

A Guide to Analyzing Customer Profitability

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About This Report: Please Read Carefully

This is part of a reporting package that provides guidance on how distributors can measure and improve the profitability they generate from their customer set. The complete package consists of three components:

- **Overview**—An analysis of the economics of customer profitability (the front part of the report that you are now reading). Individuals with a detailed understanding of the various customer profitability concepts can safely skip the remainder of this document.
- **User's Manual**—A guide that explains some of the various intricacies of the Excel template (the back part of this report, starting on page 15).
- **Excel Template**—An Excel file that enables distributors to analyze the profitability of their customers and determine which actions are required to generate more profit from each customer. Download the Excel file at distperf.com.

Important Note

The entire Analyzing Customer Profitability package is free of charge to distributors. By necessity, it is a generic package in order to help distributors of all sorts—different industries, product groups and sizes. It has to be one size fits all.

There are more sophisticated systems available from a number of consulting organizations. They are all relatively expensive. This program is designed to help firms get started and make some meaningful decisions without investing a lot of money. Firms that require a tailored system should explore one of the many other options available to them.

The Economics of the Customer Set

Every analysis of customer profitability in distribution has come to the same conclusion. Namely, distributors generate virtually all of their profit from a small group of customers and lose a substantial amount of profit on a large group of customers. It is a situation that requires serious review.

To understand just how dramatic the imbalance in customer profitability is, it is necessary to build a brief case study. **Exhibit 1** provides an income statement and some supporting information for a representative distribution organization.

Exhibit 1 Financial Results for a Typical Distributor

	<u>Dollars</u>	<u>Percent</u>
Net Sales	\$20,000,000	100.0
Cost of Goods Sold	<u>15,000,000</u>	<u>75.0</u>
Gross Margin	5,000,000	25.0
Payroll and Fringes	3,000,000	15.0
All Other Expenses	<u>1,500,000</u>	<u>7.5</u>
Total Expenses	<u>4,500,000</u>	<u>22.5</u>
Profit Before Taxes	\$500,000	2.5
Number of Customers	1,000	
Accounts Receivable	\$2,500,000	

As can be seen, this firm with \$20.0 million in revenue operates on a gross margin percentage of 25.0% and brings 2.5% to the bottom line. Its expenses are heavily weighted towards payroll and fringe benefits. It has 1,000 active customers. Finally, its accounts receivable investment is \$2.5 million.

Many distributors deviate from the economic pattern shown in Exhibit 1, of course. However, everything that will be said about this firm and its relationship with its customers is also true for every other distributor. This covers firms operating with the highest possible gross margin percentage to the lowest and from the largest profit margin to the smallest.

Exhibit 2 outlines the relationship between the firm's customers and profitability. As can be seen the 1,000 customers fall into four distinct groups ranging from extremely profitable to unprofitable.

Exhibit 2
The Relationship Between Customers and Profit

<u>Customer Category</u>	<u>Percent of Customers</u>	<u>Percent of Profit</u>	<u>Number of Customers</u>	<u>Dollar Profit</u>	<u>Profit Per Customer</u>
High Profit	15	100	150	\$500,000	\$3,333
Good Profit	15	35	150	175,000	1,167
Some Profit	35	10	350	50,000	143
Unprofitable	<u>35</u>	<u>-45</u>	<u>350</u>	<u>-225,000</u>	<u>-643</u>
Total	100	100	1,000	\$500,000	\$500

It is important to note that the 1,000 customers do not fall into these profit groups because of the sales volume they generate. The categories are entirely dependent upon the *profit* the customers generate for the distributor.

At the top of the list, the High Profit Customers represent only about 15.0% of the firm's total customers (150 customers), but generate 100.0% of the firm's profit. That is, this group provides \$500,000 in profit.¹ Note that individually these customers generate about \$3,333 in profit for the distributor each year.

The second group, the Good Profit Customers, represent another 15.0% of the customer base and provide an additional 35.0% of the firm's profit. That is followed by the third group, the Some Profit Customers. This group is about 35.0% of the customers and yet contributes only about 10.0% of the firm's profit. While it is a small profit contribution, these customers are still profitable.

¹ For individuals that doubt this relationship exists and desire more information, see Brent R. Grover, *In Search of the Perfect Customer*, NAW Institute for Distribution Excellence, 2011.

The total profit from the first three customer groups exceeds the profit for the entire firm. Specifically, these groups, which represent 65.0% of the customers, contribute 145.0% of the firm's profits. In dollar terms, that is now \$725,000.

It is the Unprofitable Customers group that brings the firm back to the actual \$500,000 level that was shown back in Exhibit 1. This last group of customers costs the firm \$643 per customer. In aggregate the loss is \$225,000 or about 45.0% of its total profit.

How Customers Do and Do Not Impact Profitability

In order to move towards improving customer profitability, it is first necessary to understand exactly how customers impact distributor profits. Some of the factors are well understood, others are mired in confusion and urban legend.

Research suggests there are four key drivers of customer profitability. These are the things that cause distributors to generate higher or lower levels of profit from any given customer. The four factors (in order of importance) are 1) gross margin percentage, 2) warehouse and delivery costs, 3) sales costs, and 4) interest on accounts receivable.

Gross Margin Percentage—The variation in the gross margin percentage among different customers is often surprising to many distributors when a detailed analysis is conducted. Some of the reasons for the variations are legitimate, cost-based ones. Others are entirely arbitrary. The four most common factors are:

- **Customer Size**—Larger customers tend to buy at lower prices than smaller ones because of the sales volume they generate for the distributor. The rationale is that such customers help the distributor, in turn, obtain lower prices from its suppliers. They are also viewed as being more economical to serve.
- **Negotiating Results**—Some customers obtain lower prices (and provide a lower gross margin to distributors) due to the nature of the negotiating process. The customer representative simply may have superior negotiating skills. It is also possible that the distributor in trying to open up new territories didn't negotiate aggressively because of that competitive challenge.
- **Salesperson Variations**—In some distribution businesses prices are set and salespeople have no latitude to modify them. In many industries, though, salespeople have at least some degree of pricing autonomy. The reality is that some salespeople can maintain pricing integrity, while others capitulate with great frequency.

- **Product Mix**—Some customers may cherry pick the distributor and purchase only commodities with low margins while others may buy the full product line.

