

Printing Industries of America



**CENTER FOR PRINT
ECONOMICS
AND MANAGEMENT**

PRINT MANAGEMENT ALERT

**Aiming High and Aiming Low:
Managing by Quartiles for Improved Performance**

Dr. Ronnie H. Davis,
Senior Vice President and Chief Economist
Center for Print Economics and Management

Aiming High and Aiming Low: Managing by Quartiles for Improved Performance

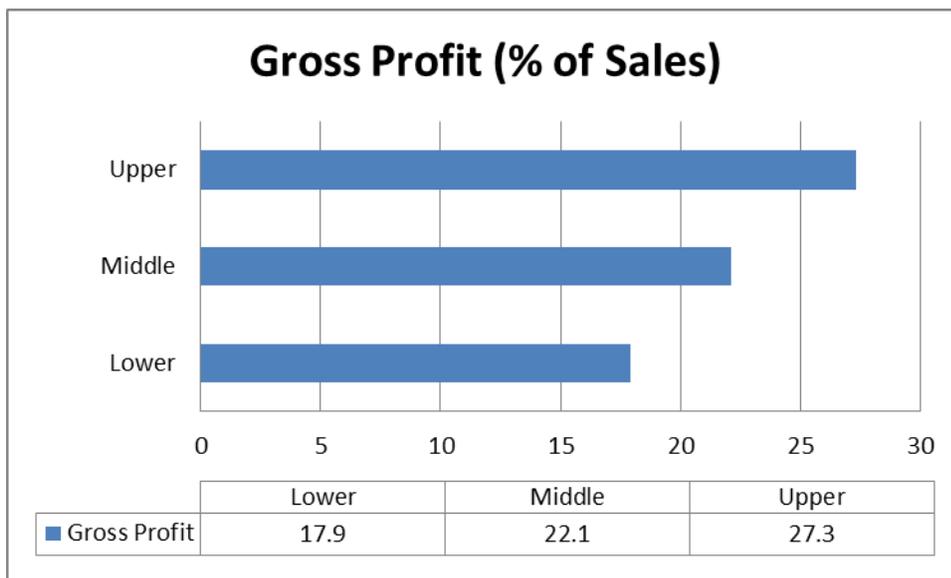
To manage something, you first need to measure it. This old saying is certainly true; however, even after the measurement there is still a need for specific targets for the metric being measured. This *Management Alert* focuses on this topic—targeting specific metrics for improving performance. In Part I, we examine metrics where we need to aim high—the higher the better. In a later *Management Alert*, we will examine metrics where we need to aim low—the lower the better. In each part we utilize first-, middle-, and third-quartile metrics from the most recent PIA *Ratios* for our analysis.

Managing by metrics encompasses a four-stage continuous improvement process:

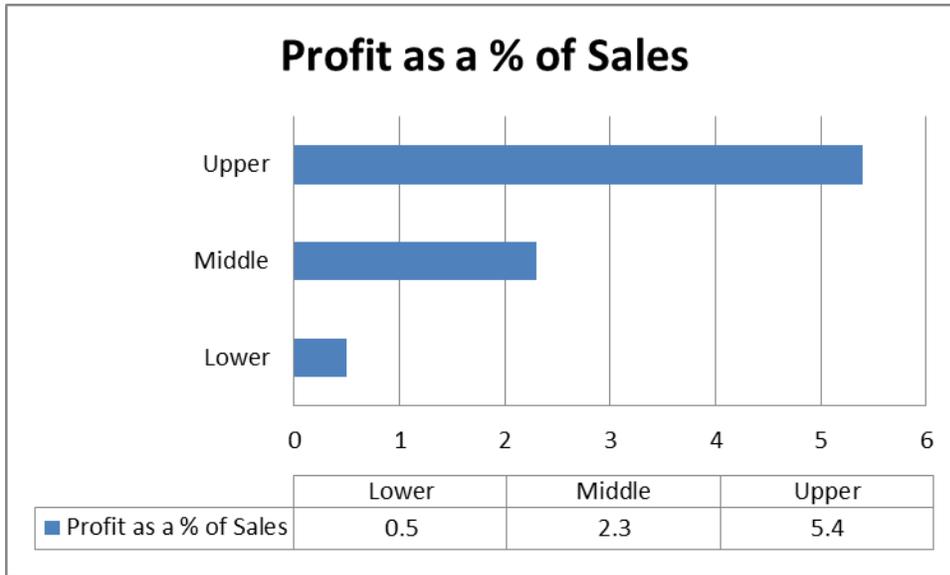


We have selected ten metrics for aiming high and seven for aiming low. You do not necessarily need to utilize all ten metrics since some of them overlap, but you should select at least two or three to consistently measure and use for management purposes.

