

White Paper

TOTAL COST OF OWNERSHIP

Analyzing the Future Operating Costs of
Grand Format Printing Equipment

WHAT IS TOTAL COST OF OWNERSHIP?

As profit margins in the printing industry narrow, it is increasingly important to have a better understanding of actual costs, both immediate and throughout the life of a printer. It is not enough to look at the sticker price of equipment, because production and running costs are as important as the purchase price. Investing in a less expensive machine may end up costing significantly more per year in production costs over the more expensive machine, negating the initial savings in as little as one year.

The concept of Total Cost of Ownership takes a more holistic approach to comparison shopping. By looking at all the variables of running each machine over a 5-year period, a much clearer picture of their actual cost develops.

To calculate a printer's Total Cost of Ownership you need to fully understand four key variables: ink cost, labor cost, build quality, and machine price. For example, if you calculate your overall costs for printing 50,000 square feet per month for five years on a specific printer, you can make a more informed decision.



“It’s been a disservice to our industry that there hasn’t been more education on this topic. At Global, we really want our customers to be educated and to make the most informed purchase possible.”

GREG LAMB
CEO, GLOBAL IMAGING

INK COST

How accurate are your ink cost estimates?

Today's printers and RIP software will show you exactly how much ink you use. It is common for a printing company to believe that they are consistently achieving the cost per square foot that they were given by the manufacturing representative. But unfortunately, many business owners get the unpleasant surprise that they are using twice the ink that their cost model was built upon.

There may have been times at the beginning of the life of the printer that it was running at the initial quoted rate, but there are many factors that greatly impact that number so it is prudent to know how these numbers can change and to check them regularly. This discrepancy affects not only costs in printing operations, but if your company is selling projects based on incorrect ink assumptions you could be undercharging due to an inaccurate cost basis.

Do you really need eight colors?

Printers that use unnecessary colors are also a source of hidden costs. Are you questioning whether those 8 colors are really essential, or are extra colors a method manufacturers use to sell more ink? With today's advances in print head technology, we believe you don't need the extra colors. An 8-color printer is less efficient and less economical than a 4- or 6-color printer that produces comparable, if not superior, results.



HOW MUCH INK ARE YOU THROWING AWAY EVERY YEAR?

The frequency and amount of ink purging weighs heavily on the cost of running a printer. There are real consequences if a manufacturer doesn't develop the highest quality ink delivery system or properly configure the ink for the print heads.

Are ink purges a regular event instead of a once-per-shift maintenance item? Each purge can use 100ml of ink and cost \$6 to \$7 per purge. If your printer requires purging every 5 to 8 boards, how much does that cost? This is important to factor into your overall operating costs.

LABOR COST

Does the printer require labor at all times?

If you can't hit print and walk away, then another cost consideration is your labor rate, which could be \$25-\$35 per hour. Second- or third-shift operations can have extensive labor costs if the equipment isn't reliable enough to run unattended. Paying labor overnight to sit with the machine and change rolls or purge the print heads can add up to well over \$250,000 over the course of five years.*

Printers that can run overnight without supervision can achieve true lights-out automation. If you could print 16,000 square feet overnight with no one checking heads or changing rolls, how would that impact your cost per print?



PAYING LABOR OVERNIGHT
TO CHANGE ROLLS OR PURGE
PRINT HEADS CAN COST
OVER \$250,000
OVER THE COURSE
OF FIVE YEARS.*

BUILD QUALITY

How robust is the platform?

When examining the build quality of a machine, we analyze the frame, the beam and the drive system. Some manufacturers are known to create a new generation of devices by expanding upon an existing product line, adding print heads with the desire to increase print speeds. This results in a larger and heavier carriage than was used on the previous generation. Since the beams on these legacy platforms were engineered to support a smaller, lighter carriage, the weight of the new carriage isn't sufficiently supported and causes problems like inconsistent carriage alignment and excessive vibration. When a carriage cannot sit level over the platen, drop placement accuracy will suffer and print quality declines.

On the other hand, other manufacturers engineer printer frames to weigh 2 or 3 times as much as competing technologies, using a beam engineered specifically for the weight and speed of the carriage. A lighter, less sturdy printer is inherently disadvantaged in comparison.

How quickly will the printer degrade?

Build quality is essential for the longevity of the printer but can also affect productivity. In as little as two years, some machines will require slower print speeds and heavier smoothing to make up for the chatter and vibration caused by degradation of the beam, servo and drive motor. This chatter and vibration can prevent nozzles from jetting accurately which causes image defects. Over time you'll need to slow the printer down and do more passes to cover up these flaws.

A slow decline in the number of square feet a machine can produce year over year, as well as the demand for more ink to compensate for degrading print quality, are significant yet often hidden factors in calculating total cost.

JOB COMPARISON

Let's do a simple comparison between Printer A and Printer B, assuming the sale price of Printer A is \$200,000 less than that of Printer B.

Over time, the less expensive Printer A will have to be run at a slower speed to compensate for poorer build quality. It can produce 20 boards per hour while Printer B can produce 40. At \$3.00 per square foot, this amounts to more than \$15,000 per day in lost revenue and a potential annual loss of millions of dollars.

The solution now is to either add another shift (adding more labor cost), or adding another printer, which more than offsets the lower initial sales price.



	Printer A	Printer B
Boards /hour	20	40
Boards /shift	160	320
Revenue /day*	\$15,360	\$30,720

* Calculated at 8 hours per shift, one shift per day with revenue of \$3.00 per square foot.

MACHINE PRICE

What is the initial investment?

The initial investment is, of course, a consideration when purchasing any piece of equipment, but not as impactful as you might have first thought. While the price of a printer is important, the cheaper machine is no longer the obvious choice after calculating ink consumption, labor, productivity and uptime over the life of the printer. Once you understand the year-over-year cost of ownership you can see that you truly get what you pay for.

When compared to a printer that costs \$200,000 less up front, a more expensive printer that won't degrade over time will save you hundreds of thousands of dollars in productivity, labor and revenue over the first few years of ownership. It then becomes obvious that the investment in the higher priced printer makes you much more money in the long run. Your investment pays off quickly.

ADDING IT ALL UP

Understanding all the variables that go into the cost of owning a printer is key to the philosophy of Total Cost of Ownership. Accurately calculating costs over the life of the printer helps us make better equipment investment decisions and allows companies to confidently plan for the future. If you know your printer is reliable for lights-out automation you can plan ahead to reduce staffing

and make your pricing more competitive. The entire business model for a printing company can shift based on the machines they invest in. That's why considering all the aspects of Total Cost of Ownership is so crucial.

At Global Imaging, we want to make sure our clients understand all these factors so they can make the best investment for their company. We walk through each feature and look at how those factors change year over year to create the best comparison between machines. As part of our Global Insight ROI Reporting, a Total Cost of Ownership analysis will give you the necessary insight to know that your next investment will pay off.

[HELP ME FIND MY TOTAL COST](#)