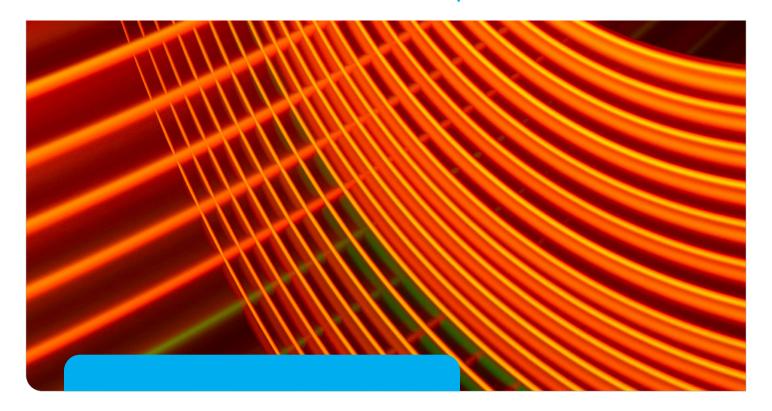


From Classrooms to Clinics to Compliance: Inkjet's Expanding Role in In-plant Printing







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INTRODUCTION

In-plant printing operations serve a broad range of organizations, spanning K-12 school districts, universities, government agencies, financial institutions, and healthcare providers. Each has unique requirements for speed, quality, security, and cost-efficiency. Production inkjet has emerged as a transformative technology, enabling inplants across these segments to consolidate printing devices, expand application portfolios, and deliver high-quality output at lower costs.

This report explores how production inkjet technology is benefiting in-plant printing operations in education, government, financial services and healthcare organizations. It draws on case studies of in-plants' use of production inkjet along with Alliance Insights (formerly NAPCO Research) survey research. The report also evaluates how Canon's varioPRINT iX3200 and forthcoming varioPRINT iX1700 align with these markets.

The Strategic Case for Inkjet: Efficiency, Quality, and Value

In-plants have been at the forefront of digital print adoption, transitioning from offset to toner-based technologies as early as the 1990s. Today, digital printing remains the backbone of most in-plants. The next shift for many in-plants is to production inkjet.

In-house printing departments are increasingly investing in production inkjet technology as a strategic move to enhance efficiency, improve quality, control costs, and strengthen their value to parent organizations. The advantages of this investment extend across multiple dimensions of operational performance and service delivery.

According to Alliance Insights' (formerly NAPCO Research) <u>2024 study *The Production Inkjet Application Revolution*,</u> the top reasons in-plants invested in or were considering investing in production inkjet presses were to increase production, reduce cost of ownership compared to toner, and migrate toner work to inkjet.

Production inkjet offers in-plants the opportunity to bring in new business, generate additional revenue, and produce more work. Key benefits include:

- Cost-effectively printing monochrome and color jobs on one press.
- Transitioning black-and-white applications to higher-value/higher-margin color products.
- Extending the crossover point for digital print versus offset, helping more pages migrate to digital print.
- Using variable data to print more personalized materials, which is particularly attractive for increasing communication response rates.

INKJET IN EDUCATION: SUPPORTING LEARNING AND ENGAGEMENT

In-plants in the education segment have long been innovators with digital printing, often serving as early adopters of new technology to meet the evolving needs of schools, colleges, and universities. These in-plants face constant pressure to deliver cost-effective course materials, recruitment communications, and administrative documents under tight deadlines. Production inkjet is proving to be a game-changer, enabling these in-plants to enhance quality, reduce costs, and directly support teaching and learning outcomes.

School Districts: Reliable, Affordable, and Impactful

For K-12 in-plants, reliability and cost-effectiveness are crucial. An *In- plant Impressions* article featuring Hillsboro School District in Oregon
provides a compelling example. In July 2024, the in-plant replaced four
toner devices with a single varioPRINT iX3200 sheetfed inkjet press.

Printing Services Manager Dave Bryson reported that the investment in production inkjet has been helpful for the in-plant's small staff. He said one operator prints everything on the inkjet press, and the other handles bindery and wide-format printing.

