Saying Goodbye to GMROI

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Executive Summary

- GRMOI is one of the foundations of inventory management for distribution firms.

- The underlying strength of GMROI is that it provides a return on investment perspective to inventory management and provides two levers to improve performance—increasing the gross margin percentage or increasing the inventory turnover.

- GMROI is seriously biased in terms of measuring return on investment. It always overstates the performance of items with a low gross margin percentage and understates the performance of items with a high gross margin percentage.

- GMROI assumes that the two levers—margin and turnover—are of equal strength. In fact, gross margin is much stronger.

- It is possible for an item to have an exceptional GMROI while the item is actually unprofitable.

- Direct Product Profit (DPP) is much more valuable than GMROI for measuring the financial results of individual items, merchandise categories or departments.

- GMROI has the advantage of being easy to understand and easy to use. These advantages are not enough to offset the inadequacies in the ratio.

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Saying Goodbye to GMROI

GMROI is one of the foundations of inventory management for distributors. It is used to make decisions about inventory investment and gross margin from the department level all the way down to individual SKUs. The enthusiasm for GMROI rests upon the fact that it allows firms to make inventory decisions from a return on investment perspective.

The sad truth is that despite the hoopla, GMROI actually produces some biased financial results which can lead to bad decisions and ineffective actions. The problem is that while GMROI does calculate return on investment, it does so incorrectly. It tends to underestimate that return on investment for items or merchandise categories with a high gross margin percentage. Conversely, it tends to overestimate the return on investment for low gross margin items. If anything GMROI is making inventory management decisions less accurate rather than more accurate.

This paper will discuss four different aspects of the GMROI issue:

- **The Basic GMROI Calculation**—A review of how GMROI is calculated. In most cases GMROI is actually calculated incorrectly. This brief section will discuss the fundamentals of the ratio.
- **Management Philosophy Regarding Inventory Performance**—A review of how GMROI is supposed to function as a planning tool.
- **Return on Investment Bias**—A detailed examination of the problems with using GMROI in terms of its bias towards lower-margin items.
- **A New Tool For Decision Making**—Some suggestions as to how GMROI might be supplanted in distributor decision making by a much more sophisticated and accurate tool.

The Basic GMROI Calculation

GMROI stands for Gross Margin Return on Inventory. The intent of the GMROI measure is to review inventory decisions from a return on investment perspective. In this way, inventory would be managed in the same way as the total firm—with an eye towards the highest possible return on a given level of investment.

Computationally, true GMROI is the gross margin dollars generated by a specific item or department during the course of the year divided by its average inventory investment over the year. To take a very simple example, an item with $10,000 of gross margin and $5,000 of average inventory would have a GMROI of 200% ($10,000 ÷ $5,000). The ratio may also be expressed as 2.0 or $2.00.
Regardless of how the number is presented, the calculation indicates that each dollar of inventory investment produces $2.00 of gross margin during the course of the year. Ideally, every individual SKU, category and department should produce the highest possible return on its investment.

In practice, very few firms calculate GMROI using the textbook formula. Instead, most firms actually calculate an approximation of GMROI, more correctly called the Turn & Earn Ratio or Turn & Earn Index. The two ratios share basic DNA, so the exact form of the computation is not a problem as long as the firm uses the same method consistently.

Since almost everybody is using the Turn and Earn calculation and calling it GMROI, it is easier to go with the flow, even if that flow is not what the textbook calculation says it should be. The basic Turn & Earn calculation will be called GMROI throughout the remainder of this report.

GMROI (via the Turn & Earn formula) is Gross Margin Percentage times the Inventory Turnover Ratio. As an example, consider an item with sales of $50,000, cost of goods sold of $40,000, a gross margin of $10,000 and inventory of $8,000. The item would have a gross margin of 20.0% ($10,000 ÷ $50,000) and an inventory turnover of 5.0 times ($40,000 ÷ $8,000). Combining the two figures produces a GMROI of 100.0%.