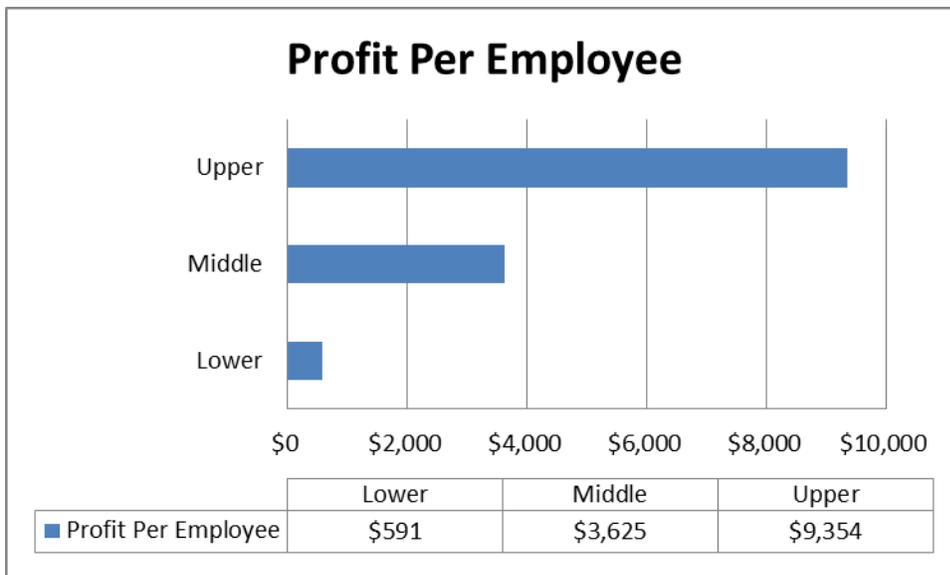
Gross Profit on Sales—Gross profit on sales is equal to total sales minus total cost of goods sold divided by sales. It is the mirror image of cost of goods sold as a percent of sales. As shown in the chart, printers in the upper quartile enjoy an almost 10-percent-of-sales advantage over lower-quartile competitors. Printers targeting this metric will focus on lowering their cost of goods sold by decreasing their manufacturing costs.



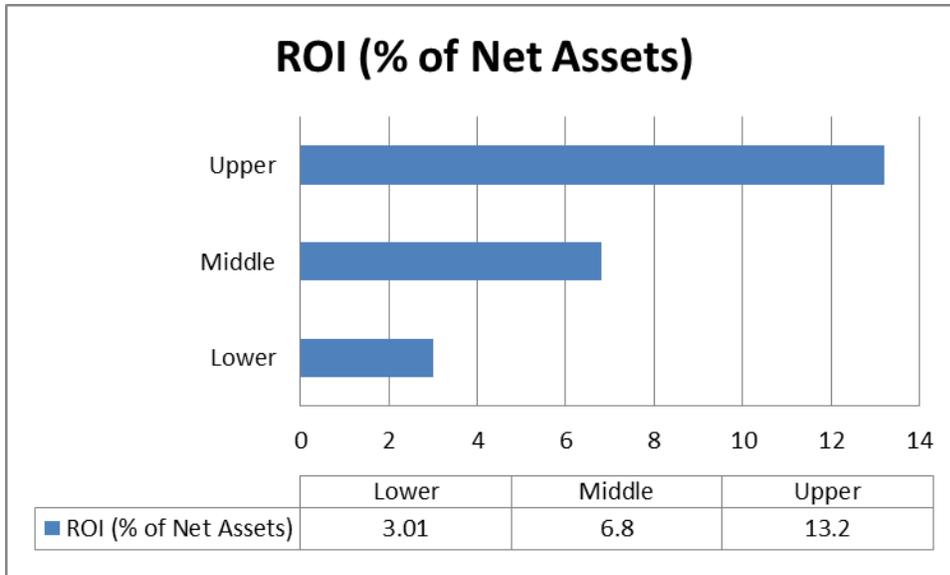
Profit on Sales—Printers reaching the upper quartile on this metric earn almost five percent more on their sales than lower-quartile printers. Note that the upper-quartile figure is still below the profit-leader metric since the profit-leader category is the average of all printers in the upper quartile as opposed to the profit rate that just reaches the upper-quartile point.



