At the top of the tabulating card is an ·oice form, simplified somewhat but contain- ·g the major items of information needed in ıcing a company's business activity. If this e sale represented the entire year's business this fictitious company, the bill would pro- :le the managers with all the information ey would need in planning the next year's ›erations. They would know that they had ld a certain quantity of a certain quality of ıint to a certain company in a certain place, ıd they could fairly easily determine the cost : handling that commodity and could, without reat difficulty, figure their net profit from the ·ansaction.

It happens, however, that this bill is but ne of many hundred that will be made out in ıe company's offices during the course of the ear. Sales will be made in the territory of ve salesmen, to nine types of customers ocated in sixty-three cities, and these sales vill represent orders for an amazing variety ›f items, sold in widely varying quantities and ıt widely varying discounts. Somewhere in .he maze, this order of ten gallons of red paint s lost. It is never seen again unless the Smith Hardware Co. of New York writes in ınd says that there was a mistake in the total :harge or that they had ordered blue paint instead of red. If that happens, and the jobber isn't busy, he may reflect that he made such and such a profit on that sale, but he still has no way of knowing how much red paint he sold for the year, in what quantities, and at what price.

It is plain, then, that the first task involved in reconstructing last year's business is the recording of the information contained on the sales slip in such a fashion that it may be readily classified and integrated.

To accomplish this, we first convert all the information on the record into numbers. Salesman Charles Adams becomes salesman No. 1, and the territory served by him takes the same number. The Smith Hardware Co. becomes customer No. 213, located in county No. 41 and city No. 4. All of the items carried by the store are carefully coded after the manner of this order so that the description column will bear, in this instance, the number 6174, the first digit indicating that the article is paint, the second that it is of a particular manufacture, the third that it is used for a particular purpose, and the fourth that it is sold in a particular size container. Three additional digits are then added to show color; discount, value, etc., are similarly treated and the bill is then given to an operator who punches holes in the card under the proper headings. When the punching work is completed, the card represents exactly the information that is contained on the charge slip, but that information is now in such a form that it may readily be associated with all similar information. The data, now, instead of being written, is expressed by a hole punched in the card, and by use of a sorting machine all cards bearing similar information may readily be brought together. If the invoice lists several items, a card is punched for each item and another is punched to show the total of the order.

We might now begin at the left of the card and discuss the significance of the information that may be derived from each section as we cross the sheet. The first three columns are used purely for identification and as an aid in checking back on possible errors. The more direct interest in the card begins with the two columns under the heading of date.

A Detailed Record

It is from this column that the logical time and quantity of purchases may most readily be determined. We will start by sorting out ıll the cards punched "1" in this column and

merely secured the total sales for the entire business by months.

It would be safe to rely on such figures if the house sold only one item, but where many items are sold it becomes necessary to know not only how much is sold in a particular month, but what it is out of the entire stock that goes most strongly to make up that total. To discover this, we take the cards for each month and break them down by items. When the tabulation comes off this time, each item speaks for itself. Any faults in buying that may have crept in stand out and ask for correction. For instance, the vendor's invoices may show a purchase of $10,000 worth of red paint in the month of January. The tabulation would show the monthly distribution of sales to be 5 per cent. for January, 4 per cent. for February, 20 per cent for June, etc. With these figures in hand, the merchant can see

able and how many are costing you money. The first thing to determine is, of course, the amount of his total annual purchase for each customer. But while this figure may give us a rough outline of our fortune or lack of fortune with reference to customers, it hardly starts to tell the story, for just as important as the total amount ordered is the method used in ordering. It would be quite possible to sell one customer $1000 worth of goods during the year at a loss and another $500 worth at a profit. This fact can readily be appreciated if we consider the $1000 worth of business as representing 500 two-dollar orders, and the $500 as representing five $100 orders.

Customer Analysis

I have here the record of sales made to four companies during the months of January, February, May and June, 1928, which w[...] demonstrate the pertinence of such custom[...] analysis