Warehouse and Delivery Costs—For most distributors a significant cost factor is the time and expense associated with processing orders in the warehouse and in making deliveries. These tend to impact profitability in four ways:

- **Order Costs**—There is a “header” cost in terms of orders, reflecting the cost of getting an order ready for picking and assembly as well as inspection of the order. This expense is only marginally related to the actual value of the order, so customers placing larger orders would tend to have lower order costs as a percent of sales.
- **Order Line Costs**—The costs associated with each line item on an invoice. There is a heavy fixed component here as well, as part of the cost is finding the item in the warehouse. Picking more of each item results in more expense, but not dramatically more. Increasing the amount purchased for each item will drive these costs down as a percent of sales.
- **Delivery Costs**—Orders that are delivered are clearly more expensive than those that are picked up at a will-call counter.
- **Returns**—Processing returns is always a high-cost activity. In many situations these costs are not well understood as the focus in operations is almost always on output activity, not returns.

Sales Costs—Outside sales costs are a significant expense item for virtually all distributors. Some of these costs can be attributed as a fixed percent of sales across all customers. Others can vary widely by customer. Unfortunately, the ones that vary tend to be difficult to track to individual customers.

- **Commissions**—The commission component of sales costs is the one that tends to be relatively constant across different customers. However, some very large customers may have a lower commission rate or even be commission free. In some instances there are house accounts that also do not involve a commission.
- **Salaries and Miscellaneous Sales Costs**—For most other sales-related expenses there is a fixed cost per sales call—the cost of driving to the customer and generating the actual order. This cost is relatively consistent across customers. However, some customers tie up an inordinately large amount of the sales person’s time. Some of this time commitment may be due to providing product information, but another part may simply be social interaction.

Interest on Accounts Receivable—The cost of providing credit is a small, but important item. This only becomes important when there are wide variations in terms of customer payment practices.

Most of the costs outlined above can be traced directly to customers based upon activity. For example, the cost of making deliveries can be assigned to a specific account based upon how many deliveries are made to that account. Analyzing such costs simply requires the availability of records on items such as deliveries, number of orders and the like.

Allocating Other Costs

The direct costs that can be assigned to a customer based upon activity almost inevitably account for less than half of the total costs of running a distribution business. This is not as bad as it may seem as the analysis also accounts for all of Gross Margin. Since Cost of Goods Sold is by far the largest factor that drives overall profit, the combination of Gross Margin and Direct Expenses provides a powerful basis for distinguishing between profitable and unprofitable customers.

Even so, the fact that a lot of costs are seemingly left out of the equation is bothersome to some executives. Inevitably, there is a desire to assign “overhead” costs (technically Indirect Expenses) to individual customers. All such efforts are arbitrary. To use management vernacular, “whatever you do is wrong.”

Two cost assignment methods are available. The first is to assign indirect expenses on the basis of sales. The second is to assign the costs to customers equally. In both instances the term “arbitrary” is applicable.

Percent of Sales—Assigning indirect costs on the basis of sales volume makes the assumption that such costs are directly impacted by sales volume. In many cases this is a fair approach. Increased sales levels will inevitably lead to the need for more staff in the office and the like. Taken to its extreme, more sales activity will eventually require a larger facility.

At the same time, it is difficult to make the case that larger customers necessarily drive greater management salaries. Numerous other expenses (depreciation as an obvious example) also seem to be impacted by something other than the level of sales volume.

Per Customer—Assigning indirect costs on a per customer basis merely flips the arguments for and against assigning costs on the basis of sales. Some costs are incurred for the common good and probably should be assigned equally. Others clearly are not.

In practice a blend of both methods should be used. Using only a percent-of-sales approach will make small customers look more profitable. Using a per customer allocation will make large customers look more profitable.

The judgement required to assign certain costs to each method would tax even King Solomon. In the Analyzing Customer Profitability Excel template provided with this report, about two-thirds of the indirect costs are assigned as a percent of sales and one-third assigned equally to each customer. The distinctions are not perfect, but are the result of serious thought.

Regardless of the allocation procedure used to assign costs, it is possible to measure customer profitability at two levels. The first is the contribution margin generated by the customer after considering only direct expenses. The second is the net profit generated after all expenses.

Knowing which customers are more profitable than others is only part of the challenge, though. There is still the issue of what to do about it.

Interpreting Customer Profitability Results

Calculating the profitability of individual customers is actually rather easy, even if it has some arbitrary components. The real challenge is what to do once the analysis is completed.

Consider, for example, the listing of a few of the customers of the distributor whose total firm results were shown in Exhibit 1 and whose customer set overview was shown in Exhibit 2. This small customer set is shown in **Exhibit 3**. The customers have been sorted by dollar profit.

Exhibit 3
Profit Results for Selected Customers

Customer Name	-----Dollar Figures-----					-----Percent of Sales-----			
	Sales	Gross Margin	Direct Expenses	Overhead Expenses	Profit	Gross Margin Percent	Direct Expenses Percent	Overhead Expenses Percent	Profit Percent
Frank's Heating	952,458	346,542	64,703	104,803	177,036	36.4	6.8	11.0	18.6
Kennedy & Nixon	203,610	107,095	17,869	23,536	65,690	52.6	8.8	11.6	32.3
Hal Holbrook and Sons	629,703	153,823	40,071	69,777	43,975	24.4	6.4	11.1	7.0
Empire Solutions	430,159	115,291	30,754	48,122	36,415	26.8	7.1	11.2	8.5
Buffalo's Best	275,208	78,126	17,543	31,306	29,277	28.4	6.4	11.4	10.6
Fast Mechanical	543,635	105,689	19,195	60,436	26,058	19.4	3.5	11.1	4.8
Reed Companies	175,314	54,750	13,250	20,465	21,035	31.2	7.6	11.7	12.0
Metropolitan	154,709	47,472	12,170	18,229	17,072	30.7	7.9	11.8	11.0
Hot and Cold Service	207,533	50,386	11,627	23,962	14,797	24.3	5.6	11.5	7.1
Jim Phelps	213,696	51,485	12,129	24,631	14,725	24.1	5.7	11.5	6.9
Mountain View, Inc.	321,531	68,384	17,525	36,333	14,526	21.3	5.5	11.3	4.5
Berkeley by the Bay	231,686	63,552	28,833	26,583	8,136	27.4	12.4	11.5	3.5
New Corp	210,279	53,039	20,707	24,260	8,072	25.2	9.8	11.5	3.8
Mechanical Works	176,713	42,461	14,747	20,617	7,096	24.0	8.3	11.7	4.0
Amalgamated	940,050	193,011	86,653	103,456	2,902	20.5	9.2	11.0	0.3
Old Corp	208,301	23,387	12,067	24,045	-12,725	11.2	5.8	11.5	-6.1
Giant Company	3,016,272	387,014	144,551	328,772	-86,309	12.8	4.8	10.9	-2.9

There are numerous strategies that could be employed in reviewing the results.

