Top Ten Factors
for Evaluating

Direct to Garment Printers - and Vendors

After designing, manufacturing, selling and supporting direct to garment printers for six years, AnaJet has learned a thing or two about dtg printer own-ers. They span all types of indust-ries, from home-based startups op-erating out of the garage to billion-dollar clothing manufacturers. Some print ten or twenty shirts at a time, a few use their printer strictly for in-house purposes, while others ful-fill orders in the thousands per month.

Companies and start-ups looking at this technology share a few con-cerns: they don't have money or time to waste, they want something reliable, and they want a company that stands behind its product if and when challenges arise.

There are a few other companies who claim to deliver on these re-quirements as well as AnaJet; how-ever, we have had more than a few customers who opted for a compet-itive solution, then wished they had known about "X" before they bought.

After some lively debate, we have boiled down the most common pro-duct considerations into the "top ten" considerations that every dtg evaluator and decision maker needs to pay attention to - *in addition to* price.

If you see satisfactory or superior marks from a vendor on these items, you might rest a little easier and hopefully go straight from buyer's high to owner's satisfaction – skip-ping over the pesky "buyer's re-morse" phase altogether.

This article assumes that you have an existing business or a business plan, so it does not address this or other prerequisites. It focuses on how to choose the best dtg vendor for your needs.

Product Features are critical, but evaluators need to also look at **Bus-iness Functions** – how significantly will a printer impact your costs, op-erations and end product quality? -

and **Support** capabilities. The list isn't ordered by significance because you should weigh each factor according to your unique business needs.

Regardless of industry, size of business or business model, each of these factors makes a difference in your garment printer's overall util-ity and return on investment.

Product Features and Capabilities

1. Production capacity, relative to your needs

How fast can the printer output garments? 50 per day? 200 per day? 1,000 per day?

Speed is one of the metrics that some manufacturers crow about, and some dtg printers have a wide range of print speeds. Some speed settings may not produce prints of a quality that you would choose to sell
– either because it's too fast to produce the desired quality, or because it's extremely time-consuming to produce a resolution level that you don't even really need.

Ideally, you want a printer that delivers a good batch of brilliant, full-color prints in a short period of time

without a lot of babysitting and hassle.

For example, the AnaJet mPower mP10 prints a white/light shirt in "high production" mode in about 16 seconds, and production mode in about 25 seconds. This means

you could reasonably print and cure 60-100 sellable shirts in the course of an hour.

Think speed is overrated? If you intend to use the garment printer less often, you may be tempted to favor something that runs much slower – on the order of seven minutes or more for some models – but keep this in mind: there is not an automatic trade-off between speed and high resolution or print quality.

On a surface like t-shirt fabric, there's really not much point going beyond 300 dpi or 600 dpi. Your customers are extremely likely to be satisfied with this degree of resolution. And with highly granular ink control
(covered below), *image fidelity* can be extremely high.
(Some dtg printers by default use an ultra-high, portrait-quality resolution. This is, in our experience, overkill, since the primary substrate you'll print onto is t-shirt fabric. But on very smooth surfaces like glass, 600-plus dpi may be desirable.)
Also keep in mind that if you don't intend to become a daily user, you do not want to have to drop everything in your regular line of business to sit on your apparel printer for eight hours,

The Top Ten at a Glance

1. **Production capacity relative to your needs.** Speed. How long does it take to print a good batch of brilliant, full-color prints?

2. **Ink control.** How granular is the ability to control ink drop size? This affects aesthetic quality and finish.

3. **Durability of components, especially print heads.** How long do the parts last in normal use, and how costly is it to replace wear items?

4. **Degree and frequency of main-tenance and downtime.** How much time and effort does it take to clean and maintain your printer, and are you willing to sacrifice that time?

5. **WYSIWYG: How faithfully can you reproduce an image?** Do the printer and RIP software deliver on your expectations of high fidelity to the source?

6. **Ink consumption and cost per print.** How much ink does it take to print a given type of image? This can determine pricing strategy.