For managers with experience using GMROI, the value of this form of the calculation is obvious immediately. If the firm wants to increase the GMROI on this SKU, it has two financial levers to work with—it can try to increase the gross margin percentage or increase the inventory turnover. Either choice should lead the firm to a greater return on the inventory investment.

Management Philosophy Regarding Inventory Performance

It is necessary to start with a cautionary note. This section discusses how GMROI is currently being employed as a management tool. The next section will suggest that since GMROI provides incorrect information, then everything in this section is wrong. However, before throwing bricks it is necessary to know the intended target of such bricks. Hence this section.

GMROI, as mentioned before, can be employed at the individual SKU level all the way up to the department level. In many instances the ratio is even calculated for the total firm. GMROI has also become popular as a method for evaluating different merchandise suppliers. Regardless of whether it is assessing a SKU, merchandise category, department, firm, or supplier, GMROI is used in two ways:

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1 GMROI using the textbook formula would be 125.0% ($10,000 ÷ $8,000).
• **Absolute Yardstick**—Since the firm is trying to produce as high a return on investment as possible, it is safe to say that higher is better than lower. Different items will either have or not have management’s favor based upon their GMROI. Merchandising activity and sales emphasis can then be channeled towards those items with the highest return on investment.

• **Two-Pronged Tool**—The GMROI ratio (as it is applied in practice) allows firms to make decisions regarding whether the best way to improve GMROI is to increase the gross margin percentage or the inventory turnover ratio. This gives management two different profitability levers, or a two-pronged tool, to use as competitive circumstances permit.

**Absolute Yardstick**

GMROI is one of the few measures for which it is virtually impossible to set a precise goal. This doesn’t stop firms from setting goals, of course. All sorts of firms have GMROI goals of 150%, 200% or even higher. Items that don’t reach this target level are viewed with suspicion.

Setting a GMROI goal is a comforting exercise. It is also a completely futile one. To understand why, it is useful to consider once again the SKU mentioned at the end of the previous section which had a gross margin of 20.0% and an inventory turnover of 5.0 times and a resulting GMROI of 100.0%.

Since GMROI ignores expenses, it is impossible to say whether a 100.0% GMROI for this SKU is good, bad or ugly. If the cost of selling, handling and processing the SKU are 25.0% of sales, then a gross margin of 20.0% leading to a 100.0% GMROI is woefully insufficient. However, if said costs are 15.0% of sales, then the 100.0% GMROI is wonderful.

As a result of the inability to set a meaningful goal, about the only thing that can be said about GMROI as an absolute yardstick is that higher is better than lower. If the SKU with a 100.0% GMROI can be turned into one with a 150.0% GMROI, then things are moving in the right direction.

Even the “higher is better than lower” rule has some limitations. It really should only be applied to individual SKUs. When the rule is expanded to compare different items, the wheels come off the analytical trolley rather quickly. This is because, different SKUs may have different costs associated with them. GMROI is blissfully ignorant of this issue.

The more different SKUs are aggregated, the more the “higher is better than lower” rule is called into question. Within a narrowly defined merchandise category, such as screwdrivers, items will tend to have somewhat similar costs. As a result, an item with a high GMROI is most likely truly more profitable than one with a low GMROI, although there is no absolute certainty of that.
When the level of aggregation reaches up to the department level, the ratio really has no value at all. Some departments may be dominated by items that are expensive to sell and require costly support. Other departments may be home to items with very low sales costs and requiring almost no support. A department with a high GMROI may or may not be more profitable than one with a low GMROI. Comparisons across departments with GMROI should not be made.

In summary, as an absolute yardstick, GMROI should be limited to two cases. First, SKUs with very similar expense structures (all within a narrowly-defined merchandise category, for example) can be compared directly on the basis of their GMROI.

Second, year-to-year changes can be evaluated with some degree of confidence. If the 100.0% GMROI SKU achieves a 150.0% GMROI during the next year, then things are getting better. The firm will not know when the SKU stops being terrible and becomes simply bad or even graduates to good or excellent. Higher is better than lower is all you get.

