



Determining ROI and Profit Opportunities in Wide-Format Printing

White Paper Series

A horizontal blue bar with a gradient and a slight shadow effect, spanning the width of the page below the 'White Paper Series' text.

With sustained year-over-year growth in the sign and display graphics business, wide-format digital inkjet printing remains a strong and attractive profit opportunity for printing companies. Many print providers are bolstering their product offering with wide-format inkjet to expand their existing customers' marketing mix into signage and large graphic applications, while others seek opportunities

to attract new customers with the capability of producing high-quality, high-margin graphics on demand.

Acquiring a new digital inkjet printer, however, is a significant investment that must be closely examined. It is important to analyze the real costs of a wide-format printing device, the ways it will impact your return on investment and, ultimately, drive profitability.

Factors That Will Impact Your ROI and Bottom Line

The first step involves evaluating the current state of your business and your existing production platform(s). If you are like many print providers, you likely have some form of digital inkjet, or perhaps you already are an all-digital shop. But all-digital output devices are not created equal. There are a number of considerations when selecting wide-format equipment or determining whether to upgrade your existing fleet. Several high-level factors will affect your investment decision, including the following:

- Hard costs
- Ink factors
- Capacity/Volume
- Environmental considerations.

Hard Costs Are Just the Beginning

Acquisition Cost

For many businesses considering a major investment, the natural inclination is to look for the best deal. But as with a vehicle purchase, the least costly option is not always the best investment. Your return on investment (and ongoing profitability) is based on more than initial cost. When looking at wide-format inkjet printing, consider the types of jobs you will produce, how many square feet per hour you'll need to print, the quality of the output, how many colors are available and what types of inks are used. All will factor into the decision about which printer or printers to purchase.

The most important factor in a decision of this nature, however, should not be how many square feet per hour you could produce but how much profit you can make selling each square foot. While printer throughput is an important factor to consider, production capacity that you won't use or will have to heavily discount will erode the value of your purchase. This calculation correlates with how many hours of production per day or per week are required to achieve a reasonable return on investment. Ensure that the equipment pays for itself as quickly as possible based on a level of work that you can reasonably expect to win.

Let's examine a conservative example of an ROI calculation that you can use as a basis for building your own analysis.

EFI H652 ROI Example

The EFI H652 is an entry-level (to production printing) UV hybrid (roll-to-roll and flatbed) printer with low operating costs, CMYK plus standard white ink and variable drop grayscale capability (more on this later). It can produce up to 455 square feet per hour on flexible and rigid substrates up to 65 inches wide and 1.8 inches thick. With this information as a backdrop, take a look at the table below for a realistic ROI analysis with this printer as a basis.

	36 Months	60 Months
Interest Rate	7.99%	8.1%
H652 MSRP	\$115,000	\$115,000
Payment/Month	\$3,609.85	\$2,349.45
Payment/Day	\$171.90	\$111.88
*Sellable ft²/Day	58–172 ft ²	38–112 ft ²
**Hrs/Day	.6–1.7 hrs	.4–1.1 hrs

**Hours-per-day calculation is based on printing in high quality mode at 80% utilization

According to data collected from customers using the device, profit for printed output from the EFI H652 ranges from \$1 to \$3 per square foot for a mix of rigid and roll media. As you can see from the calculations above, break-even for covering the 36-month lease payment is as low as 58 square feet per day (172 square feet per day if the average profit is \$1 per square foot). This is calculated based on a single shift 20 days per month. It means that the break-even point can be achieved with less than one hour of production per day, with production over that volume going directly to the profit line. In this example, profit equals sellable price less the cost of substrate and ink.

As you examine a potential purchase, you can create a similar model, comparing various options on an apples-to-apples basis. It's important to develop this model as an expanded matrix, and attach a financial benefit or deduction for each feature/function as it pertains to your business needs. This method will ultimately tell you which device will drive profitability and the growth you've built into your business plan.

Ink Costs

Ink cost should be measured in square feet rather than liters because the actual cost of ink used is a critical factor

in the profitability of the operation. The price you pay per bottle, liter or ounce won't tell you the whole story on your profitability per print.

The type of ink used — aqueous, solvent or UV-curable — also plays into the overall picture in terms of ink consumption, production time, durability, application range and environmental considerations. For example, UV-curable inks quickly cure, or set, and are immediately dry and ready to move to the next step in the production process. This makes them durable and ideal for printing on the widest range of flexible materials as well as directly to rigid substrates. UV-curable inks offer many environmental advantages, too. However, UV inks are not the only or best answer for every application, so do your homework and understand how ink type affects your application scope.

