgeted operations, and the prior year's operation for the same month. A statement is also prepared showing the actual and budgeted dollar amounts and percentages for the direct expenses of each store. Each store's performance is evaluated on its contribution to indirect expenses and profits. The Treasurer and Controller holds monthly conferences with each supervisor responsible for a cost center's performance to discuss the expense elements which have unfavorable variances.

Summary and Conclusions

Management of this Company recognizes the weakness of depending entirely on the industry figures published by the National Retail Merchants Association. They feel that these figures may represent an average firm whose characteristics
differ significantly from their concern. They feel that common industry figures are not a sufficient basis alone because their concern may employ identical account titles as the industry but charge different cost items to the account. Extensive analysis is made using comparisons of current period expense with the budget and with the expense of a prior period for each individual store. A comparison of distribution costs between stores in the organization would be difficult as there is some variation in the merchandise carried by each store. Management considers the information provided by the Controller's division is comprehensive in character and is designed to fit the needs of their company.
CHAPTER XII

CASE STUDY, METALS DIVISION,
KAISER ALUMINUM AND CHEMICAL CORPORATION

This chapter is a study of the standard distribution cost system of the Metals Division, Kaiser Aluminum and Chemical Corporation.¹ A description of the methods used to establish and revise standards is presented. An analysis of the system's value as a management control tool is also presented.

Background

Permanente Metal Corporation, a group of western interests, joined together during World War II to produce magnesium, chemicals, and ships. When the war was over these interests formed Kaiser Aluminum in order to continue their growth through a new field of business. Kaiser Aluminum entered the aluminum industry as a primary producer in the early months of 1946, purchasing two plants in the Pacific Northwest. Later that same year, the Company began operation of the Baton Rouge alumina plant. As the Company grew and its interests diversified, additional specialized research

¹The majority of the information in this chapter was obtained during a visit to the General Offices and plant of the Metals Division, Kaiser Aluminum and Chemical Corporation, located at Gramercy, Louisiana on June 24, 1965. Hereafter the Company will be referred to as Kaiser Aluminum.

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and development groups were formed.

In 1951, Kaiser Aluminum constructed near New Orleans its Chalmette Works, the nation's largest aluminum reduction plant, where the primary aluminum is produced in the form of ingot, billet and rod.

In 1954 the Company announced plans to build a second alumina plant at Gramercy, Louisiana, which would be on a direct water route for the delivery of bauxite from the Company's Jamaican bauxite operation. Started in 1956 and completed in 1959, this plant produces alumina, caustic soda and chlorine. Approximately 600 people are employed by the Gramercy Works. The Company's fluorochemical plants, completed in 1962 on the 3200-acre Gramercy site, produces aluminum fluoride, hydrogen fluoride and fluorocarbons. Gramercy Works in 1965 also became the site of the Company's new isocyanate plant. Thus, Gramercy Works really consists of two plants representing the Metals and the Chemicals Divisions of Kaiser Aluminum.

The only practical source of aluminum has been the impure hydrated aluminum oxide known as bauxite. Kaiser Aluminum has large deposits of bauxite on the island of Jamaica where the reddish ore is scooped up by mechanical shovels working in open pit mines. The bauxite is shipped in 35,000-ton ships from Jamaica to Kaiser Aluminum's chemical plants at Baton Rouge and Gramercy, Louisiana. The impurities in the ore are removed in order to obtain pure aluminum oxide, alumina. This is the basic material from which aluminum is made.
The alumina is shipped to Kaiser Aluminum's metal-producing plants. Metal production requires the removal of oxygen leaving pure aluminum. Gramercy alumina goes to Chalmette, Louisiana. Chalmette Works consumes approximately 500,000 tons of alumina annually. Alumina usually arrives at the Chalmette Works in large railroad hopper cars of 70-ton and 100-ton capacity.

**Standard Cost System**

The Gramercy plant has used an Engineered Standard Cost System since it began operations. This system is based on an engineered standard cost which is established by sound engineering and accounting study. An integrated standard cost system is used in which the cost system is an integral part of the plant financial accounting system. Cost centers, general ledger accounts, and cost element codes are established for the purpose of identifying, classifying, and accumulating costs. Kaiser Aluminum has as many cost centers as they feel are necessary to measure their supervisors' output; every cost center has element expense codes against which costs are accumulated and standards applied.