7. **Washability of finished goods.** How well does ink adhere to the fabric? How does the ink perform in tandem with a pre-treatment solution?

8. **Availability of tech support.** When are techs available? Live or virtual?

9. **Training and learning curve.** What tools and seminars are available and how much do they cost? How long does it take to become competent with the machine?

10. **Depth of user forums and online community.** Are there other people out there doing what I am doing? Have they been able to solve some of the challenges I am facing?

just to output a run of 50 printed dark t-shirts.

Consider your income and profit per-hour, across all business lines, and then decide how much time is reasonable to take away from other income-producing activities (your opportunity cost). You will probably find that speed is more important than you first imagined.

2. Ink control

The features that affect your ink costs above all else are the range and depth of ink controls. For graphic design aficionados, this is really important: how well does the printer enable me to control ink drop size so that I can achieve bril-liant, high-resolution, high-fidelity prints?

For those of us who are NOT wiz-ards with Photoshop or Corel Draw, it's still fundamental. You may find that customers are coming to you with orders for photographic-qual-ity prints.

Most direct to garment printer man-ufacturers specify a range of ink drop size. Some, but not all, also will allow users to adjust settings for a given graphic.

For example, AnaJet mPower series apparel printers allow very fine control of ink drop size, rang-ing from 7 to 35 picoliters. The AnaRIP

software that comes with each mPower offers three settings for maximum control.

The more control that you have over precise ink drop size, the better your chances of producing a high-fidelity image and controlling the cost. This in turn enables you to price more accurately and reduces your likelihood of waste.
Ink control also affects washability. You should be
able to fine-tune saturation levels to ensure that you're laying down enough ink according to the type of fabric. Sweatshirts, for example, require more ink than slub-knit t-shirts do to produce a long-lasting print.

3. Durability of components, especially print heads

It's one of the most expensive wear items and it is the component of the printer that will make your dtg busi-ness fly: the print head. How long it lasts depends on the materials it's made from *and* how well you maintain it.
Several years ago, at the advent of digital direct to garment printers, some manufacturers repurposed heads from paper printers to output a different kind of ink to print on textiles. These heads were relatively inexpensive and composed of plastic.

Other manufacturers sourced their print heads from more robust tech-nologies. These components usually resulted in a much more expensive

printer, creating a "second tier" of dtg that imposes a high barrier-to-entry for smaller shops and start-ups.

However, with recent advancements in printer components and produc-tion efficiencies, today a buyer should expect a rugged, durable print head without paying through the nose.

AnaJet mPower series printers rely on heavy duty stainless steel heads which can endure repeated clean-ings and high pressure purging – up to eight PSI. Competitive dtg print-ers that have similar print heads start at double the price of an mP5, and go much higher.
Your dtg vendor should be ready to talk about the lifespan of the print head and the level of "tender loving care" that it will require to last you for a few years.

Ask them about which items are wear items, and to point you to the resource where you can price out replacement parts if you should need them.

Business Functions

4. Degree and frequency of maintenance and downtime

How often do you need to: run noz-zle checks? Run head cleans? Swap out ink cartridges and charge new ones? Flush and fill your ink lines? Empty waste ink tanks? Clean wiper blades? How much time does daily, weekly and monthly maintenance take away from profit-generating activities?

These tasks and more are typically required steps in operating and maintaining a dtg printer. Your best bet is to identify what level of main-tenance you are committed to per-forming for the life of the printer. How do you determine the main-tenance burden for a given dtg printer? It's not impossible and in

fact, it's wise to "drill down" a little bit. Ask your vendor to provide ref-erences to, and examples of, their training or operations manual. Don't settle for a pat answer, like "virtual-ly nothing." This is a red flag.

AnaJet mPower series printers automate some maintenance pro-cesses in order to keep the print heads from drying out and clogging with ink. As described above, their stainless steel print heads also tol-erate a high amount of pressure, which enables operators to "power purge" clogs in the nozzles.

If you are savvy about inkjet print-ers, and you understand the main-tenance routines, then doing routine maintenance won't be the challenge. In this case, the key variable to look out for is the depth of features that enable *readiness of the printer* after a period of being idle.