Focus on the Top—The top firm (Frank's Heating) provides almost as much profit for the firm as the remaining sixteen customers combined. The second firm (Kennedy & Nixon) is inordinately profitable on a percentage basis, but generates low sales volume. In both cases, the idea of selling more to the top customer

comes immediately to mind. Additionally, any form of customer appreciation and extra support probably would be warranted.

Focus on the Bottom—The very last company on the list (Giant Company) produces a very high level of sales volume, but also a very large loss for the company. Anything that could be done to enhance the profitability of this one customer would greatly improve the bottom line. In this instance, the gross margin generated is way below the firms typical results.

Focus on Anomalies—In the middle, a customer named Berkeley by the Bay has, for some reason, an exceptionally high cost-to-serve ratio. Specifically, direct costs are 12.4% of sales while most customers are in the 6.0% to 8.0% range. An investigation of how this customer is being serviced seems appropriate.

In practice, most distributors focus on the bottom of the list for a number of reasons. First, there is the emotional component regarding the bottom firms. In short, it just “isn’t right” that the firm loses money on some customers. From a psychological perspective this translates into blaming the customer for the profit situation.

The stark reality is that the distributor sets the prices charged to different customers as well as the services provided to those customers. Any effort to assign blame needs to be turned inward.

The second, and more rational, reason for starting at the bottom is that there seems to be a quicker and easier opportunity to increase profits by focusing on the back end of the customer profitability parade. Selling more to the profitable customers may well be difficult and time consuming. Cutting costs on problem accounts has an aura of a swift and substantial impact.

When working at the bottom two very different approaches emerge. The first is to simply fire the unprofitable customers. The second is to work with the bottom group to increase the profit they generate.

Firing customers is yet another emotional response to the profit structure of the customer set. As was shown back in Exhibit 2, a full one-third of the customers are unprofitable for the distributor. That is 350 customers, which is a lot of firing.

Typically, somewhere around 2.0% of all customers are very unprofitable and probably can’t be converted to profitability. They are unprofitable to the distributor and very possibly quite proud of it. These are clear candidates for elimination. However, in this case there are only about 20 of them (1,000 customers x 2.0%).

Even here, the process should be subtle. Nasty termination letters are cathartic, but ultimately self defeating. This is especially true when the recently-fired

customer acquires the distributor's most profitable customer. The most-favored approach is to simply keep raising their prices and let them "fire themselves" slowly but systematically over time.

The greatest long-term potential from the unprofitable group comes from working with them to change their buying behavior. Assume that of the 350 unprofitable ones shown in Exhibit 2, exactly 20 of them have been fired. That leaves 330 customers. To change their purchasing habits requires a lot of work, requiring analyzing the profit situations of all 330 one at a time. In addition to being a lot of work, it is very slow going.

To see how the process might work, consider the customer Old Corp. It was identified in Exhibit 3 as the second lowest customer in terms of profit generated. In fact, the distributor lost \$12,725 on this account.

Exhibit 4 takes a look at this company using the Excel template provided.

Exhibit 4 Profitability Analysis for Old Corp

	Current		Potential	
	Dollars	Percent	Dollars	Percent
Net Sales	\$208,301	100.0	\$208,301	100.0
Cost of Goods Sold	<u>184,914</u>	<u>88.8</u>	<u>177,056</u>	<u>85.0</u>
Gross Margin	23,387	11.2	31,245	15.0
Direct Expenses				
Orders	382	0.2	382	0.2
Order Lines	1,564	0.8	1,564	0.8
Deliveries	519	0.2	519	0.2
Returns	1,040	0.5	671	0.3
Outside Sales	3,211	1.5	4,152	2.0
Accounts Receivable Interest	<u>5,351</u>	<u>2.6</u>	<u>2,054</u>	<u>1.0</u>
Total Direct Expenses	<u>12,067</u>	<u>5.8</u>	<u>9,343</u>	<u>4.5</u>
Contribution Margin	11,320	5.4	21,902	10.5
Overhead Expenses				
Sales Based Overhead	22,605	10.9	22,605	10.9
Per Customer Overhead	<u>1,440</u>	<u>0.7</u>	<u>1,440</u>	<u>0.7</u>
Total Overhead Expenses	<u>24,045</u>	<u>11.5</u>	<u>24,045</u>	<u>11.5</u>
Net Profit	-\$12,725	-6.1	-\$2,143	-1.0

The Following Changes Were Made For The Potential Analysis

Sales Decrease of	0.0%		
Gross Margin Percentage	11.2%	increases to	15.0%
Number of Orders	228	stays at	228
Number of Order Lines	1,555	stays at	1,555
Number of Deliveries	50	stays at	50
Number of Return Lines	62	decreases to	40
Days Sales Outstanding	156	decreases to	60

Old Corp currently generates a loss of \$12,725 after considering all costs. However, this customer does cover all of its direct expenses and produces a contribution margin (profit after direct expenses) of \$11,320.

It is extremely important to note that the firm is always better off in the short run to keep a customer that is at least covering its direct expenses. There is no need to panic about a customer with a positive contribution margin.

Every customer is unique, but an examination of Exhibit 4 suggests that Old Corp has some readily-identifiable characteristics:

- **Sales**—Total sales revenue is low compared to other customers. This implies that this customer may be using the distributor as a fill-in supplier.
- **Gross Margin**—For whatever reason, Old Corp produces the lowest gross margin percentage of any firm on the list. This is inconsistent with the fact that the distributor is probably a fill-in supplier.
- **Returns**—The level of returns seems high in comparison to its purchases. Quite likely the firm is ordering fill-in items quickly and without real thought only to find that the wrong items were purchased in several instances.
- **Days Sales Outstanding**—Finally, Old Corp pays very slowly. This could either be its mode of operation or inattention by the distributor.

In Exhibit 4 the distributor implements the profit-improvement plan shown at the bottom. The plan reflects the likelihood that Old Corp needs a fill-in supplier and can be encouraged to change some purchasing patterns.