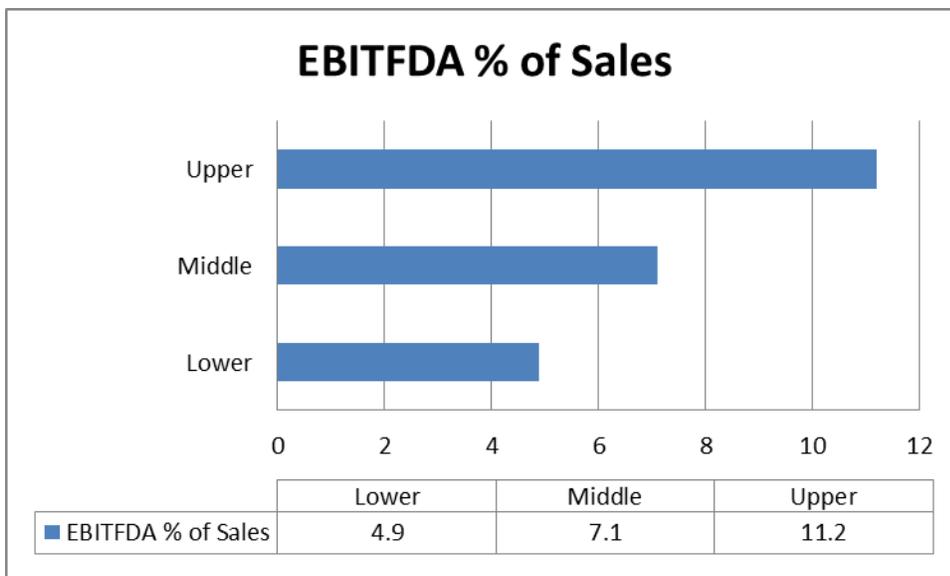
Profit per Employee—There is a whopping difference in profit per employee between the upper and lower quartile—almost \$9,000 per employee. As we have previously indicated, the primary reason for this is that high-profit printers use fewer employees to achieve the same amount of sales by substituting capital (machinery and equipment) for labor.



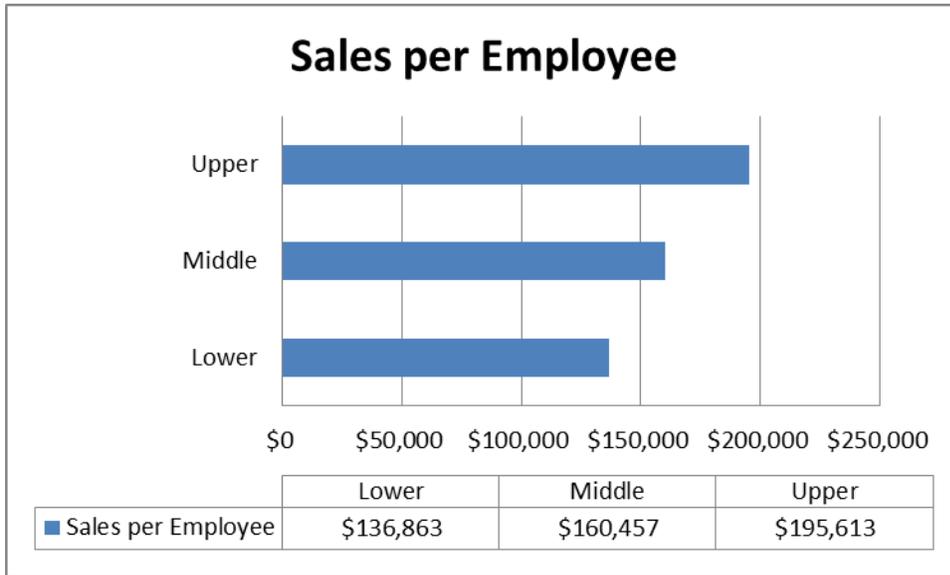
Return on Investment—Our ROI metric measures profit before income taxes as a percent of net investment from the balance sheet. Upper-quartile printers earn approximately four times the rate of ROI as lower-quartile competitors.