Can you leave it running "auto-

maintenance" for a weekend, come back Monday morning, do a nozzle check and start production immedi-ately? Or do you need to load the printer with a cleaning solution anytime you walk away from it for more than a day or two? For print-ers that do not use an air-tight "closed-loop" ink delivery, ink recir-culation, or industrial strength print heads, you will need to be more attentive.

More plastic print heads have been destroyed due to ignorance of the maintenance routine than anything else. While the AnaJet *SPRINT* also has auto-maintenance features, our tech support best practices recom-mend that customers who don't plan to use the printer for more than a couple of days do flush their lines.

If you foresee using your dtg prin-ter daily or almost daily, you really

need to look at purpose-built prin-ters. They are more expensive but will save you money in the long run.

On the less expensive side, modi-fied-Epson-head printers definitely fulfill the need, but they do have a more finite lifespan (around 25,000 print passes when well-maintained) and require more attention when not in daily use. Some customers base a six-figure business on a *SPRINT*, but we tend to view it as a precursor to the more heavy-duty mPower mP5 and mP10 models.

5. WYSIWYG/fidelity to the source image

How hard is it to replicate an image onto the gar-ment? Can I take advan-tage of the substrate (gar-ment fabric) color? How many shirts am I going to waste to get one good print?

The answers to these questions depend quite a bit on the software that you use to convert an image into a print job. Your direct to garment printer may include a license for a top-notch RIP software, you may need to find RIP software on your own, or it may be fully integrated into the printer (meaning no RIP process is needed).

If you have to purchase this software separately, be very careful, because the printer manufacturer may not have support technicians who are fully

trained on it. Ask for a recommen-dation.

Assuming that the RIP software is proprietary or integrated, the easi-est way to test fidelity is to send a high-res image (300 dpi or better) to their representative and ask for a custom sample.

This is important because custom-ers will come to you with definite expectations for color matching and photographic-quality prints. And it's not cost effective to burn through half a dozen shirts to achieve a sellable print.
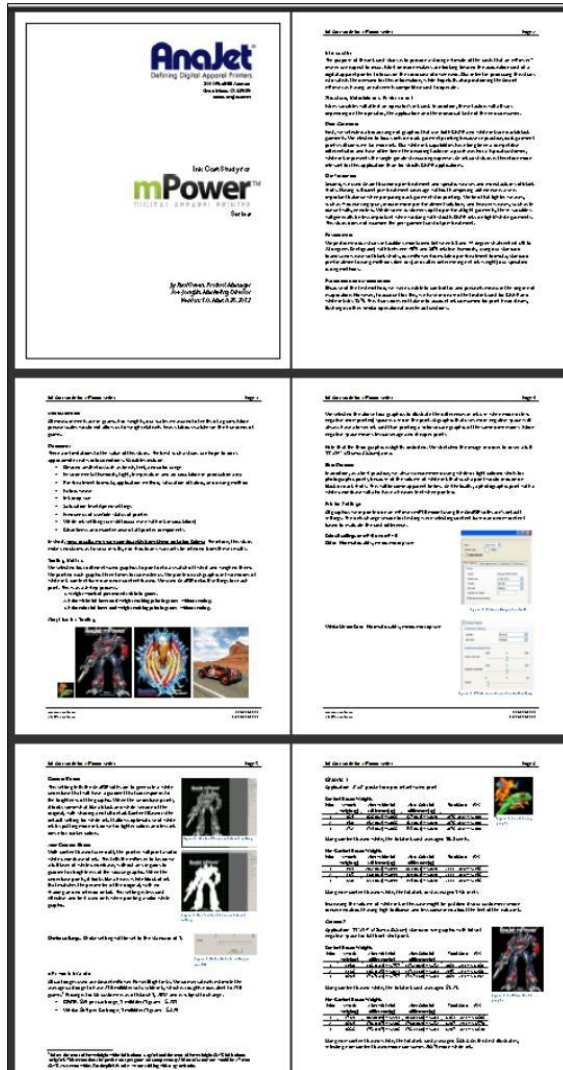
AnaJet's proprietary AnaRIP soft-ware for the mPower is the result of years of cumulative customer exper-ience on third-party RIP tools. It has unique real-time "WYSIWYG" adjustments for color and white underbase layers, ink level monitor-ing and other features that you would expect in a more expensive suite. It is included in every mPower purchase.