Interestingly, the plan does not attempt to increase sales. The distributor will be content, in this instance, to remain a fill-in supplier. However, the firm does need to at least come close to breaking even in fulfilling this role.

The plan has three components. First, the distributor must be rewarded for being a stand-by, fill-in supplier, so the gross margin rises to 15.0%. This is still low, but is an improvement. Second, the number of returns is reduced through more rational purchasing. Finally, the DSO is sharply reduced.

The net result is that the firm still loses money on the customer. However, the loss is cut by a little over \$10,000.

Such profit-improvement opportunities exist throughout distribution. The challenge is to find them and act on them. The Excel template provided with Analyzing Customer Profitability is designed to facilitate that process.

Time to get out the Excel file and continue on to the User's Manual part of this report and start to work.

Analyzing Customer Profitability: A User's Manual

**Be sure to download the Excel template
to review with this manual.**

If you have specific questions about the template, contact:

**Al Bates
Distribution Performance Project
info@distperf.com
www.distperf.com**

**Please be sure to read this User's Manual
carefully before emailing with questions.**

Introduction

Extremely Important Cautionary Note

This Microsoft Excel template utilizes Macros. Almost all Excel users have Macros turned off. In order to use the template, Macros must be turned on to the highest possible level. Do not fail to do this; the template will not function otherwise.

Limitations

- **Generic Program**—This template provides a fundamental approach to analyzing customer profitability. It is not customized for any specific type of distributor. Instead, it follows a chart of accounts that most firms can adapt to with modest effort. Firms that want to develop a customized version of the template are encouraged to do so. However, any modifications made to the template are at the user's risk.
- **File Size**—The program can handle up to 1,500 customers at a time. Firms wanting to analyze more than 1,500 customers must do so in groups.

Worksheet Tabs

The ***Customer Profitability*** template tabs are organized into four groups:

- **Welcome and Quick Guide**—These tabs outline some general features of the template.
- **Worksheets One through Six**—These are for collecting information about the distribution firm. All of these worksheets must be completed.
- **Worksheet Seven**—This input sheet ensures that customer information is entered into the template properly.
- **Worksheets Eight and Nine**—These worksheets provide the ability to analyze customers, individually or collectively.

All of these worksheets are described in detail in the remainder of this manual.

Welcome

This is simply the start-up screen. It does encourage users to have this User's Manual available to them at all times when using the template.

It also reemphasizes the fact that Macros must be turned on at the highest level. This is absolutely essential. If you are confused in any way, contact your IT manager.

Throughout this guide the screen shots of the template contain numbers for an illustrative distributor.

Welcome

This Excel template is designed to assist distributors in measuring the profitability generated by specific accounts. It does so quickly and easily. However, any errors in entering data into this Excel template will result in an inaccurate evaluation of the profitability for specific customers. Consequently, it is essential that the User's Manual for this system be read and understood.

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READ THIS VERY CAREFULLY

This is a sophisticated template that uses Macros.
Most IT managers require that Macros be turned off for normal operations.
You absolutely must turn Macros back on (to the highest possible level)
or this template will not work.

A Quick Guide to Using *Analyzing Customer Profitability*

The **Quick Guide** is designed to make the user aware of the mechanics of the template. In that regard, two items are of special importance.

First, in Worksheets 1 through 6, only those cells with a yellow highlight and a box are active. All other cells are protected. In many instances entering data in an active (yellow) cell will cause the information in the some of the protected cells to change as a result.

Second, for many of the cells there are comments that are activated when the mouse (not the cursor) is passed across that cell. These comments are especially useful in making sure that the correct information has been entered into each of the cells.

A Quick Guide to Analyzing Customer Profitability

There are only three things you need to know to ensure that this template works properly. They are listed below. However, you should have the User's Manual in hand.

1. Percents should always be entered as whole numbers, not decimals. For example six percent would be entered as 6.0, not .06.
2. Items that require data input are indicated by a yellow box. All other items are calculated automatically for you. In the Sales Mix example provided below, for example, the percentage of sales for Cash, Check and Credit Card must be entered. Then, the percentage sold on House Credit will calculate automatically. Enter any number in the Cash cell to see how this works.

Sales Mix

Cash, Check and Credit Card	<div>0.0</div> %
House Credit	<u>100.0</u>
Total Sales	100.0 %

3. Cells with a red triangle in the upper right-hand corner have a comment associated with them. The comment is activated whenever the mouse is moved across that cell. For example:

This cell has a comment

If you have the User's Manual, you are ready to start.

Worksheet One: Total Firm Financial Results

Worksheet One starts the process of collecting all of the necessary information about the firm. All of the information required on this worksheet is for the total firm. The two sections must be completed **sequentially**. That is, Section A must be completed entirely before moving to Section B. Furthermore, the worksheets are also sequential. Worksheet One must be completed before Worksheet Two.

- The essential requirement in Worksheet One is to get all of the information into the correct boxes. The entire profit analysis process rests on the accuracy of this input.
- All key items have comments (as noted on the *Quick Guide* page) that provide guidance on the data to be entered.
- Information enclosed in yellow boxes are active and allow for data entry. Items not in boxes are protected cells and will calculate automatically. For example, Gross Profit, the third line in Section A, calculates automatically. The calculation is done by subtracting Cost of Goods Sold from Sales.
- Worksheet One uses a representative chart of accounts for distributors. It cannot be changed. However, individual items can be set to zero.

A. Summary Information For Your Firm	
Net Sales	\$10,000,000
Cost of Goods Sold (Include Freight-in, Also Reduce COGS by Purchase Discounts and Rebates)	\$7,500,000
Gross Profit (Calculates Automatically)	\$2,500,000
Total Operating Expenses	\$2,250,000
Operating Profit (Calculates Automatically)	\$250,000
Interest Expense (This should not be in operating expenses above)	\$5,000
Average Accounts Receivable	\$1,000,000