Substrates

The mix of substrates for your new printer is another important consideration. Do you want to print on flexible, directly to rigid or both? Your response will narrow your search for the right printer platform.

As you examine specific printer technologies, factor in the sell versus buy price of the substrates you will be running. You can leverage more margins by reducing your substrate cost based on the technology you select. For example, UV allows you to use non-coated substrates, which generally cost less and allow you to widen your profit opportunity.

Also, consider whether weight is an issue, especially if materials are being shipped and you or the client wishes to reduce overall freight costs. Some printers offer LED curing, allowing the use of lighter-weight or heat-sensitive materials that can save you cost and your customer shipping fees. In addition to the financial advantages, your customer may be interested in reducing the carbon footprint associated with shipping.

The ability to print on heat-sensitive materials also opens the door to different applications with films and inexpensive boards that would otherwise warp or buckle during printing. Compared to other curing and drying methods, LED tends to require less energy, which adds up to real, and sometimes substantial, savings in operating costs.

Take waste into account as well. Consider the amount of

material waste you might normally expect to experience and the relative cost of substrates you can use.

Finishing

A product is not finished until it is finished! There are many finishing options for signs and display graphics, including various types of cutting, laminating and mounting devices. For instance, with a hybrid or flatbed printer, you can print directly on rigid substrates, taking time, cost and potential waste out of the finishing process. If you are upgrading or adding equipment — for example, moving from primarily solvent roll-to-roll to a UV-curable hybrid or flatbed printer — there are different finishing implications that you need to consider.

Consider your complete workflow carefully. You can often improve ROI and delivery time to customers by

making finishing purchases in parallel with the printing device purchase. The combination will often free up additional production time, reduce overtime and allow more just in time (JIT) output, further driving profits. One of the increasingly important factors to end-users/print consumers is speed of delivery (not speed of print), and proper workflow planning can help make turnaround time a for-profit sellable feature to the customer.

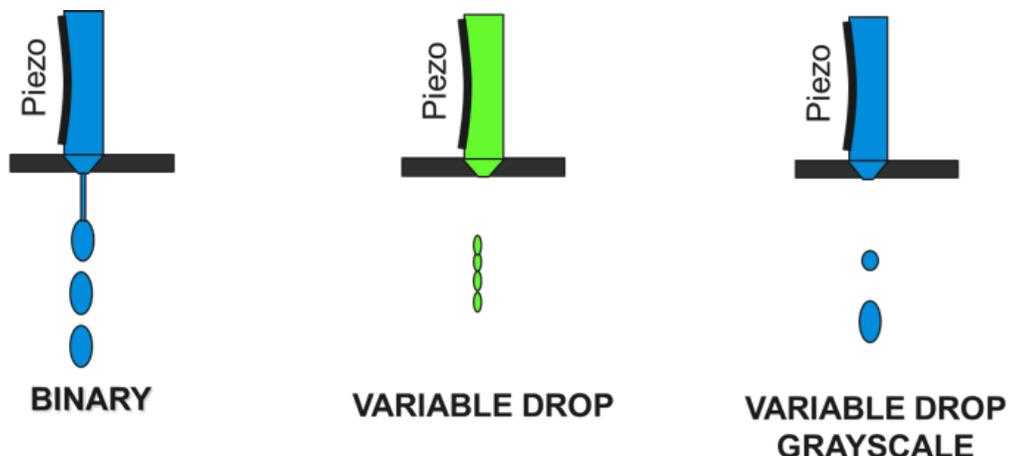
Also keep floor space needs in mind, considering ways to maximize your available square footage, whether it be with a flatbed device printing full sheets of material or a hybrid device with a cutter or router. Again, don't make the printer decision in a vacuum. Carefully consider your workflow, labor factors and time to market with finished goods.

How Ink Factors into Profitability

Ink Usage

From a quality and ink consumption perspective, you must consider inkjet print head technology. With piezo drop-on-demand inkjet printing, there are three primary types of heads:

- Binary: A single drop size is ejected from the print head. These heads can simulate grayscale with multiple passes, but in doing so, they consume more ink.
- Variable Drop. Some piezo heads produce different-sized drops but only one size per image. These print heads are not capable of dynamic drop-volume changes.
- Variable Drop Grayscale. These print heads are capable of ejecting different-sized drops dynamically within the same image.



The use of variable dot sizes within the same print (variable drop grayscale printing) results in near photographic image quality that exceeds the image quality when printing with a binary drop or using light colors.

The use of dynamic variable drop grayscale heads also yields dramatically less ink than binary or variable binary heads. In the RIP, you can manage the ink lay-down, better managing your ink volumes on a job-to-job basis.

