

Time Studies in Retail Stores¹

Pioneering Effort Toward Scientific Retail Costing

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FREDERICK W. TAYLOR is best known to the semi-lay public as having introduced methods of measuring unit production whether by men or by machines. Out of that concept have developed our modern, production cost-accounting methods. To these and the systems of management based upon them we owe the greater part of the remarkable industrial achievements of the past two decades. These achievements have been so outstanding as to constitute in reality a second industrial revolution.

At the time that Taylor did his work, problems of production were uppermost in the business world. There were demands for more products than the world could produce with the methods and equipment then in existence. Today that situation is completely changed. For practically every commodity we have the capacity to produce far more than consumers are able or willing to buy. Within the last few years the whole emphasis in business has shifted from production to distribution. For the moment we seem to have solved the most pressing problems of production. Productive efficiency has increased far beyond the corresponding efficiency in moving these products to the consumer. Manufacturers have often found that increasing costs of distribution have more than offset the savings they have been able to make in production costs. In this unbalanced condition we undoubtedly find some of the causes for the difficulties through which business has been passing in these last two difficult years.

Unfortunately, no man with the genius of Taylor seems to have arisen in response to our distribution problems. In lieu of that, it has occurred to some of us that it might be possible to adapt some of Taylor's concepts to the problems of commodity marketing.

For the past three years, we have been endeavoring in the Department of Commerce to study distribution from the standpoint of what it costs to handle in-

dividual commodities, to serve individual customers, and to perform other individual operations necessary in the transfer of commodities from the producer to the consumer. During this period we have carried out studies with manufacturers, wholesalers and retailers. As these studies have proceeded, it has become clear that the principal distribution costs can be classified under two headings: (1) those accruing to commodities, and (2) those accruing to customers. The goal of this work, therefore, has been to develop satisfactory methods of allocating costs to commodities and to customers. In the distribution by manufacturers and wholesalers both types of costs are important, but with the major emphasis perhaps on customer costs. In retail distribution commodity-cost problems predominate, often to the exclusion of tangible customer-cost problems.

In considering the question of cost allocation to commodities and customers, our staff has found it necessary to divide all costs into functional groups which are somewhat different from those usually used in accounting practice. At the present time we are using four main groups with several sub-groups. These main functional groups are: (1) maintenance, or the cost of maintaining an establishment ready to offer commodities for sale; (2) movement, or the cost of transferring commodities to the customer, including all selling, handling, delivery and restocking costs; (3) promotion costs, including advertising, cultivation, display, etc., and (4) reimbursement, or the expense of maintaining a return flow of money to balance the outflow of goods.

I shall not attempt here to go into the reasons for these groupings or the theories upon which they are based. This could be done much more thoroughly by those members of our staff responsible for the development of this work, particularly Mr. Wroe Alderson, who has developed the theory and practical application of our distribution-cost studies.

What I do wish to do is to point out the significance of some of the time studies we have had to make

in connection with the application of costing methods to retail-store operations. We have so far carried out, or are carrying out, two important studies in the field of retail costing. These are the Louisville Grocery Survey and the National Retail Drug-Store Survey now under way in St. Louis. The time-study methods used in these two surveys are radically different. It is our belief that the methods now being used in St. Louis are a distinct improvement over those employed in Louisville, although the results of the drug-store study are not yet available.

The Louisville Grocery Survey consisted of an intensive study of the operations of twenty-six independent grocery stores for a period of three months. The survey started with a physical inventory of each store, after which all purchases of commodities and all price changes were recorded, and closed with a second physical inventory. From these data we had for each single item handled by a store the stock on hand at the beginning and end, the turnover, the cost of the goods, the amount they sold for, and the gross margin. We also secured an accurate record of expenses for each store, including allowance for rent of owned building, proprietor's salary, interest on investment, etc.

The problem then was to allocate these expenses justly against each commodity handled. It is clear that the cost of handling commodities is not the same for each. For example, a customer asks for five pounds of sugar and the clerk reaches behind him for a package and the transaction is completed. If the customer asks for ten pounds of potatoes, or for two pounds of tub lard, the clerk has to do many additional things which require much more time than it took to sell the sugar. Clerk time is by far the most important movement expense in a retail store.

Many stop-watch studies were made in Louisville of the time required to sell and handle individual commodities, but the facilities were not at hand to make these extensive enough to form in themselves a basis of cost allocation. Instead, resort was had to time studies for definite periods which accounted for the entire clerk time of the store classified by functions performed by each clerk.

The method by which this was accomplished is as follows: Sheets were provided, one for each clerk, with headings showing each half hour in which the store was in operation. Down the left-hand margin of this sheet were listed the various functions undertaken in store operation. These functions in the grocery

trade were seen to be: cleaning, stock care, telephone solicitation, order assembly, service to customers, delivery, buying and receiving, clerical work.

It will be at once clear that this form discloses for the single clerk the number of minutes in each specific half hour that were spent in the various operations habitually conducted in the store and that it further makes provision for the analysis of this time according to the period in which the operation was performed. The utility of this is considerable, since it permits the measurement of the peak load of business.

By the use of this form it was possible to measure the amount of time at varying wages spent in the entire store in the performance of its necessary functions. Consequently the activities performed against each type of commodity sold could be charged with an accurate quantity of operating time.

The major problem of the retail grocer in dealing with the question of wages is the arrangement of the store's activities so as to care for the peak loads of business without delay and at the same time avoid the employment of so large a clerk staff that idleness is supported during other hours.

The productive functions of the business, that is, the labors immediately occasioned by the passage of goods through the store, consumed 61 per cent of the entire clerk time of the establishment in a typical service store having a volume in excess of \$75,000 annually. This group of functions—service to customers, telephone solicitation, order assembly, delivery, buying and receiving—must be supported to permit a continuous cycle by two other activities—cleaning and stock care—and by a third type of labor—bookkeeping and clerical work.

This method of time study also pointed out the peaks occurring in various activities throughout the day. About 60 per cent of the commodity movement through a grocery store occurs in the forenoon. This is particularly true of delivery activities. With regard to service to customers, there is a clear relationship between the number of incoming customers and the three general meal-time periods. The records for every store showed one peak in the morning hours before eight o'clock; another peak, usually less pronounced, about eleven o'clock in the morning; and a third peak, often the most pronounced, occurring in the afternoon between four and six. The prominence of these various peaks depended to a considerable extent upon the character of the neighborhood in which the store was located. Among other things they indicate that the

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