**Two-Pronged Tool**

Looking across a wide range of SKUs within a distribution organization, it is obvious that gross margin and inventory turnover are inversely correlated. While the relationship is not perfect, it is pronounced. The SKUs with high gross margins tend to have low inventory turnover rates and vice versa.

As a result of this relationship most managers like to decompose the GMROI calculation into its two components—gross margin and inventory turnover. This is why, incidentally, that the Turn & Earn calculation (Gross Margin % x Inventory Turnover) has supplanted the actual GMROI calculation in practice. It is easy to grasp the resulting GMROI figure and its two components simultaneously.

With the two components, management can begin to make decisions about how the GMROI on different SKUs can be increased. Again, management has a two-pronged tool (or two financial levers) to work with in improving GMROI for every SKU—generating a higher gross margin percentage or a higher rate of inventory turnover.

In practice, this two-pronged tool usually comes to an ignominious end. This is because most SKUs are quickly relegated to one of two camps—low margin/high turnover or high margin/low turnover.

**Low Margin/High Turnover**—The prevailing view is that low margin merchandise is low margin for a very good reason—it is price sensitive. As a result, there are limited opportunities for enhancing margin or possibly even no opportunities at all. Consequently, the key to success is to find ways to raise inventory turnover to an even higher level.
However, these items inherently have a high turnover rate. As a result, the logic behind attempting to “do even better when you are already doing pretty good” may seem a little strained. However, if the items really are extremely price competitive, there may be no other choice.

**High Margin/Low Turnover**—For these items the reverse thought process prevails. Since the items tend to be slower selling, it is very difficult to increase the inventory turnover. Buying even the minimum quantity from a supplier may result in a six month supply which kills turnover.

However, such items are probably a lot less price sensitive than the tonnage items. As a result, the GMROI emphasis here is to increase the gross margin percentage. It is once again a case of trying to “do even better when you are already doing pretty good.” However, if management faces a constrained decision set (because producing a higher inventory turnover rate is not a realistic option), then there is no other choice.

Overlaying all of the discussion about both an absolute yardstick and a two-pronged tool is an assumption that such careful planning is valuable. The next section will look at whether GMROI is of real value in either case. To do so requires delving into some rather detailed, and hence probably very unpleasant, financial analysis.

**Return on Investment Bias**

The theory behind GMROI is commendable. The problem with GMROI is that the computations involved tend to produce a very distorted picture of the return on investment actually being generated on different items. The problem starts with inventory turnover.

**Inventory Turnover Bias**

Criticizing inventory turnover is somewhat akin to criticizing apple pie and motherhood. Inventory turnover is simply the measure of inventory productivity with nothing else even in second place. However, turnover really isn’t a very good ratio for analyzing inventory performance.

Understanding why this is so requires a look at **Exhibit 1**. The exhibit presents the merchandising results for two SKUs. To prove that financial analysts are capable of high levels of creativity, these items have been brilliantly labeled as Item A and Item B.
Before getting too deep into Exhibit 1, assume that only two things are known about the items. First, they both have an inventory investment of $10,000. Second, Item A generates sales of $50,000 and Item B does just slightly better and generates sales of $55,000. At this point, absent anything else, Item B looks better. For the same level of investment, Item B generates more sales volume.

The additional information shown in Exhibit 1 makes the analysis a lot more complex and a lot more interesting. Item A appears to be a price-sensitive item, with a gross margin of only 15.0%. In contrast, Item B is a much higher gross margin item, coming in at 30.0%. If Item B has slightly more sales and a substantially higher gross margin percentage, then nobody should really need a financial ratio to know that Item B is mom’s favorite child.

However, this is where the bias in inventory turnover comes into play in dramatic fashion. In trying to evaluate inventory productivity, the inventory turnover ratio actually suggests that Item A is superior to Item B.