Also consider the ability of the RIP platform to control image color, contrast and ink lay-down. These factors will help you optimize quality with your profit targets.

Ink Types

The type of ink used in your wide-format device drives job turnaround times to your customer. As mentioned earlier, graphics printed with UV-curable inks are immediately dry and ready for the next step in the production process, while aqueous, latex and solvent printing often require heating or more drying time for a proper cure. Aqueous inks are not waterproof and require an overcoat or lamination in the process if the finished graphic will be installed outdoors.

The Rest of the Story

Once you establish an ROI calculation, take a closer look at the actual production workflow in your location. What does an average day of production look like? Does it consist of eight hours of printing and four hours of finishing? Examine the actual capacity of the printer: How much can you reasonably print in a shift, and how does that capacity level compare with the growth objectives for your business?

Consider burst capacity needs as well — how often do you anticipate getting large jobs? If it is often, your purchase decision may need to lean toward a higher-volume printer. Conversely, if you have yet to establish a track record in large-format digital printing sales and

The electricity to run these heaters or special drying equipment will drive your power consumption costs up and may require you to run your HVAC system year round if you have heaters running constantly.

Finally, consider your substrate/application use. If you want to produce vehicle wraps, for example, you may be looking at solvent technology and need to factor the cost of the required ventilation system into your investment and running costs.

White Ink

Another consideration is whether the printer offers white ink. Having the capability to print white ink means you are able to use a broader array of substrates, including transparent and dark material, and increases the type of work you can add to your service offering. In fact, white ink is often required for package printing and prototyping as well as for backlit displays and window clings printed on transparent media. You'll benefit from higher margins on white ink applications and add exponential profit over your cost.

large orders are not an immediate concern, your best bet may be to add a lower-volume device while striking up a partnership with another business that can take on overflow work as needed.

In considering volumes and throughput, think through the end-to-end process, not just the raw speed of the machine. Finishing time, as mentioned earlier, is important, as is drying time depending on the type of print technology you choose. Beyond that, consider file processing: How long does it take to RIP a file and begin printing?

Environmental Considerations

Today's UV-curable wide-format printers are quickly replacing solvent printers for many applications. Part of the reason for this is the reduction in the amount of noxious chemicals required. A UV-curable printer offers a safer, healthier workplace. You may also find that there is less material waste with UV-curable printing, especially for rigid materials produced using a flatbed that might otherwise need to be mounted. These environmental considerations are becoming increasingly important and should be taken into account when making your purchasing decision.

As stated above, UV-curable printers that use LED curing also use less energy and can reduce the amount of substrate required by using thinner, heat-sensitive materials. This reduces your overall environmental footprint in terms of the weight of materials, the carbon footprint for transportation and the amount of energy consumed by the printer.

More Profit, More Opportunity

The latest generation of wide-format inkjet printers offers many advantages to producers of signs and display graphics. New capabilities open the door for

new applications and increase the opportunity for more profitable margins.



6750 Dumbarton Circle
Fremont, CA 94555
650-357-3500
www.efi.com

Auto-Count, BioVu, BioWare, ColorWise, Command WorkStation, Digital StoreFront, DocBuilder, DocBuilder Pro, DocStream, EDOX, the EFI logo, Electronics For Imaging, Fabrivu, Fiery, the Fiery logo, Inkware, Jetrion, MicroPress, OneFlow, PressVu, Printellect, PrinterSite, PrintFlow, PrintMe, PrintSmith Site, Prograph, RIP-While-Print, UltraVu and VUTEk are registered trademarks of Electronics for Imaging, Inc. in the U.S. and/or certain other countries. BESTColor is a registered trademark of Electronics for Imaging GmbH in the U.S. The APPS logo, AutoCal, Balance, ColorPASS, Dynamic Wedge, EFI, Estimate, Fast-4, Fiery Driven, the Fiery Driven logo, Fiery Link, Fiery Prints, Fiery Spark, the Fiery Prints logo, FreeForm, Hagen, the Jetrion logo, Logic, Pace, Printcafe, the PrintMe logo, PrintSmith, Print to Win, PSI, PSI Flexo, Rastek, the Rastek logo, RIPChips, SendMe, Splash, Spot-On, UltraPress, UltraTex, UV Series 50, VisualCal, the VUTEk logo and WebTools are trademarks of Electronics for Imaging, Inc. in the U.S. and/or certain other countries. Best, the Best logo, Colorproof, PhotoXposure, Remoteproof, and Screenproof are trademarks of Electronics for Imaging GmbH in the U.S. and/or certain other countries. All other terms and product names may be trademarks or registered trademarks of their respective owners, and are hereby acknowledged.