**Establishment and Revision of Standards**

In this chemical process industry, the industrial engineers are required to accept overall responsibility for the system. The Accounting Department has the responsibility for reporting against the standards and collecting actual costs. Two general classifi-
cations of standards are established by industrial engineers. Performance standards are established which are controllable at the local plant. The other classification is non-performance or non-controllable standards at the plant level.

Once a year standards are revised. Industrial engineers set the standards in a base unit for a cost center's expense elements. Base units often used are tons of washer water, tons of alumina shipped, one month, and scheduled days. One cost center may often have several different base units and there may also be a common base unit of time study and work content. Work content is an important factor because the industrial engineers must understand all work that is done in the cost center; sometimes hourly operating personnel perform minor tasks which might be considered maintenance. The standards established must allow time for this activity. For example, in the Shipping Department the employees often lubricate their equipment in addition to loading rail cars.

Standards for some items such as maintenance materials are based on past experience or historical data. This rather arbitrary method is used only if no other basis can be selected for computing standards and is avoided whenever possible. By identifying standards with historical data, cost trends are under constant observation.

Standards are set on a reasonable basis that gives effect to all known normal factors. There is no provision for abnormal losses. Standards are set tight enough to encourage high standards of performance, yet they are not set so tight as
to be detrimental to the employee's morale.

Standards are set for one year; at the end of each year a study is made to determine whether standard revision is required. The conditions under which the standards are operating may change during the year; for example, the Shipping Department may change from rail to barge transportation. In this case, the standard is updated at the time of the change.

After the industrial engineer completes his study and arrives at a standard for each cost center, the person responsible for the cost center's performance is asked to sign the standard. On this expense standard is spelled out in dollars what standard costs are necessary to operate this cost center. These costs are related to the variables with which they are associated. Each cost has a definite basis for its computation.

A total is made for all the items and the total is the standard cost for this particular cost center. If the foreman in charge of the cost center does not agree with the standard established by the industrial engineer, he must support his position. If any adjustments are necessary, they are made and the expense standard is forwarded to the controller for his approval. The expense standard is then sent to the cost accounting department where it is utilized in a computer program.

The majority of the activities at this plant are concerned with production rather than distribution, as Kaiser Aluminum's home office performs the advertising, credit and collection, and other marketing functions. The Metals Division's distribution activities are centered in the Shipping Department
where alumina is usually loaded in 70-ton and 100-ton rail cars. The Chemical Division's Shipping Department is operated in a similar manner.

The Shipping Department's three major expense items are loadout operators, power, and repair and maintenance. Some loadout operators must be present continuously during the normal working day, even though actual loading may be performed for only four hours on some days. The base unit for this minimum work force is scheduled days, which is a standard work day, Monday through Friday. Scheduled days will vary with each month; the normal monthly quantity is 21,733 scheduled days.

Industrial engineers establish by time study the manhour requirements to load 70-ton and 100-ton rail cars. Time study analysis is essential, for example, Shipping Department employees can load a 100-ton car faster than a 70-ton car, as the 70-ton car has to be moved twice because of hopper locations. This is a variable expense determined by the number of cars loaded. Power expense is also variable with the tons shipped.

Some of the personnel are assigned to the Shipping Department on a flexible basis. If the workers are not needed to load cars, they are used in the production process. The manhours worked in each cost center are determined through the use of time clock cards. The job ticket shows the expense distribution by hours to each cost center. This source document will report if a shipping clerk is changed to a production cost center during the day.
The shipping supervisor is not penalized for any inefficiencies which may occur in repair and maintenance labor. The consumer cost center is charged for repair and maintenance labor at 100% efficiency. Any variance between actual cost and standard cost is charged to the repair and maintenance cost center. Standards are set for the repair and maintenance employees by time studies. For example, there may be five different repair jobs that can be performed on a loadout gun. The repairman checks which of these jobs he performed and there are corresponding standards for each of these jobs.

**Variances**

Actual cost is accumulated for each cost center and is broken down by expense element. Actual cost is determined from such computer programs as Stores Inventory and Payroll Distributions. The standard per base unit is stored in the computer. When the month is complete, the Accounting Department will apply the actual quantities for the previous month to arrive at the proper standard cost for that month. This standard cost is broken down by expense item within each cost center and compared with the actual cost to arrive at variances.

The spending variance is the difference between the actual quantity of base unit used, as actual manhours, at standard price and the industrial engineer standard at standard price. This variance does not reflect any price variance, but does reflect the efficiency of the cost center. This spending variance is controllable by the cost center proprietor.