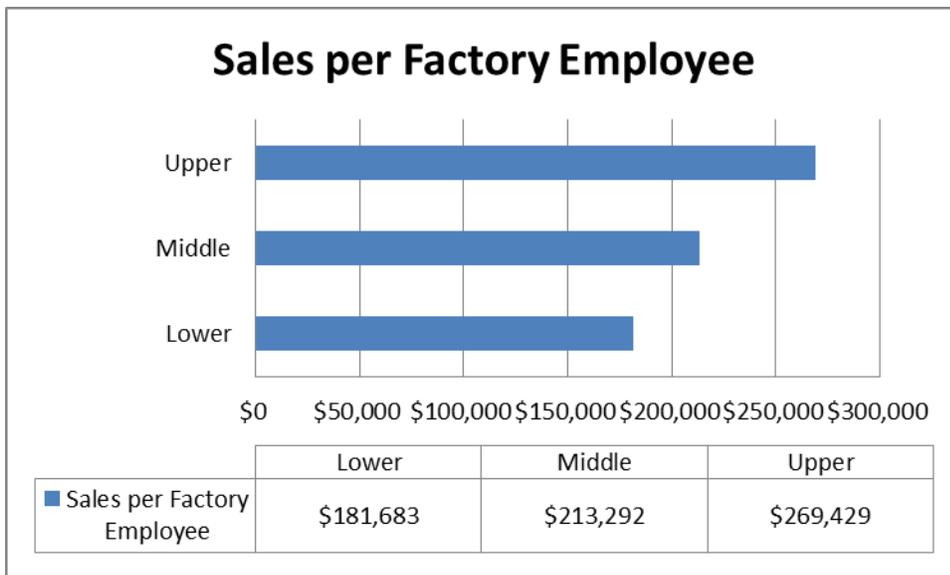
EBITFDA as a Percent of Sales—EBITFDA includes earnings before interest, income taxes, factory depreciation, and amortization and is a measure of cash flow that is often used in calculating the value of a printing firm. A slight difference in EBITFDA can make a major difference in value. Upper-quartile firms enjoy a more than two-to-one advantage in this metric.



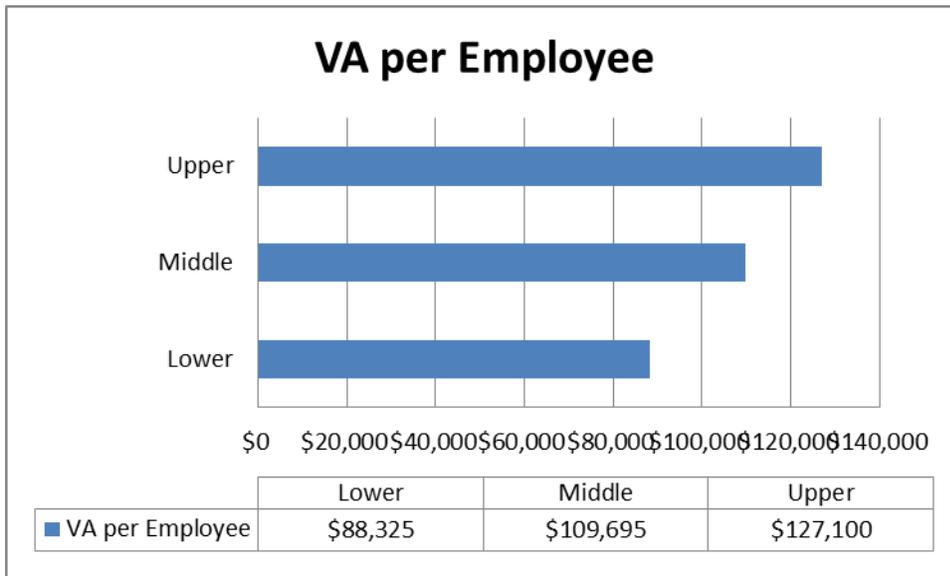
Sales per Employee—Upper-quartile printers produce almost \$60,000 more in sales per employee than lower quartile-printers. How? As indicated above, the primary reason is that they produce the same or more sales with fewer employees. Other reasons include higher value-added ratios, higher sales prices, and savings in other cost areas.