Specifically, Item A produces a turnover of 4.3 times versus only 3.9 times for Item B. The reason is that inventory turnover does not measure how effective an item is in generating sales in relationship to its inventory. Instead, it measures how much cost of goods sold is produced on each dollar of inventory.

This means that anytime two items have the same inventory investment, the item with the lower gross margin percentage will always have a higher rate of inventory turnover. The low gross margin item is not performing better, it is simply being credited with performing better.

This inherent problem with inventory turnover will also haunt GMROI. Inventory turnover always makes low gross margin items look better than high margin ones. As a result, GMROI also overstates the performance of low gross margin items and understates the performance of high margin ones. It is a fatal flaw.
The Bias in GMROI

To get a feel for how GMROI is biased, it is necessary to move to Exhibit 2 and to Items C, D and E. As the exhibit indicates, these three items all have identical sales levels. However, they are very different in terms of both their gross margin and inventory investment.

Item D in the middle has been designated as typical. It has a gross margin of 25.0% and an inventory turnover of 6.0 times. To understand what is happening in the firm, it is necessary to know that Item D really is exactly typical. That means the total firm also has a gross margin of 25.0% and turns its inventory 6.0 times per year. Item D is a microcosm of the total firm.

Item D is flanked by two items with somewhat unique characteristics. Item C generates 20.0% more gross margin dollars than Item D on the same sales, but requires a 20.0% larger investment in inventory. It is a classic high margin/low turnover SKU. Finally, Item E is the mirror-image of Item C and has 20.0% fewer gross margin dollars than Item D, but requires a 20.0% smaller investment in inventory. It is in the low margin/high turnover camp.

### Exhibit 2

**GMROI Results for Three SKUs**

<table>
<thead>
<tr>
<th>Dollars</th>
<th>Item C</th>
<th>Item D</th>
<th>Item E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High Margin</td>
<td>Typical Item</td>
<td>Low Margin</td>
</tr>
<tr>
<td></td>
<td>High Inventory</td>
<td>Item</td>
<td>Low Inventory</td>
</tr>
<tr>
<td>Net Sales</td>
<td>$50,000</td>
<td>$50,000</td>
<td>$50,000</td>
</tr>
<tr>
<td>Cost of Goods Sold</td>
<td>35,000</td>
<td>37,500</td>
<td>40,000</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>$15,000</td>
<td>$12,500</td>
<td>$10,000</td>
</tr>
<tr>
<td>Average Inventory</td>
<td>$7,500</td>
<td>$6,250</td>
<td>$5,000</td>
</tr>
<tr>
<td>Inventory Turnover</td>
<td>4.7</td>
<td>6.0</td>
<td>8.0</td>
</tr>
</tbody>
</table>

**Percent of Sales**

<table>
<thead>
<tr>
<th></th>
<th>Net Sales</th>
<th>Cost of Goods Sold</th>
<th>Gross Margin</th>
<th>GMROI (GM% x Turnover)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item C</td>
<td>100.0 %</td>
<td>70.0</td>
<td>30.0 %</td>
<td>140.0 %</td>
</tr>
<tr>
<td>Item D</td>
<td>100.0 %</td>
<td>75.0</td>
<td>25.0 %</td>
<td>150.0 %</td>
</tr>
<tr>
<td>Item E</td>
<td>100.0 %</td>
<td>80.0</td>
<td>20.0 %</td>
<td>160.0 %</td>
</tr>
</tbody>
</table>
GMROI as an Absolute Yardstick—As an absolute measure, GMROI is almost always used as to identify problem items. It is a “where should we worry?” sort of ratio. The answer, based upon GMROI, is to worry about the items with the lowest return. In Exhibit 2 this turns out to be Item C. At the extreme, Item C might even be considered a candidate for elimination given its low GMROI. If not a candidate for elimination, at least a candidate for corrective surgery.

However, Item C actually produces the most gross margin dollars of the three items shown. Since gross margin dollars are what are used to pay expenses and generate a profit, this would seem to be a very desirable item.