6. Ink consumption and cost per print

What is the documented cost per print? What is the methodology that the manufacturer used to test this? Is it a real-world example or some-thing done in a lab under highly artificial condi-tions?

There are two ways to research this. One is to rely on the vari-ous online communities, who make no secret about their stance on a given manufactur-er's ink costs.

Another way is to insist that the manufacturer show methodical studies that illustrate the cost to print. It's especially import-ant to understand your total cost of ownership when inks are proprietary.

How do you know if the estima-ted costs per print are a good basis for your calculations? Look for indications that the tested graphics line up with what your customers want.

7. Washability of finished goods

This is probably the easiest thing to grade, and likely one of your first steps in working with a vendor. Assess the adhesion of a vendor's dtg ink to a typical garment. This is very important for proprietary inks, because you are effectively partner-ing with that vendor and you need to have faith that their inks can stand up to routine washing.

The sample that a dtg vendor gives you may be stunning, but your cus-tomers may complain (or worse, never come back) if that stunning graphic fails to stick through 20, 40 or more washings.

Take the sample that you requested and run it through your washing machine on cold, then dry it on medium or low heat. Repeat if you have time. You're watching for fading of colors, cracking, peeling and overall adhesion. There should be no color fading and a slight degree of loss, or no loss at all.

Did the sample perform lousy in the wash test? Don't dismiss a vendor solely on the basis of one wash test. Be sure that you're measuring for adhesion and not the shirt's color or shrinkage.

There are many possible reasons for wash breakdown, including pre-treatment of the garment, curing methods and possibly even ship-ping snafus that contributed to the bad sample. Email the vendor a pho-to of it and ask for another sample. You're not in a hurry.
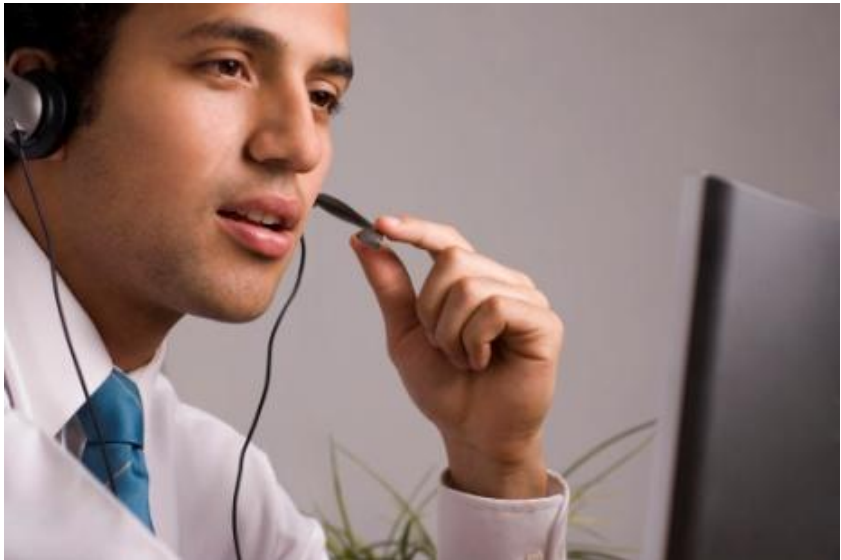
Support

8. Availability of technical support

When is the technical support staff in the office? How many "techs" are on staff? Do you get live telephone support, online support or both?

If you're doing digital apparel print-ing for the first time, you will want to weigh this factor heavily. Live technical support can sometimes mean the difference between fulfil-ling a challenging $2,000 custom print order on time and losing a cus-tomer. Based on our experience, we have heard that this capability is as valuable as the entire purchase price of the printer itself.