INKJET VALUE: EDUCATION

Typical applications: course packets, marketing, direct mail for admissions, test materials

Inkjet value: cost-effective short runs, personalization, digital flexibility

The in-plant primarily prints curriculum for the school district, Bryson said, however the shop also produces work for nonprofits, the city, and other school districts, printing everything from business cards and bookmarks, to magazines and signage. He said the Canon iX prints on all types of paper, including uncoated, gloss, heavy-weight, synthetic, and colored.

<u>Bryson said in the *In-plant Impressions* article</u> that the press has exceeded his quality expectations, noting, "The school district that we print for is getting a level of quality that they've never even dreamed of. Everybody's pretty excited about it."

Another benefit of installing the varioPRINT iX3200, <u>according to the *In-plant Impressions* article</u>, was that it prevented some of the in-plant's business from going elsewhere.

In addition, the inkjet press enables the in-plant to produce some of their full-color educational materials at virtually the same cost as black-and-white. Bryson reported, "Printing things in color improves comprehension, which improves test scores, which improves graduation rates. The cost to print color on inkjet is so much lower than toner that we're able to offer color and black-and-white at the same price. So, we are printing a lot more in color, and we got a standing ovation from all the admins and principals when they found out that the printing of color was no longer an issue."

Other school districts echo this success. As reported in Production Inkjet: A Smart Choice for Higher-Education In-Plants, the Houston Independent School District (HISD) — one of the largest in the U.S. — invested in Canon sheetfed inkjet to cut its color costs in half. The move made full-color textbooks and teaching materials affordable and widely available. The shop was able to produce full-color teaching and learning materials that cost roughly 40% less than black-and-white options. The result was faster delivery, higher-quality instructional materials, and improved equity for students across the district.

Higher Education: Eliminating Bottlenecks, Driving Sustainability

In higher education, in-plants play a strategic role in supporting admissions, academics, alumni relations, and athletics. A Canon customer spotlight on lowa State University's experience illustrates the transformational impact of inkjet adoption. Director of Printing Services Nathan Thole recalled, "When we first started putting our jobs on the Canon [varioPRINT] iX, I thought there would be a few jobs that we would still have to run on offset; but we just never looked back, we never did turn back to our offset presses."

The switch eliminated bottlenecks, even during high demand. Thole explained, "August is one of our busiest times of the year, but, two weeks into August, I just didn't feel like we were that busy. Jobs were being printed and shipped and there was absolutely no backlog. While it felt like we had a reduced amount of work, we actually had more work, and our revenue was increasing."

Beyond efficiency, Nathan Thole, director of printing services said in a Canon customer spotlight that the inkjet investment aligned with the in-plant's missions to contribute to the university's success by providing high-quality print at a competitive price, with a quick turnaround time, and significantly reduced environmental impact.

Education in-plants are strong candidates for inkjet because of their diverse application mix and the need to serve multiple stakeholders. These presses enable cost-effective color, variable data personalization for recruitment campaigns, and the ability to consolidate devices for greater efficiency.

In-plant Technology Spotlight:

Canon varioPRINT iX3200 and iX1700

Canon's sheetfed inkjet presses include the well-established varioPRINT iX3200 and varioPRINT iX1700 which will help expand accessibility to sheetfed inkjet. These two presses can help in-plants thrive in today's new era of efficiency, flexibility, and strategic relevance.

The iX3200 is best suited for large, enterprise-level in-plants that need high uptime, wide substrate compatibility, and offset-like quality for both transactional and marketing work.

The iX1700 (available in 2026) provides a more approachable mid-volume solution, ideal for organizations with lower volume requirements, tighter budgets, or growing digital workloads.

Together, as shown in **Table 1**, the two devices give Canon a strong portfolio to serve both high-capacity and mid-market in-plant needs, across education, government, finance, and healthcare.