The price variance reflects changes in wages or purchased
materials. All labor is first isolated to determine if there is any price variance before being charged to the cost centers. The negotiation of labor cost changes is the responsibility of the Industrial Relations Department. Material price variances are the responsibility of the Purchasing Department. These variances are not controllable by the cost center proprietor.

The production rate variance shows the effectiveness of equipment or manpower utilization for the month by comparing actual production with standard. This is controlled by the cost center proprietor.

The operations practice variance indicates the use of alternate production methods. This is caused by situations where the product was not manufactured or shipped in the manner which was planned. An example of this variance is underloading of rail cars. This would not necessarily be under the control of the cost center proprietor.

**Statement Preparation**

On the eighth day following the close of a month, each first line foreman responsible for a cost center is given a cost statement. This statement shows the favorable and unfavorable spending variance broken down by expense item. The per cent cost performance is also given for the current month, previous month, and year to date. Since standard performance is 100%, this per cent analysis reveals trends easily. Changes in small figures are often highlighted by per cent analysis.

Typically, each cost center proprietor is required to
explain significant variances to his supervisor in writing. Superintendents, the plant manager, and the controller attend monthly staff cost meetings to discuss the plant's operations. Continuing and effective effort to control cost is insured by this method.

On the plant statements, all inventories are kept at standard. This standard includes all plant costs including distribution and production costs. This standard is determined by dividing the normal monthly standard cost by the normal monthly output to arrive at a unit standard cost. For tax purposes the variance is allocated to inventories and to the cost of products shipped. However, these variances are not allocated on statements used for local management control purposes. The variances for each cost center appear on cost statements as period cost.

Summary and Conclusions

Kaiser Aluminum feels that a standard cost system is the best cost system available for their use. Kaiser Aluminum recognizes that historical cost comparisons alone are inadequate for their needs. Cost control based on actual costs alone would not indicate why something happened, or what could be done to obtain the best future operations. Comparison of actual with standard becomes meaningful and aids in decision making.

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2This view was expressed by Mr. J. A. Campbell, Plant Controller, Gramercy Works, and other Kaiser Aluminum employees.
Kaiser Aluminum feels one big advantage of using standard cost is that all employees know what performance is expected of them. Performance and cost standards are provided for each group of workers. There has been a delegation of authority which can be measured and compared with predetermined standards of performance so that variances from standard can be identified with workmen and supervisors. The performance of each cost center is free from influence by the performance of other cost centers.
CHAPTER XIII

SUMMARY AND APPRAISAL

General Findings of the Field Study

In this study six companies were interviewed to learn how standard costs for distribution activities are developed and how they are used by management in business practice. The experience of the companies analyzed in this study indicates that substantial savings in distribution costs can often be made by establishing distribution cost standards.

The organization practices of some of these companies interviewed showed that some activities defined as distribution functions in this study were under the line authority of manufacturing division heads. The field study also disclosed that the typical practice was to record only actual costs in the ledger accounts. In most of the companies interviewed distribution cost standards are used by marketing management and are not integrated into the accounting system. Electronic data processing equipment is used by many of the companies in the analyses of distribution costs.

Responsibility for Distribution Cost Standards

In all companies interviewed management's plans and
objectives were translated into financial goals expressed in standards and budgets. The field study disclosed that companies can use the accounting cost control tools of standards and budgets with good effect. The extent to which these cost control techniques are used and actually serve their purpose is determined by the top management's attitude concerning the importance of cost control. It was evident in the field study that top management's attitude affects the degree of cost awareness throughout the entire company at all management levels.

The field study showed that where standard costs are effective cost control tools, responsibility for planning and control coincide with the standard costs at all management levels. The organization plans of most of the companies interviewed were developed to provide for clearly defined responsibility for costs matched with authority to take the actions necessary to effect control. Those responsible for operating according to the standards established also had an opportunity to participate in setting the standards.

Companies interviewed showed that accounting personnel are kept familiar with current distribution operations through meetings and other methods. In many companies interviewed the top level organization is small and centralized so that all concerned know all phases of the company business. Many of the top accounting personnel have had experience in both distribution and production. Some of the marketing executives interviewed have had accounting and finance training which helps them
understand and use accounting information.