B. Operating Expense Breakouts	
This Section Will Allocate Your Operating Expenses, Which Were:	\$2,250,000
Payroll Expenses	
Executive Salaries and Bonuses	\$160,000
Sales Executive Salaries/Commissions & Bonuses (Include Branch Managers)	280,000
Outside Sales Salaries/Commissions & Bonuses	230,000
Inside Sales Salaries/Commissions & Bonuses (Include Counter Sales)	250,000
Warehouse Salaries/Wages & Bonuses	140,000
Delivery Salaries/Wages & Bonuses	80,000
All Other Salaries/Wages & Bonuses (Office, G & A., etc.)	125,000
Total Salaries/Wages/Commissions & Bonuses (Calculates Automatically)	\$1,265,000
Payroll Taxes (FICA, Workers' Compensation & Unemployment)	100,000
Group Insurance (medical, hospitalization, etc.)	100,000
Benefit Plans (Pension, Profit Sharing, etc.)	50,000
Total Payroll Expenses (Calculates Automatically)	1,515,000
Occupancy Expenses	
Utilities	40,000
Telephone	30,000
Building Repairs & Maintenance	30,000
Rent of Ownership in Real Estate	250,000
Total Occupancy Expenses	350,000
Other Operating Expenses	
Advertising & Promotion	100,000
Insurance	20,000
Depreciation	40,000
Vehicle Expenses	120,000
Personal Property Taxes/Licenses	10,000
Bad Debt Losses	20,000
All Other Operating Expenses (Calculates Automatically)	75,000
Total Other Operating Expenses (Calculates Automatically)	385,000
Total Operating Expenses (Entered in Section A)	\$2,250,000

Worksheet Two: Expense Breakouts

- Different expense items from Worksheet One are broken down into four different sections on Worksheet Two—**A. Outside Sales Payroll**, **B. Vehicle Expenses**, **C. Miscellaneous Expense Issues** and **D. Rebates**. The totals shown in these four sections cannot be changed here. Any changes in the these totals must be made back on Worksheet One.

In Worksheet Two sections, Sections A and B, the final category is calculated as a residual. That is, it will ensure that the categories will add to the total entered previously on Worksheet One.

- **A. Outside Sales Payroll**—This section requires that total outside sales payroll (excluding fringe benefits) must be broken into base salary and commission. If necessary, feel free to estimate. In many firms all sales do not qualify for commissions as there are house accounts, walk up accounts and the like. The last item in this section requires the total gross margin dollars on which commissions were paid.

Important: It is assumed that commissions are paid based upon gross margin, since the overwhelming majority of distributors operate this way. For firms paying commissions based upon sales enter the gross margin dollar item as noted at the bottom of the section. In almost every situation this will be the firm's total gross margin.

- **B. Vehicle Expenses**—This section breaks vehicle expenses into three key categories—delivery vehicles, sales force cars and all other.
- **C. Miscellaneous Expense Issues**—Two items are entered in this section. The first is the outside delivery service (FedEx, UPS, Common Carrier, etc.) expenses net of any recoveries from customers. This can be a negative number.

The second item is the interest rate that firm pays (or would pay) on borrowed funds. This will be used to impute an interest charge on accounts receivable by individual customer.

- **D. Rebates**—This is the total dollar amount of rebates that are included in Cost of Goods Sold on the income statement. This item will not be used in calculating customer profit, as gross margin by customer is almost always calculated without consideration of rebates. For firms that actually can trace rebates to individual customers, this item should be set to zero.

A. Outside Sales Payroll	
Commissions	\$200,000
Salary and Bonus	<u>30,000</u>
Total Outside Sales Payroll	\$230,000
Gross Margin on Which Commissions Paid	\$2,000,000

B. Vehicle Expenses	
Delivery Vehicles	\$50,000
Sales Force Cars	<u>50,000</u>
All Other	<u>20,000</u>
Total Vehicle Expense	\$120,000

C. Miscellaneous Expense Issues Please Read the Comments Carefully	
Outside Delivery Expenses (Net)	\$10,000
Interest Rate on Borrowed Funds	6.0 %

D. Rebates	
Total Purchase Discounts and Rebates	10,000

Worksheet Three: Key Workload Factors

- The factors on Worksheet Three need to be as precise as possible. Nevertheless, many of the factors will require estimates. Samples of invoices and other documents may be necessary to help in the estimation process. All figures should be for the total year.
- If the actual number for any of the factors is zero, then a zero should be entered.
- An order, as defined here, is generated when a customer makes a specific purchase of merchandise, regardless of the number of items on that order. Even if a customer places six orders during the week and they are ultimately combined into one delivery, it still represents six orders. Conversely, if multiple invoices are triggered by a single order, there is only one order even though it results in several deliveries.
- The ***Selected Productivity Ratios*** calculated provide some feedback as to the validity of the data input.

A. Customers and Orders

Number of Customers	400
<u>All of the Following Are For a Full Year</u>	
Total Number of Customer Orders	20,000
Total Number of Customer Order Lines	100,000
Number of Deliveries to Customers	15,000
Number of Customer Return Lines	200

Selected Productivity Ratios

Sales per Customer	\$25,000
Sales per Order	\$500
Sales per Order Line	\$100

Worksheet Four:

Warehouse Time Allocation

- This worksheet may require a substantial amount of time either reviewing work records or observing employees to determine appropriate figures to enter. If this is not possible, estimations are acceptable.
- ***Warehouse Time*** represents the combined total of **all** warehouse employee hours, including the warehouse manager. Counter salespeople should be excluded from the warehouse time calculation.
- Total Warehouse Time needs to be allocated to the seven different functions on a percentage basis. Do not input the number of employees or the number of hours assigned to each function. This must be the distribution of the total number of warehouse employee hours and must add up to 100.0%.

A. Percent of Warehouse Time Spent on Various Functions		
Receiving/Verifying Shipments from Suppliers	5.0	%
Stocking Merchandise onto Shelves	5.0	
Picking Customer Orders	60.0	
Packing/Verifying and Loading Orders	20.0	
Housekeeping	5.0	
Processing Returns	2.0	
All Other Warehouse Activities	3.0	
Total Warehouse Employee Hours	100.0	%

Worksheet Five: Analysis Set Up

- The worksheet allows the firm to determine what information will be gathered on a customer-by-customer basis.
- Four items are absolutely essential and must be measured for each customer:
 1. Sales
 2. Gross Margin (Gross Profit) Dollars
 3. Number of Orders
 4. Accounts Receivable Dollars (Average or End of Year)
- Three additional items will make the analysis more precise, but are not essential. Toggle these items to “yes” only if the firm is able to track them by individual customer. Some items can be set to “yes” and others to “no”.
 1. Number of Order Lines
 2. Number of Return Lines
 3. Number of Deliveries
- The more items that can be set to “yes”, the higher the level of accuracy in the calculations.
- The last section indicates how total expenses will be allocated to individual customers. Note that it is impossible to trace expenses back to customers without some serious estimation. See the accompanying **Overview** document for a discussion of this issue.