At the other extreme, Item E with the highest GMROI would be designated as a superstar item. It is the sort of item that management might want to emphasize in its marketing programs. The firm would try to sell all it can to enjoy the benefits of the item’s great GMROI. Realistically, though, emphasizing Item E is not just a problem, it is a threat to the firm’s profitability.

It should be remembered that this company has an overall gross margin of 25.0%. If the company is like a lot of distributors, it has a pre-tax profit margin of around 3.0%. This makes the cost of running the company somewhere around 22.0% of sales (Gross Margin of 25.0% minus Profit Before Taxes of 3.0%).

Making the gigantic leap that all three items have about the same cost structure (they are all in the same, narrow merchandise category), then Item E could be well under water. Item E produces a 20.0% gross margin but incurs expenses of 22.0%. From a GMROI perspective, Item E should be emphasized in sales efforts. From a profit perspective, though, the more the firm sells of Item E, the more it will lose.

GMROI as a Two-Pronged Tool—Management does not just look aghast at some items and worship others; management takes actions to improve results. Supposedly the firm has two levers to drive profitability—improving the gross margin percentage or improving the inventory turnover. If these levers were equally strong, then either lever would be appropriate. However, the levers are not of equal strength.

Inventory turnover, as a financial lever, is an 80 pound weakling having sand kicked in its face at the beach. Gross margin is an 800 pound gorilla about to carry Fay Wray off into the night. This difference in the relative strength of these two prongs of the GMROI tool is critical.

In Exhibit 3, the company is considering two options for good old Item E which was first introduced in Exhibit 2. As a reminder, Item E was the one with a low gross margin percentage and a high rate of inventory turnover. It was also the one that had the highest GMROI. Item E is already the superstar, but management has decided to make it even more glamorous.
The first column of numbers in Exhibit 3 shows Item E where it now is. The last two columns have two options for improvement. One option on the table for Item E is to reduce the inventory by 10.0%, the other is to increase the margin dollars by 10.0%. At this point, don’t worry about how either of these actions will be accomplished, or even if they can be accomplished. Focus solely on the profit and GMROI results that are produced if the two plans come to fruition.

In the inventory reduction column, inventory is lowered by exactly 10.0%, or by $500. Assuming a 24.0% inventory carrying cost (an obscenely high number, but that is another discussion), then the cost savings associated with the inventory reduction is only $120. This represents a big change in the investment level for the item, but only the most modest of profit improvements.

Four lines up from the bottom, the exhibit introduces a half-apples, half-oranges concept called total profit impact. This is the gross margin for the item plus any costs savings that arise from management actions. It is a slightly flaky concept, but it illustrates the profit impact quickly. With an inventory reduction the total profit impact is now $10,120 (the gross margin of $10,000 which is unchanged plus the $120 in cost savings) versus the $10,000 previously.

In the final column the gross margin dollars are increased by 10.0%. To keep the exhibit simple, sales are held constant and the gross margin improvement is assumed to come from more advantageous buying. The result is that the total profit impact from a gross margin improvement is $11,000.

In short, there is a much larger profit impact from increasing gross margin than there is from reducing the level of inventory. The two profit levers in the GMROI model are not even close to equal.

Wait! Things can get worse. From a GMROI perspective, reducing inventory is actually better than increasing the gross margin percentage. The GMROI after the inventory reduction is 177.8%, while the GMROI from increasing margin is only 171.6%. In both cases GMROI went up, but the weaker of the two levers gets credit for better performance.

Rather than continuing to beat what appears to be a very tired, if not already dead, horse, it is best to summarize. GMROI will always make low gross margin items look better than they are and make high gross margin items look worse than they are. It will also almost always make actions that produce small profit improvements look good and actions that make large profit improvements look bad. Other than that, it is absolutely perfect.
A New Tool For Decision Making

It is easy to conclude that GMROI is an inadequate tool for decision making regarding pricing and inventory decisions. Coming up with a replacement that really gets at profitability moves the firm to a much higher degree of complexity of understanding and a much higher degree of difficulty of use.