Table 1: How Canon's varioPRINT iX family of inkjet presses align with key in-plant segment needs

Q. What are the primary reasons you operate both digital and offset presses in your printing facility?

| In-plant Segment | Key Needs | Canon varioPRINT iX3200 | Canon varioPRINT iX1700 |
|--|--|--|--|
| Education (School Districts & Higher Ed) | Cost control, mixed media (books, packets, mailings), quick turnaround | High-volume, offset-like quality for course packets and recruitment mailings | Mid-volume, flexible for on-demand materials, scalable for smaller in-plants |
| Government | High-volume forms and notices, workflow efficiency, security features | Handles long runs and varied substrates; automation helps reduce staffing needs | Excellent for regional/state-level in-plants; compact footprint, easy onboarding |
| Financial / Critical Documents | Accuracy, supports compliance-driven output, uptime reliability | Robust security features; supports critical transactional documents at scale | Efficient for mid- sized operations needing reliable compliance output |
| Healthcare / Other Specialized | Supports HIPAA compliance initiatives, patient communications, variable personalization | Large-scale throughput for patient statements and booklets | On-demand personalized jobs; practical for healthcare facilities or smaller specialized in-plants |

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INKJET IN GOVERNMENT: RELIABILITY, SECURITY, AND SCALE

Government in-plants face some of the most demanding printing requirements. These in-house printing operations are responsible for producing secure, mission-critical documents on strict deadlines, with zero tolerance for errors or delays. The combination of high-volume output, sensitive content, and cost-conscious oversight makes reliability and automation essential. Production inkjet can be an ideal technology option for meeting these requirements.

An *In-plant Impressions* article on The U.S. Government Publishing Office (GPO), the federal government's official printer and publisher,

exemplifies this transformation. Once heavily reliant on web offset presses, GPO has redefined its operations through production inkjet

and automation. In 2019, the in-plant installed four Canon ColorStream 6900 continuous-feed inkjet presses and one varioPRINT iX3200 cut-sheet inkjet press to replace six aging offset presses.

This shift was bold, entrusting critical publications such as the *Congressional Record* and *Federal Register* to inkjet rather than offset. According to GPO Director Hugh Nathanial Halpern, the results have validated the decision. "These presses are an investment in GPO's future," he said. They vastly enhance our flexibility to meet our customers' needs for both large and small jobs."

According to Greg Estep, GPO's Managing Director of Plant Operations, the move was essential for long-term relevance. He said, "If you don't innovate, you won't be relevant. You can't use the same solutions you used years ago when people were available."

Reliability and Labor Savings

The reliability of inkjet presses has been particularly impactful. According to the *In-plant Impressions* article, Estep said, "The reliability [of the inkjet presses] is just unbelievable." The article also reported that since the installation of the inkjet presses, GPO's on-time delivery has improved from 89% to 95%. And where it took six operators to run a full-size web offset press, just one person can run an inkjet press, and the short run work turnarounds are faster.

Lessons for Government In-plants

The GPO's transition underscores a larger trend: production inkjet provides government in-plants with the tools to balance tradition and innovation. By moving beyond offset, these organizations can gain:

- Improved reliability and higher on-time delivery rates.
- **Labor efficiency**, allowing fewer operators to manage higher volumes.
- **Application versatility**, from large-scale legislative publications to secure ID cards.
- Integration with automation and digital workflows, extending value beyond print.

As Estep concluded in the article, the key is continuous reinvention: "We're looking for automation, we're looking for reliability." For government in-plants, inkjet is not simply a press investment, it is a strategy for resilience, security, and long-term relevance.

INKJET VALUE: GOVERNMENT

Typical applications: forms, notices, mailings, secure documents

Inkjet value: security features, workflow efficiency, handling varied substrates

INKJET IN FINANCIAL, HEALTHCARE, AND CRITICAL DOCUMENT PRINTING

For financial institutions, insurers, and healthcare providers, accuracy and integrity are non-negotiable. These organizations rely on in-plants to produce transactional documents such as statements, invoices, and compliance notices, often under tight deadlines and with stringent security requirements. Production inkjet has become increasingly attractive in this sector because it offers the dual promise of high uptime and consistent quality, while also reducing costs and expanding capabilities.

Indiana Farm Bureau: Boosting Uptime and Expanding Applications

The Indiana Farm Bureau's in-plant in Indianapolis recently replaced its Canon varioPRINT i300 with a varioPRINT iX3200, marking a significant upgrade. The installation itself was memorable — the multimillion-dollar press had to be craned through a fourth-floor window — but the operational impact was even more impressive.

In an *In-plant Impressions* article, Michele Woodrum, Tech Operations Manager, explained that while the press was initially acquired to handle transactional print, its exceptional quality opened new possibilities. Woodrum reported that the print quality is so good that the in-plant can start moving marketing print jobs to it, as well as business cards and transactional pieces, like invoices and daily decks.

