

10 TRENDS DEFINING THE NEXT PHASE OF DIRECT-TO-FILM PRINTING

By David Sweetnam, Director of Lab Services at Keypoint Intelligence

Walk the halls of any major textile printing exhibition, whether in Long Beach, Shanghai, Barcelona, Las Vegas or Osaka, and one thing is impossible to miss: **DTF has moved from fringe to mainstream.**

Alongside conversations with manufacturers, software developers and print providers, my team also spends extended time with the equipment itself, which is where marketing tends to part ways with reality. That mix of industry conversation and hands-on evaluation is what shapes the view below. Technology is driving change, and buyers are looking at DTF more holistically. Here are the ten developments I believe will shape the next phase of DTF.

1. POWDERLESS DTF SET FOR PRIME TIME

Powderless DTF has been one of the one of the most closely watched developments in the industry, promising cleaner production, fewer consumables and softer-feel transfers. Early launches raised concerns over durability and production robustness, but 2026 has seen significant progress, with several major manufacturers unveiling commercial solutions. By the time you read this, Israeli-headquartered Nur Inks will be the first powderless system we've fully evaluated.

2. AUTOMATION IS BECOMING ESSENTIAL

Labor shortages continue to drive investment in automation, from film handling and curing to cutting, stacking and transfer applications. Tomorrow's DTF production facilities will increasingly resemble automated manufacturing cells, freeing skilled operators to focus on higher-value tasks.



Nur Ink Innovations demonstrates its powderless DTF technology on DCC's stand at ISS Long Beach.



3. AI WILL TRANSFORM QUALITY CONTROL

It's no surprise that artificial intelligence (AI) is finding real uses in DTF production. AI-powered vision systems can already identify nozzle failures, banding, colour drift and registration errors in real time, reducing waste and improving uptime. The next step will be predictive quality monitoring, letting operators catch problems before they affect production.

4. SOFTWARE IS BECOMING AS IMPORTANT AS HARDWARE

Print speed means little if jobs are delayed before printing even starts. Workflow automation, RIP performance, color management, cloud production and intelligent scheduling are becoming major purchasing criteria, as businesses look to squeeze productivity out of every stage of the workflow.

5. CREATIVITY WILL DRIVE DIFFERENTIATION

As standard CMYK DTF becomes more commoditized, smaller decorators will need a creative edge to stand out. Expanded ink sets, fluorescent colors, glitter and specialty films are where that creativity shows up in practice, creating premium products that command higher margins and build customer loyalty.

6. SUPPLIES MATTER

Low-cost inks and films continue to flood the market, and my inbox and LinkedIn feed are full of suppliers promising astonishingly low prices. But buyers are getting savvier, often through bitter experience. Consumables make up only a small share of total production cost compared with garment blanks, labor and waste. As a result, reliability, consistency and supplier support matter more than chasing the cheapest liter of ink or roll of film.

7. SUSTAINABILITY IS BECOMING A BUSINESS REQUIREMENT

Environmental considerations are moving beyond marketing. Lower energy consumption, reduced waste, recyclable packaging and alternative media are increasingly driven by customer demand and regulation, not corporate soundbites.

8. APPLICATIONS CONTINUE TO EXPAND

While apparel remains the core market, DTF is expanding into footwear, bags, workwear and promotional products, broadening the technology's commercial potential and opening new revenue streams.

9. SMART FACTORIES ARE BECOMING REALITY

Production data is becoming a valuable business asset. Remote monitoring, predictive maintenance, automated consumable ordering and live production dashboards are helping businesses improve utilization and cut downtime. In conversations with print providers, I keep hearing the same aspiration: the **"lights-out factory"** a fully automated production environment capable of running 24/7 with minimal operator intervention. We're not there yet, but the direction of travel is clear.

10. ECOSYSTEMS WILL REPLACE STANDALONE PRODUCTS

Manufacturers are increasingly promoting complete production ecosystems that bring hardware, software, consumables, color management, workflow automation, service and training together into a single solution. For many buyers, the quality of the overall ecosystem will matter just as much as the printer itself. DTF's first chapter was about making garment decoration more accessible.

The next chapter will be defined by intelligent automation, AI-driven quality control and production ecosystems that deliver measurable productivity gains. Over the next few years, the pace of innovation will keep accelerating, and the companies that succeed will be defined by the smartest workflows, the strongest partnerships and the most consistent production.

ABOUT KEYPOINT INTELLIGENCE

For over 60 years, clients in the digital imaging industry have relied on Keypoint Intelligence for independent hands-on testing, lab data, and extensive market research to drive their product and sales success. Keypoint Intelligence has been recognized as the industry's most trusted resource for unbiased information, analysis, and awards due to decades of analyst experience.

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David Sweetnam is an industry veteran with more than 30 years of experience in digital printing. He develops and oversees Keypoint Intelligence's test operations and programs for graphic arts, production cut-sheet, textile, and industrial print devices. The test programs themselves have become respected, independent benchmarks, with Keypoint techs traveling the world to gain access to hardware, often before their launch. David also attends tradeshows across continents and is a regular keynote speaker at digital textile events.

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