GMROI was developed in the department store industry in the years before World War II. It was designed as a profit tool in an era when data processing was a figment of imagination. Consequently, it was designed to be as simple and easy to calculate as possible. As an added bonus, it was also extremely easy to understand.

With the dramatic increases in information technology in recent years it is now possible for firms to move beyond simply looking at inventory turnover and gross margin. It is possible to use Activity Based Costing to measure what is commonly called Direct Product Profit (DPP).

DPP measures the actual dollar profit that is being generated by every SKU, every merchandise category, every department or even every vendor. Unlike GMROI, its value is not diminished as items are aggregated. It moves the firm into an era of much greater sophistication and much greater precision. However, precision comes at a cost.

Exhibit 3
Two Profitability Options for a Single SKU (Item E)

<table>
<thead>
<tr>
<th></th>
<th>Current Results</th>
<th>10% Less Inventory</th>
<th>10% More Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Sales</td>
<td>$50,000</td>
<td>$50,000</td>
<td>$50,000</td>
</tr>
<tr>
<td>Cost of Goods Sold</td>
<td>40,000</td>
<td>40,000</td>
<td>39,000</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>$10,000</td>
<td>$10,000</td>
<td>$11,000</td>
</tr>
<tr>
<td>Average Inventory</td>
<td>$5,000</td>
<td>$4,500</td>
<td>$5,000</td>
</tr>
<tr>
<td>Inventory Reduction</td>
<td></td>
<td>$500</td>
<td></td>
</tr>
<tr>
<td>Inventory Carrying Cost Reduction</td>
<td></td>
<td>$120</td>
<td>$0</td>
</tr>
<tr>
<td>(24% of the Inventory Reduction)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Profit Impact</td>
<td></td>
<td>$10,120</td>
<td>$11,000</td>
</tr>
<tr>
<td>(Gross Margin plus Cost Savings)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory Turnover</td>
<td>8.0</td>
<td>8.9</td>
<td>7.8</td>
</tr>
<tr>
<td>Gross Margin Percentage</td>
<td></td>
<td>20.0 %</td>
<td>22.0 %</td>
</tr>
<tr>
<td>GMROI</td>
<td>160.0 %</td>
<td>177.8 %</td>
<td>171.6 %</td>
</tr>
</tbody>
</table>
GMROI, despite its myriad problems, is elegantly designed. It involves one, easy to comprehend, return on investment number. It combines this with two, easy to identify, ways to improve results. There is no confusion about what is being measured or how to go about making the number better.

Moving to a DPP system presents the management team with a detailed understanding of how much profit each item is generating. It also opens up an almost endless array of potential solutions for improving profit.

**Exhibit 4** is designed to reflect the complexity that DPP entails. The exhibit continues the relentless march through the alphabet to Items F and G. Item F is a tonnage product that generates lots of sales, but a paucity of profit. Item G is a classic niche item with minimum sales and strong profits. Item G, despite its lower sales volume, actually produces more dollar profit than Item F.

While Exhibit 4 presents a more complex world than does GMROI, it also demonstrates the two major advantages of DPP. First, goals can be set. Second, the firm is no longer limited to two financial levers. Instead, there are numerous attack points with the potential to improve results.