INKJET VALUE: FINANCIAL

Typical applications: statements, policies, compliance mailings

Inkjet value: accuracy, MICR compatibility, integrity checks, high uptime

Even some booklets, which had always been toner jobs, are being moved to the varioPRINT iX3200.

Woodrum explained, "We really only use toner now for large-quantity booklet runs, and we'll also just keep it as a backup just in case there's ever a maintenance issue with the iX3200. Being a backup is its biggest purpose now."

The iX3200 allowed the Farm Bureau to consolidate equipment, reduce reliance on toner devices, and expand into higher-value print work such as marketing collateral and booklets.

Inkjet in Healthcare: Expanding Capacity and Quality at Intermountain

Healthcare in-plants must balance efficiency, security, and versatility, often producing both patient-facing materials and internal communications. According to the *In-plant Impressions*' article New Inkjet Increases Volume, Quality at Intermountain, rapid growth within Intermountain Healthcare's hospital system has led to a large increase in demand for printed materials. Toner devices were struggling to keep pace, so in late 2024 the in-plant installed a varioPRINT iX3200 sheetfed inkjet press to expand its capabilities.

INKJET VALUE: HEALTHCARE

Typical applications: patient statements, educational material, ID solutions

Inkjet value: Workflows to support HIPAA compliance, personalization, on-demand efficiency

Simon Ortiz, Print Services Operations Manager, explained the decision: "With the rapid growth of our hospital system, we have had a large increase in demand for printed materials. Our toner devices were struggling to keep up with our volume growth. By adding the varioPRINT iX3200, it increases our volume capabilities by 300%."

The iX3200 quickly became a workhorse for a wide range of applications. "Pretty much the only thing we're not printing on this new press is the transactional statement," Ortiz said. "Business cards, thank-you cards, brochures, letterhead, triage forms, booklets, door hangers, menus — you name it, we print it on this machine. The quality is excellent. It just has sharp, vibrant, and crisp colors."

Beyond expanding throughput, the new press is part of Intermountain's broader strategy to reduce outsourcing. Ortiz noted that the in-plant has nearly eliminated "rogue spend" — work previously sent to external vendors — bringing 98% of all jobs in-house

The investment also complements upgrades in finishing automation. By adding a bookletmaker and Tecnau finishing systems, the in-plant has streamlined bottlenecks, enabling its small staff to operate multiple devices at once.

According to an *In-plant Impressions* video, Ortiz noted that automated finishing paired with inkjet efficiency, helps the in-plant, with limited staff, keep up with high hospital volumes while maintaining consistent quality.

For Intermountain, inkjet has proven to be more than a technology upgrade — it's a strategic enabler for growth. <u>As Ortiz summarized in the video</u>, "There's a reason why inkjet is the future of the print industry... the equipment just runs longer, with less downtime, at a fraction of the cost of toner devices."

CONCLUSION

From classrooms to clinics to compliance, production inkjet is expanding the reach and value of in-plant printing. Whether it's enabling affordable color to improve education outcomes, helping to ensure secure government documents, or supporting consistent and compliant healthcare communications, inkjet is redefining what in-plants can achieve. Across every segment, inkjet strengthens in-plants' ability to reduce outsourcing, streamline workflows, and reinforce their strategic relevance within their parent organizations.

The strategic case for inkjet adoption is no longer simply about lowering costs — it is about future-proofing. By consolidating devices, enabling personalization, and meeting rising expectations for quality and turnaround, production inkjet can help in-plants stay competitive against external providers while also aligning with broader organizational priorities.

Canon's varioPRINT iX-series represents a versatile response to this moment. The varioPRINT iX3200 offers enterprise-level performance for large and demanding in-plants, while the forthcoming varioPRINT iX1700 extends these advantages to mid-volume operations. Together, they expand the addressable market for inkjet and ensure that in-plants of all sizes can leverage the benefits of offset-like quality, automation, and reliable uptime.

Production inkjet is no longer the technology of tomorrow; it is the foundation of a stronger, more resilient in-plant industry today. Those who embrace it are positioning themselves not only to meet current challenges but also to lead their organizations into a future where speed, flexibility, and value creation define success.