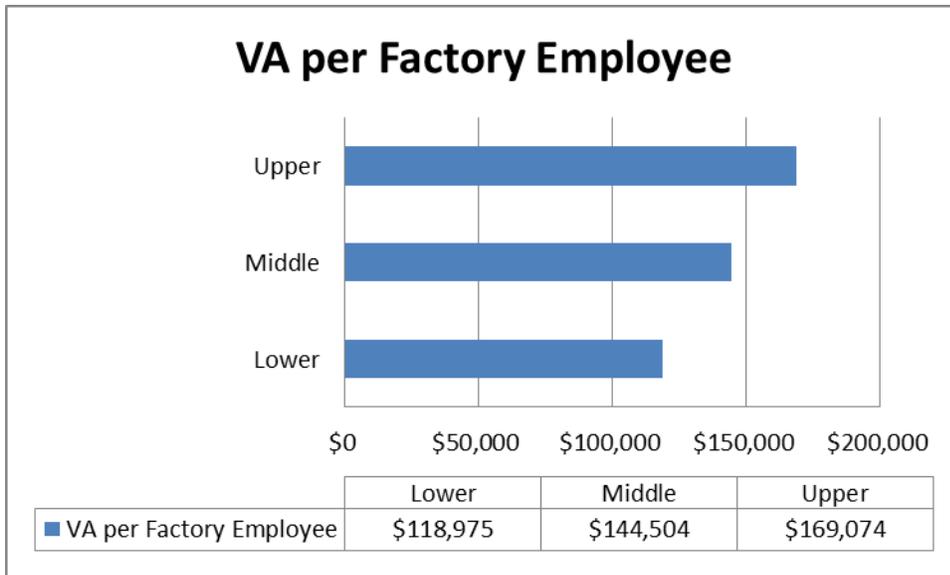
Sales per Factory Employee—Upper-quartile printers benefit from almost \$88,000 more in sales per factory employee than lower-quartile printers—almost a 50-percent advantage. Again, this advantage reflects a leaner, more efficient factory operation that uses less labor and more capital.



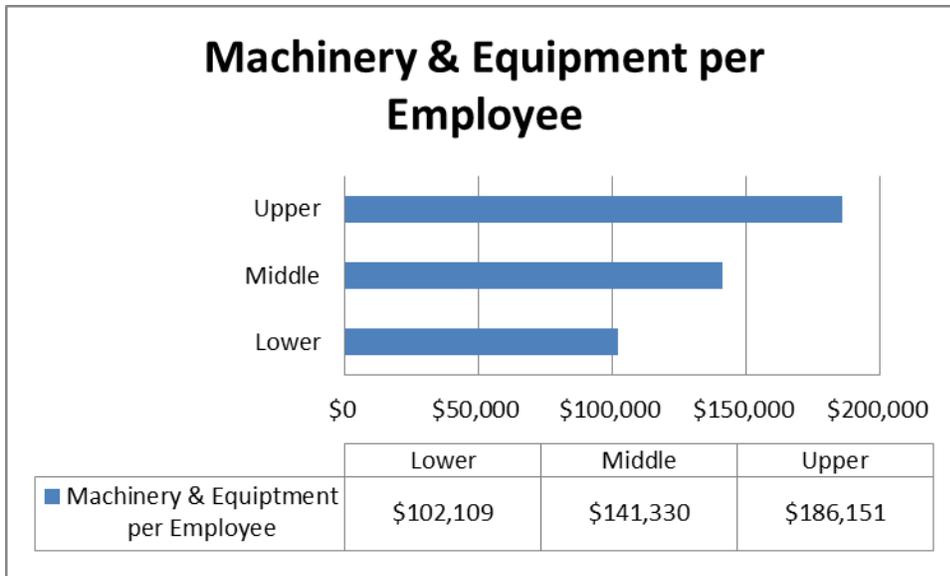
VA per Employee—Upper-quartile printers experience a similar advantage in value added per factory employee—around \$29,000 per employee or a margin of about one-third.



VA per Factory Employee—For value added per factory employee, the advantage for upper-quartiles printers versus lower-quartile printers is about \$50,000 or more than 40 percent.



Machinery and Equipment per Factory Employee—Our last aim-high management metric differs somewhat from the others. For the others, the correlation with profitability is more direct. For the machinery-and-equipment-per-factory-employee metric, the linkage is less direct but still strong as our research has shown a consistent correlation between the bottom line and capital invested in the factory floor. Upper-quartile printers provide their factory employees about \$84,000 in additional machinery and equipment compared to lower-quartile printers—an advantage of around 80 percent in terms of productivity.



Select Your Key Metrics

So how do you aim high? Select a few of the above ten metrics for your management focus. Define how you calculate each one, collect the data, and establish management and operational practices to raise your targets. You can obtain specific data points on these metrics from the 2017–2018 PIA *Ratios* report for your particular peer groups—by printing processes, print market segments, or annual sales volumes. Check the PIA Online Store for your volumes.

Another option is to have staff from PIA’s *Center for Print Economics and Management* perform a customized Profit Booster for you. This confidential service is an inexpensive and non-intrusive profit booster used by many PIA members.

In an upcoming *Management Alert*, we will examine how to aim low and increase your performance with our set of seven aim low metrics.