Sales Yes

Gross Margin Yes

Number of Orders Yes

Number of Order Lines Yes

Number of Return Lines Yes

Number of Deliveries Yes

Accounts Receivable Yes

Note
Use the Drop Down Boxes to Set These Items to Either Yes or No

How Expenses Will Be Allocated To Customers

Customer Activity 31.4 %

Percent of Sales 43.5

Equal To All Customers 25.2

Total 100.0 %

Worksheet Six: Cost Adjustments

- This worksheet is simply informational as no data can be entered.
- The top part of the worksheet shows how the total firm information was adjusted for use in the Analyzing Customer Profitability model. For reference, the final column also demonstrates what an average customer of the firm looks like in terms of sales, margin and expenses. This is simply the Customer Analysis figures in the middle column divided by the number of customers.
- The bottom part of the worksheet outlines the cost drivers that have been identified for the firm. They will be used in the model.
- Pressing the print icon on this page will generate a document with detailed explanations of how the customer profit drivers were calculated. Firms wanting to develop a tailored template should review the printed document carefully.

	Total Firm	Customer Analysis	Typical Customer
Net Sales	\$10,000,000	\$10,000,000	\$25,000
Cost of Goods Sold	<u>7,500,000</u>	<u>7,510,000</u>	\$18,775
Gross Margin	2,500,000	2,490,000	\$6,225
Operating Expenses	<u>2,250,000</u>	<u>2,290,000</u>	\$5,725
Operating Profit	\$250,000	\$200,000	\$500

Note
The following adjustments were made for analyzing customers:
1. Rebates were added back to Cost of Goods Sold
2. Bad Debts were removed from Operating Expenses
3. Imputed Interest was added to Operating Expenses

Based upon this, your customer profit drivers are:

Gross Margin Percentage	24.90%	of Sales
Cost per Order	\$1.68	per Order
Cost per Order Line	\$1.01	per Line
Cost per Delivery	\$10.39	per Delivery
Cost per Return	\$16.77	per Return Line
Outside Sales Commissions	11.98%	per GM \$
Outside Sales Salaries	\$1.80	per Order
Accounts Receivable	6.00%	per AR \$
Sales Related Overhead	10.85%	per Sales \$
Customer Related Overhead	\$1,440.07	per Customer

Worksheet Seven: Raw Data Entry for Individual Customers

- This worksheet is the input screen for all information regarding individual customers. Up to 1,500 customers may be entered.
- Before entering any customers data, it is essential to clear out any previously-entered customer information. This must be done before making any changes (regardless of how minor) to the information.

This may seem strange. However, if this is not done, the previously-entered customer data have a nasty habit of hanging around. That is, the firm may be attempting to run an analysis for this year with some of the customer information for last year still be in the table.

To clear out the existing information, click on the button labeled ***Click Here to Delete All Customers***. The computer will ask for verification of this step.

- Ten items must be entered for each customer in the analysis:
 1. Customer Number (actually this is optional)
 2. Customer Name
 3. Net Sales
 4. Gross Margin—Dollars, not percent
 5. Outside Commission—If the customer is one on which commissions are paid, enter “1”, if not enter “0”. Do not enter y/n.
 6. Accounts Receivable Dollars—Average or end of the year. Either is fine as long as they are consistent.
 7. Number of Orders.
 8. Number of Order Lines—If not tracked, enter “0”.
 9. Number of Deliveries—If not tracked, enter “0”.
 10. Number of Return Lines—If not tracked, enter “0”.
- Information can be entered by hand or by pasting in from a database or accounting system.
- This is redundant, but the data entered must match up column for column with what is shown as the column headings.
- It is not possible to do anything but enter data on this worksheet. All of the exciting stuff happens on subsequent worksheets.

You may enter information for up to 1,500 different customers in this worksheet.

All data **MUST** be for a full year.

All data **MUST** be entered from left to right, starting in cell B21.

Data **MUST** be entered in every cell. If you don't track a specific item by customer, enter zero.

Data may be pasted from other sources. **PASTE VALUES ONLY! DON'T CUT** cells on this sheet and paste over other cells on this sheet!

It is not possible to sort data on this worksheet. Go to the Customer Sort worksheet to view the list in sorted order.

There are help comments associated with some of the cells.

HOT: Click the button below to clear old data before entering new data for a new group of customers.

[Click here to delete ALL customers](#)

Note! The delete button runs a macro. Your Excel macros must be enabled or it will not work.

Customer Number	Customer Name	Net Sales	Gross Margin	Outside Comm?	Accounts Rec.	Number of Orders	Number of Order Lines	Number of Deliveries	Number of Return Lines
	Giant Company	3016272.35	387014.03	1	362668.55	5008	17103	1000	1876
	Frank's Heating	952458.48	346541.93	1	115679.56	951	7863	50	270
	Amalgamated	940049.64	193011.28	1	323436.92	2422	28923	50	364
	Hal Holbrook and Sons	629702.9	153822.81	1	110751.9	1007	4988	50	356
	Fast Mechanical	543635.45	105689.29	1	36020.9	302	874	50	115
	Empire Solutions	430158.67	115291.15	1	136212.69	905	3331	50	105
	Mountain View, Inc.	321530.64	68383.6	1	89943.49	459	614	50	72
	Buffalo's Best	275207.84	78126.44	1	11439	442	4063	50	81
	Berkely by the Bay	231685.52	63551.82	1	48180.13	548	4280	50	692
	Jim Phelps	213696.04	51484.99	1	44638.92	261	998	50	51
	New Corp	210278.51	53039.24	1	26399.69	627	4897	50	307
	Old Corp	208301.16	23387.41	1	89184.28	228	1555	50	62
	Hot and Cold Service	207533.29	50386.27	1	10170.16	462	1858	50	59
	Kennedy & Nixon	203609.83	107095.44	1	49333.29	138	278	50	48
	Mechanical Works	176712.79	42460.81	1	5633.62	444	1869	50	321
	Reed Companies	175313.67	54750.29	1	19691.33	358	2543	50	71
	Metropolitan	154708.83	47471.6	1	22966.96	256	1543	50	128

Worksheet Eight: Sorting Customers

- This worksheet provides profitability overview results for each of the customers for which information was entered in the previous worksheet.
- The worksheet also allows the firm to sort the customers on any of the eleven columns. Indicate in the **Sort Settings** the factor to sort on and whether the sort should be ascending or descending. Then click on the box labeled ***Click here to sort customers using the sort settings.***

Sort Settings (click each one to change setting)

Column	Profit
Order	Descending

Click here to sort customers
using the sort settings

Note! The sort button runs a macro. Your Excel
macros must be **ENABLED** or the button will not work.