**Control of Repetitive Distribution Functions**

Since costs of repetitive distribution functions behave like production costs, the same methods of cost control used in the factory are applied to these marketing activities in the companies interviewed. The field study showed that measure of work output can be found and applied readily to physical distribution operations. In most of the companies interviewed, the order-filling costs are analyzed to identify the factors which cause the costs to vary; for example, some costs are associated with shipments made or miles traveled. Time and motion studies are used by industrial engineers for establishing physical unit standards for most repetitive distribution functions. These physical unit standards are then transferred into standard costs.

The field study showed that comparatively little attention is given to controlling clerical activities through the use of standards. The principal reasons given for the absence of such standards were that these operations are decentralized and each employee performs a wide variety of clerical functions.

Although the standards employed for the control of repetitive distribution functions in the companies interviewed are less exact than are standards used in production, these standards serve the same objective of controlling costs.

**Control of Nonrepetitive Distribution Functions**

Companies interviewed usually stated that they had found
that standard costs could be more readily applied to measuring repetitive distribution operations than to nonrepetitive distribution operations. Representatives of the companies interviewed feel that one reason for this is that often results from order-getting costs do not appear in the same period in which the costs were incurred. Another reason expressed is that employees in these activities work largely with ideas and people, rather than with machines and materials.

Budgeting was the primary accounting tool used by management of the companies interviewed for controlling advertising and sales promotion costs. In some cases the advertising appropriation is a fixed amount decided upon by top management with detailed consideration of the sales activity anticipated. None of the companies interviewed based standard costs for advertising and sales promotion activities on units which measure effort expended. All standard costs for these order-getting costs are based on units which measure results obtained. The companies following the practice of expressing the budget appropriations as a percentage of sales feel that this method is advantageous as additional funds are made available for following a favorable market.

Company representatives interviewed mentioned that past experience represented by ratios of advertising costs to sales and similar historical figures were used as guides in determining how much to establish as standards for order-getting activities. These representatives felt that an advertising and sales promotion program is often more effective
if continuity is maintained over a period of years. Activities of competitors are also given consideration in planning the advertising and sales promotion programs.

The standards used are cost controls of a very broad type and give only an indication of the effectiveness of the operations performed. In none of the companies interviewed are time studies of nonrepetitive distribution activities used to determine how employees spend their working time. Unit standards of the type often employed for variable production costs were not reported by any of the companies interviewed. Company representatives interviewed attributed the absence of such standards to the difficulty of measuring results obtained from such expenditures in units which can be directly related to costs.

**Variance Analysis**

The field study showed clearly that very little has been accomplished in the direction of distribution cost variance development. In many of the companies interviewed the variance for a given cost item is not broken down into causal factors. The budget comparison reports prepared by many of the companies interviewed show budgeted and actual figures with only the net variance developed for each cost item. This practice is not to be encouraged as inefficiencies are easily concealed. The variance must be further explained in terms of such causal factors as volume, price, and efficiency to be meaningful.

Comparison between current and prior period distribution
costs were made by all of the companies interviewed. In some cases these comparisons were reduced to a unit basis to avoid differences in total due to differing volumes. Comparison and relationship of a current period expense with the expense of a prior period may reveal extreme weaknesses; however, many important facts may not be revealed. If certain distribution expenses appear excessive, it is not possible to tell what adjustments should be made to effect a satisfactory performance.

The practice of the companies interviewed shows that sales territory is the principal class of business segment for which costs are desired; intracompany cost comparisons of this type are widely used. In one company interviewed, each department store was considered as a separate sales territory. Intracompany cost comparisons call management's attention to any unit which shows a marked deviation from costs reported by other units.

One company interviewed uses cost data collected and made available by a trade association in the company's industry. These figures are classified by sales volume. However, it is not easy to compare distribution costs in total between any two companies in the same industry because of the wide variation in items classified as distribution costs by various companies. Another explanation for the difficulty of intercompany cost comparisons is the different management concepts encountered in companies within the same industry. There is also a lack of uniform methods in both the methods of distribution and in the methods of charging items to distribution costs. The
firm may employ identical account titles as the industry but charge different cost items to the titles.

The value of this analysis also depends upon the judgment of the firm analysts in interpreting variations between firm and industry. These variations may have little meaning if the quality of industry figures is not very high. These industry figures may represent an average firm whose characteristics differ significantly from the concern employing this analysis.