AnaJet offers both online/email and live telephone support to all USA customers, and its international distributors are all certified techni-cians. Only AnaJet offers live tech support to all owners for the life of the printer.

If you're a seasoned dtg pro, sup-port accessibility might fall lower down on the list, but if you're in-vesting in new equipment, try to map out how well tech support hours align with the hours of your business.

9. Training and tools for operators/learning curve

How committed is the vendor to making certain that you and any other operators in your company are fully trained in operations and maintenance – before and after you take delivery of your printer?

Some manufacturers assert that there is very little learning curve for their machines. "If you know how to use and maintain a color inkjet printer, this is no different." This is seldom true.

You'll need to become skilled on the printer itself and on the RIP soft-ware. Other variables to be aware of include inks, operating environ-ment, garment printing surface,

table loading and adjustment, registration, pre-treatment, curing heat and pressure, and washability of the garment.

Grade your dtg manufacturer heav-ily on the degree of training, tools and resources available to opera-tors. The more a vendor is willing to expose to you before the sale, the better your odds of taking advan-tage of these resources when you need them

Do they have a training facility? Is there a fee? Do they rely heavily on webinars and manuals? What types of resources do they have, and do those tools jive with your learning style and time requirement? How do they handle updates or repairs?

Some vendors may charge a premium to make a dedicated trainer available to you, while others may volunteer to reimburse your travel expenses to a hands-on training session. Still others always rely on distributors – so find out if the distributor is actually certified to train you on a particular printer.

In the US, AnaJet University (AJU) is a one-day, intensive hands-on learn-ing session for dtg customers. Atten-dees spend most or all of a day RIP-ping images, printing, and learning about troubleshooting and main-tenance for their printers.

They may attend AJU as many times as they want, or send new-hire operators to be trained as needed. Outside the United States, AnaJet certified distributors are required to take a longer, more intensive course on printer operations and mainten-ance, so that they can serve custom-ers as technicians in their respective regions.

10. Depth of user forums, knowledge base, community

Finally, here is a factor that is ex-tremely subjective and a little vola-tile: the ever-shifting sentiments of a user community.

More users on a given technology means more help. When it's Sunday night or a holiday, and a job ex-ceeds your skills, or you forgot what you learned in user training, or it's not in the company's technical tips, you'll look to the online network.
This can be in the form of a closely moderated company forum, or a loosely moderated public forum, an individual's blog or Facebook site; the list goes on.

The odds are good that someone out there has already done *exactly* what you are doing. The more users that are in the network, the more likely you'll find that needle-in-a-haystack solution.

In addition, a robust user commun-ity can offer a savvy forum-surfer volumes of advice on how to get started, techniques to optimize cost, promotional strategies, and it can help keep a new dtg printer owner tuned in to new developments.
You can test this out by searching for or joining an online community or two and clicking around to see how broad the discussion is. Every technology has its share of "fan-boys" and "haters." The key thing to look for is comment volume, not just the number of "good" or "bad" posts. If it's hard to find comments, good

or bad, about a given technology, find another forum (or find another vendor).

After your purchase: The typical forum poster out there is probably working with knowledge and tech-nology that is a year or two out-dated. Be sure you're interacting with users whose equipment and software is up to date.

More Factors

This list is not comprehensive. You may find one or two other param-eters that need to be factored into your decision. Here are some com-mon factors to consider:

- Cost of inks, cleaning supplies, "wear items" and other supplies, to determine your total cost of ownership
- Portability of the printer
- Table sizes, specialty print tables and templates
- Type/range of supported print surfaces
- Other applications such as glass, wood, canvas

We hope you find this guide helps you to ask the right questions as you evaluate direct to garment. Go forth and print!

About AnaJet

Based in Costa Mesa, California, AnaJet is the recognized market leader in digital garment printing systems in the US and has distribu-tors in over 50 countries. AnaJet designs and builds its printers, and supports and trains customers, at its facilities in southern California. For more information, visit www.anajet.com.

Page 7