Customer Number	Customer Name	-----Dollar Figures-----					-----Percent of Sales-----			
		Sales	Gross Margin	Direct Expenses	Overhead Expenses	Profit	Gross Margin Percent	Direct Expenses Percent	Overhead Expenses Percent	Profit Percent
	Frank's Heating	952,458	346,542	64,703	104,803	177,036	36.4	6.8	11.0	18.6
	Kennedy & Nixon	203,610	107,095	17,869	23,536	65,690	52.6	8.8	11.6	32.3
	Hal Holbrook and Sons	629,703	153,823	40,071	69,777	43,975	24.4	6.4	11.1	7.0
	Empire Solutions	430,159	115,291	30,754	48,122	36,415	26.8	7.1	11.2	8.5
	Buffalo's Best	275,208	78,126	17,543	31,306	29,277	28.4	6.4	11.4	10.6
	Fast Mechanical	543,635	105,689	19,195	60,436	26,058	19.4	3.5	11.1	4.8
	Reed Companies	175,314	54,750	13,250	20,465	21,035	31.2	7.6	11.7	12.0
	Metropolitan	154,709	47,472	12,170	18,229	17,072	30.7	7.9	11.8	11.0
	Hot and Cold Service	207,533	50,386	11,627	23,962	14,797	24.3	5.6	11.5	7.1
	Jim Phelps	213,696	51,485	12,129	24,631	14,725	24.1	5.7	11.5	6.9
	Mountain View, Inc.	321,531	68,384	17,525	36,333	14,526	21.3	5.5	11.3	4.5
	Berkely by the Bay	231,686	63,552	28,833	26,583	8,136	27.4	12.4	11.5	3.5
	New Corp	210,279	53,039	20,707	24,260	8,072	25.2	9.8	11.5	3.8
	Mechanical Works	176,713	42,461	14,747	20,617	7,096	24.0	8.3	11.7	4.0
	Amalgamated	940,050	193,011	86,653	103,456	2,902	20.5	9.2	11.0	0.3
	Old Corp	208,301	23,387	12,067	24,045	-12,725	11.2	5.8	11.5	-6.1
	Giant Company	3,016,272	387,014	144,551	328,772	-86,309	12.8	4.8	10.9	-2.9

Worksheet Nine: Analyzing a Specific Customer

- This worksheet allows the firm to review a detailed analysis of an individual customer and to make “what if” changes.
- Customers are selected from a pull-down list in the yellow customer selection box. Because of some quirks in Excel, it may appear that there are no customers in the list. Scroll all the way to the top to view the customer list. “All the way” means **ALL THE WAY**. If the user has not scrolled all the way to the top, the list may look blank. If the firm has not entered any information in **Worksheet Seven: Raw Data**, even scrolling up to the top will not produce a customer list. Worksheet Seven must be completed before the firm can analyze a customer.
- Customers are presented on this drop down in the same sequence as they are on **Worksheet Eight: Sorting Customers**.
- The bottom part of the screen allows “what if” changes to see how performance could be improved.
- The first time a customer is selected all of the targets will automatically be set equal to the current results. As new target figures are set, the profit result will change. The new target figures for the customer will be saved during this any analysis session. That is, moving to a different customer and then coming back will cause these targets to appear as changed.
- Once a customer has been reviewed and new targets have been set, press the print icon on the toolbar to print out a complete analysis.
- Before exiting the spreadsheet save all changes, just like with any Excel file. If not, all changes will be lost.

Select a customer from the list.
 Scroll the list up if no names appear in the list.
 Go to the Customer Sort worksheet to sort the list.

Jim Phelps ▼

A Customer Profitability Overview

	<u>Dollars</u>	<u>Percent</u>
Net Sales	\$213,696	100.0
Cost of Goods Sold	\$162,211	75.9
Gross Margin	\$51,485	24.1
Direct Expenses	\$12,129	5.7
Contribution Margin	\$39,356	18.4
Overhead Expenses	\$24,631	11.5
Net Profit	\$14,725	6.9

"What If" Analysis for This Customer

<u>Variables</u>	<u>Current</u>	<u>Revised Target</u>
Net Sales	\$213,696	\$250,000
Gross Margin Percentage (%)	24.1	25.0
Number of Orders	261	261
Number of Order Lines	998	998
Number of Deliveries	50	50
Number of Returns	51	40
Days Sales Outstanding (days)	76.2	45.0
Net Profit	\$14,725	\$21,494

Press the Print Icon to
 See a Detailed Analysis of This Customer

Complete Analysis for a Specific Customer

- The printout on the opposite page provides an example of the report that is produced for each customer.
- Information for the customer is shown on both a contribution and operating profit basis. Overhead expense allocation procedures are discussed in the printout from Worksheet Six.

**Profitability Analysis for
Jim Phelps**

	Current		Potential	
	Dollars	Percent	Dollars	Percent
Net Sales	\$213,696	100.0	\$250,000	100.0
Cost of Goods Sold	<u>162,211</u>	<u>75.9</u>	<u>187,500</u>	<u>75.0</u>
Gross Margin	51,485	24.1	62,500	25.0
Direct Expenses				
Orders	438	0.2	438	0.2
Order Lines	1,004	0.5	1,004	0.4
Deliveries	519	0.2	519	0.2
Returns	855	0.4	671	0.3
Outside Sales	6,635	3.1	7,954	3.2
Accounts Receivable Interest	<u>2,678</u>	<u>1.3</u>	<u>1,849</u>	<u>0.7</u>
Total Direct Expenses	<u>12,129</u>	<u>5.7</u>	<u>12,435</u>	<u>5.0</u>
Contribution Margin	39,356	18.4	50,065	20.0
Overhead Expenses				
Sales Based Overhead	23,191	10.9	27,130	10.9
Per Customer Overhead	<u>1,440</u>	<u>0.7</u>	<u>1,440</u>	<u>0.6</u>
Total Overhead Expenses	<u>24,631</u>	<u>11.5</u>	<u>28,571</u>	<u>11.4</u>
Net Profit	\$14,725	6.9	\$21,494	8.6

The Following Changes Were Made For The Potential Analysis

Sales Increase of	17.0%	
Gross Margin Percentage	24.1% increases to	25.0%
Number of Orders	261 stays at	261
Number of Order Lines	998 stays at	998
Number of Deliveries	50 stays at	50
Number of Return Lines	51 decreases to	40
Days Sales Outstanding	76 decreases to	45

FAQs

Q: Can we break customers out by salesperson?