**Exhibit 4**

**A Direct Product Profit Analysis for Two SKUs**

<table>
<thead>
<tr>
<th>DPP Analysis</th>
<th>Item F</th>
<th>Percent</th>
<th>Item G</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Sales</td>
<td>$10,000</td>
<td>100.0 %</td>
<td>5,000</td>
<td>100.0 %</td>
</tr>
<tr>
<td>Cost of Goods Sold</td>
<td>7,500</td>
<td>75.0</td>
<td>3,500</td>
<td>70.0</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>2,500</td>
<td>25.0</td>
<td>1,500</td>
<td>30.0</td>
</tr>
<tr>
<td>Direct Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory Carrying Costs</td>
<td>250</td>
<td>2.5</td>
<td>150</td>
<td>3.0</td>
</tr>
<tr>
<td>Commissions</td>
<td>300</td>
<td>3.0</td>
<td>150</td>
<td>3.0</td>
</tr>
<tr>
<td>Stocking Costs</td>
<td>50</td>
<td>0.5</td>
<td>20</td>
<td>0.4</td>
</tr>
<tr>
<td>Order Picking Costs</td>
<td>150</td>
<td>1.5</td>
<td>50</td>
<td>1.0</td>
</tr>
<tr>
<td>Order Processing Costs</td>
<td>25</td>
<td>0.3</td>
<td>15</td>
<td>0.3</td>
</tr>
<tr>
<td>Total Direct Expenses</td>
<td>775</td>
<td>7.8</td>
<td>385</td>
<td>7.7</td>
</tr>
<tr>
<td>Direct Profit Profit</td>
<td>1,725</td>
<td>17.3</td>
<td>1,115</td>
<td>22.3</td>
</tr>
<tr>
<td>Assigned Overhead (% of Sales)</td>
<td>1,600</td>
<td>16.0</td>
<td>800</td>
<td>16.0</td>
</tr>
<tr>
<td>Profit Before Taxes</td>
<td>$125</td>
<td>1.3 %</td>
<td>$315</td>
<td>6.3 %</td>
</tr>
</tbody>
</table>

**Goal Setting**—The buyer using DPP is no longer restricted to “higher is better than lower.” Instead, highly specific profit targets can be set. If the entire firm is producing a pre-tax profit of 3.0%, then item F cannot just be described as low, it is possible to measure how low. It is 1.7 percentage points below the profit level of the entire firm. In sharp contrast, Item G is producing twice the profit margin of the total firm.
**Attack Points**—The buyer is no longer simply limited to raising margins or increasing the inventory turnover. The buyer has numerous options, ranging from sales through expenses. In Exhibit 4 there are at least six options:

- Increase the sales to spread expenses over a larger volume.
- Raise the gross margin percentage.
- Lower inventory to reduce inventory carrying costs.
- Re-think the commission plan to lower sales expenses.
- Adjust the buying pattern so that stocking costs are lowered.
- Change the sales pattern so that order picking costs and order processing costs are both reduced.

While having numerous attack points is a wonderful advantage, it also creates some problems. The buyer who once only had to deal with two options for improvement with GMROI (gross margin and inventory turnover) is suddenly confronted with a veritable smorgasbord of options.

The complexity of DPP is most apparent on the expense side. This particular analysis incorporates five specific expense items. Depending upon the approach used, DPP may look at three to seven different expense factors.

It is a brave new world of complexity. It is no longer possible to simply throw all of the low margin items in one pile and all of the low turnover items in another. There are no longer only two levers, there are multiple levers. Improving the profit of a single item necessitates a lot more work.

When the work associated with improving one SKU is multiplied by 10,000 SKUs, the complexity becomes almost unimaginable. Gaining precision at the expense of simplicity is a trade-off that many managers will not enjoy. Increased training may be required. In some instances, the replacement of some of the buying staff may be necessary as well.

The key issue is the extent to which imprecision should be tolerated simply because it is easy to understand. DPP makes life decidedly more complex, but it increases the power to understand profit at the item level exponentially. It also allows such understanding at every level of the firm, all the way from individual SKUs through entire departments. It can also be applied as a tool for working with merchandise suppliers.

If every firm in a specific line of trade in distribution continues to use GMROI, then it is a clear case of no harm, no foul. Everybody will be making the same decisions in the same way. Nobody has an advantage.

However, as individual firms begin to use DPP, they now have a much more powerful set of tools at hand. Those tools are unbiased, allow for setting of goals...
and can be used throughout the firm. DPP has the potential to provide a major competitive advantage.

To continue to use ratios such as GMROI when others have switched to something like DPP is to continue to manage inventory with 20th century technology when others have joined the 21st century. It appears to be time for something new.