Complexity of Distribution Cost Accounting

Difficulties Must Be Overcome

Control of distribution cannot be absolute because the factors to be considered in setting distribution standards are numerous and varied. There is a lack of consistent results in markets; this may be the result of uncontrollable factors made up of the timing of the sales effort, buying habits of the public, or other changes which may occur in the sales potential of a sales territory. Thus, distribution activities are difficult to standardize and measure because of these psychological elements involved. Often there is also a continuous readjustment of marketing policies and channels of distribution used.

Although it can reasonably be accepted as factual that problems in determining distribution costs are substantially more difficult than in the factory, it does not necessarily follow that the program should be dropped simply because it is difficult. The reaction of many marketing executives and even
of many accountants will likely be that the cost and analysis of
distribution costs in such detail as suggested in this study
would be too costly. They may also argue that many distribution
costs cannot be subjected to rigid measurement by standards.
However, these same arguments were heard when standard cost
was first introduced for production costs.

In the early days of production cost control, rather
 crude data were used for measurement, and savings were attained.
Good standards against which to measure attained results were
not available for all production cost areas. Even today there
are still improvements which can be made in production standards
despite the refinements that have been given to standards
over the years. Yet, today most companies, except perhaps for
the very smallest, find it imperative to have a quite detailed
production cost system and the results of production cost
procedures are accepted with little question. Elaborate
reporting methods are used to pinpoint areas requiring management
attention. Even though the yardsticks used as standards may
not be completely refined, this cost method focuses management
attention on areas of inefficiency and excess costs which almost
always result in savings. The savings resulting from these cost
control methods have far exceeded the costs of installation and
clerical costs involved.

In spite of the complexity of distribution cost accounting,
distribution cost factors can be determined with enough accuracy
to provide management with information concerning the profitability
of business segments. It must be emphasized the controls and standards cannot be exact or as accurate as those used in measuring production costs; however, the results are sufficient to enable management to make changes or decisions of policy. Through the years of standardization in production, it was not big complicated operations which were standardized, but rather small tasks which could be grouped together to make different combinations. Improving and finding standard elements in any distribution job are laying the foundations for greater progress. Today accountants must make as great as effort in the analysis and interpretation of distribution data as they have given to production costs. Only when this happens will industry be in a far better position to exert real control over distribution costs.

**Accounting and Marketing Executives Must Join Forces**

The accounting and marketing executives must work jointly in the control of distribution costs as the task can only be accomplished by intelligent cooperation of accounting and marketing executives. Accountants must convince marketing management of the necessity of standardization of distribution methods. Accountants should emphasize that similar expenditures in the factory for planning and control have paid off in the results obtained.

There are accounting cost control tools available; however, many accountants have not been sufficiently familiar with distribution activities and the needs which marketing management has
for cost control information. It is suggested that accountants make an effort to become more fully aware of the practical problems of distribution and the assistance which accounting can render in solving these problems. A study of the distribution problems of his concern will allow the accountant to translate cost statistics into useful signals for guidance of the distribution effort. As accountants learn more about the problems in the distribution process, refinements in techniques will occur. Each refinement will improve the quality of data necessary for the establishment of cost standards and the measurement of efficiency.

Cost accountants have an outstanding opportunity and also a definite responsibility for applying cost analysis to the field of distribution. Accurate and intelligent interpretation of the data is necessary so that marketing executives can act with confidence and certainty. As management becomes aware of the cost of performing distribution and the importance of those functions to business they can evaluate the effectiveness of people charged with completing these functions.

Distribution standards are by no means substitutes for executive visions and leadership. Standards are not self-enforcing because standard distribution costs alone cannot accomplish the results as intelligent leadership is needed to use these tools. Quick and easy results should not be expected as much effort, time, and patience is needed to develop these tools to a point of usefulness.
Standard costs hold the promise of being able to provide management with a better understanding of marketing data. This cost technique can provide answers to the many problems in distribution. There is also good reason to believe that standard costs can provide for cost control and increased efficiency in distribution activities. A major challenge faces the accountant because how his profession responds to the problem of distribution may determine the pattern of business activity assigned to the profession for years to come.
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VITA

Letricia Gayle Rayburn, twin daughter of Harold Ray and Myrtle Douglass, was born on the fourth day of May, 1940, in Murray, Kentucky.

She attended the public schools in Murray, Kentucky, and was graduated from high school there in May, 1958. In June, 1958, she entered Murray State College, Murray, Kentucky, and was graduated in June, 1961, with a Bachelor of Science Degree.

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