A: Yes, simply make the first digit or two of the customer identification number an indicator of the salesperson. Then, sort on one of the eleven sort factors. Finally, sort on customer number. The customers will be sorted for each salesperson.

Q: Should the analysis be conducted at the total firm level or branch level?

A: That is your decision. But...if the cost information for the branch includes all of the overhead expenses that are outside of the branch, then a branch analysis will be accurate. If the analysis includes only those costs at the branch level, the system will overstate profitability for all customers.

Q: Some customers are far away from our location. Does the system assign a cost to that factor?

A: No. The system only looks at things that the distributor and customer could work together to change, such as the number of orders, gross margin etc. Since it is not realistic to suggest that customers move, that factor has been set aside.

Q: Some customers are simply more expensive to deal with. How can we handle that?

A: The easiest way would be to take the actual gross margin dollars that the customer generates for the distributor and then reduce the margin dollars by an estimate of the additional expenses incurred in servicing that customer.

Q: What if we have more than 1,500 customers?

A: You will have to deal with them in groups of 1,500. Once all of the information for the total firm has been entered, simply make as many copies of the spreadsheet as required. Then enter the data for each group of 1,500 customers in a separate spreadsheet.

About the Author

Dr. Albert D. Bates is founder and Director of Research for the Profit Planning Group, a benchmarking and executive education firm headquartered in Boulder, Colorado. He is also a Principal in the Distribution Performance Project, a research group devoted to distribution issues.

Al makes approximately 50 presentations each year on topics such as Improving the Bottom Line, Getting Serious About Profit, Doing More with Less, and Pricing for Profit. He is also a featured speaker at the University of Innovative Distribution.

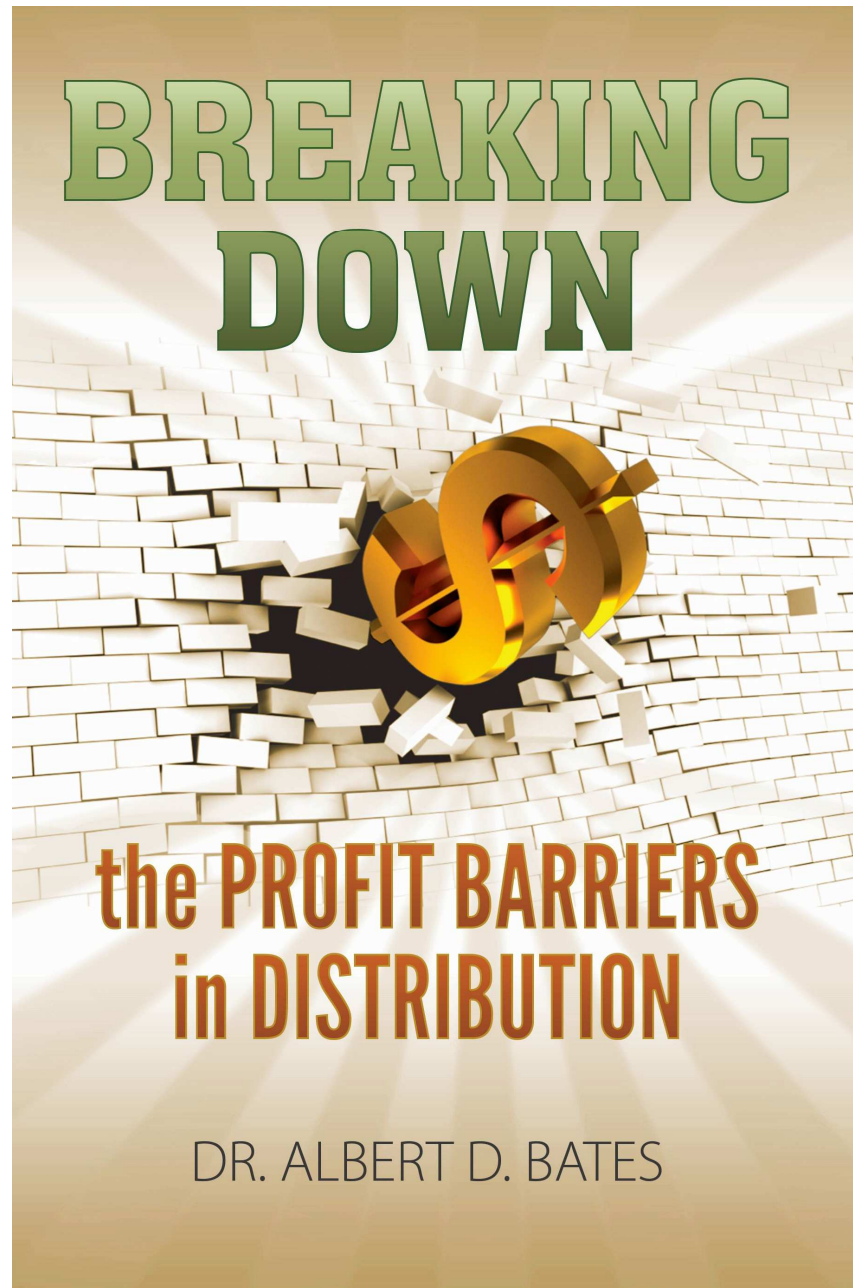
He has written extensively in both the professional and trade press, including the Harvard Business Review, the California Management Review and Business Horizons. In addition he writes the quarterly Profit Improvement Reports for the firm's trade association clients.

Al received his undergraduate degree from the University of Texas at Arlington and his MBA and doctorate from Indiana University. While at Indiana he was one of the first recipients of a Ford Foundation Fellowship in Business Education.

He is married and has three grown daughters. When he is not traveling giving seminars he enjoys tennis and skiing. He is not particularly good at either one.

Please visit the Distribution Performance Project web site (distperf.com) to read past articles, and chapters of books as well as to download free profitability tools.

Every one of your key managers should read this book.



Available from both Amazon and Barnes & Noble in trade paper format. Because of the large number of tables, no ebook version is available.