Production Inkjet:
A Smart Choice for Higher-Education In-plants

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Higher-education in-plants are typically innovators when it comes to meeting the needs of their colleges and universities. Early adopters of digital printing, in-house printing operations in higher-education institutions have a long history of pursuing technology to improve operating performance and communication effectiveness. One digital printing technology that offers college and university in-plants new opportunities to serve their many organizational client bases is sheetfed production color inkjet.

While the first high-speed production inkjet presses were roll-fed systems, the introduction of sheetfed inkjet presses is expanding opportunity for in-plants by offering affordable color printing, attractive running costs, smaller footprints, substrate flexibility, and enhanced productivity.

In-plants' Role in Supporting Higher-Education Institutions

College/university in-plants provide high-quality and cost-effective print services to faculty, university staff, and students. While the products and services higher-education in-plants offer vary by school, one common element is that these operations seek to advise clients on best practices and methods for achieving goals.

Higher-ed in-plants play an essential role at their institutions and offer many valuable products and services. According to *In-plant Impressions'* report 2019 *Higher-Ed In-plant Trends*, 89% of college/university in-plants surveyed say they support the educational mission of their college/university.

A Prime Candidate for Sheetfed Inkjet

Characteristics of this in-plant segment, from funding to customers to application mix, make sheetfed inkjet a smart investment. It offers the same benefits of digital printing — short run, on-demand production, and personalization — but also it can improve production quality, expand ability to use color, and accommodate running different combinations of substrates.

Improvements in the quality of inkjet output, combined with the power of personalization, make it suitable for producing eye-catching and engaging direct-mail campaigns to recruit students, solicit donations, and support alumni relations.

Quality concerns can be an obstacle for in-plants, as many may have been disappointed with the output produced on previous iterations of digital presses. Advances in inkjet heads, inks, substrates, and press mechanics, such as drying, have led to impressive quality improvements.

For Craig Seybert, manager of printing services at Penn State Health and Medical School, in Hershey, Pa., quality and consistency are what drove his in-plant to switch to inkjet technology. The eight-employee in-plant had previously used a mix of toner and offset equipment to produce a range of print applications, from stationery and business cards to marketing materials. Today, he says, 95% of the work that was previously printed on the toner devices has migrated to his shop's Canon varioPRINT iX-series sheetfed inkjet press, along with 80-90% of its offset work.

Penn State Health is a diversified in-plant printing operation serving both the health system and medical school; its experience offers insights that address common objections to inkjet investment and serves as a testament to the value proposition sheetfed inkjet offers in consolidating equipment, device reliability, and output quality.

Seybert, who has been in the print industry for more than 30 years, believes that inkjet's quality is better than toner. He says, "The big thing is consistency — they tell you when selling [the equipment] that the first sheet will look like the last sheet, and believe it or not, it does. With toner, we would have fluctuation in color — not that it was unpresentable, but someone in the industry would notice the difference. Not with inkjet. We have had no complaints, and even had a few clients ask if we changed something because it looks cleaner and crisper."

Another perceived obstacle in adding inkjet is determining the required volumes to justify investment. While many adopters report that today's inkjet presses are more cost-effective with significantly less volume than previous devices, there is not a simple answer as to what that volume is. The justification process relies on careful assessment of current volumes, future goals, costs (both tangible and intangible), and customer demand for color — as well as an analysis of new printing opportunities, possible consolidation of current presses, process step improvements, and volumes an inkjet press will enable. Speaking with other in-plants that have added inkjet or working with a press vendor can help to support the volume justification process.

A Revenue Generating Opportunity

Investing in inkjet offers higher-ed in-plants the opportunity to bring in new business, generate additional revenue, and produce more work. The majority of higher-education in-plants are all or mostly self-supporting. They charge user departments for printing, binding, and other services to cover costs and support future investments. Even though most operate as nonprofit organizations, they still need to be competitive with outside print providers.

More than half (53%) of higher education respondents to In-plant Impressions' 2019 Higher-Ed In-plant Trends' survey cited the following reasons for their revenue increases:

- "Printing more efficiently, which is lowering cost for the customers and increasing how much they print."
- Better product, customer service, and turnaround times."
- "Increasing in-house capabilities and specialty printing, and effective marketing of those products."
- "Sending more printing to admitted students in hopes of getting them enrolled. We also invested in variable-data software and have generated revenue from it."
- "Marketing to new potential donors."
- "Doing more work for other schools in our area."
- "Offering services to the public."

Inkjet also opens up opportunities for insourcing work. While higher-education in-plants are generally restricted from selling their services commercially, many can partner with outside governmental agencies and nonprofits to bring paid work in-house. According to *In-plant Impressions'* 2019 *Higher-Ed In-plant Trends'* study, nearly 80% of in-plant survey respondents are insourcing work. They estimate this generates an average of 14.4% of their annual revenue.

Few in-plants are capable of producing 100% of the printing required by their host college or university, so work is often outsourced. Work is typically outsourced for the following reasons: a job requirement can't be met, there are special finishing requirements, run lengths are very long, or heavy workloads have limited their production capacity.

By printing work on sheetfed inkjet presses, in-plants can help reduce outsourcing, generate revenue, and meet organizational requirements for communication efficiency and effectiveness. Sheetfed inkjet offers speed, productivity, affordable color, and the flexibility to expand application offerings and be more competitive against external providers.

Inkjet Supports the "A's" of Higher Education

The application mix of higher-education in-plants also makes inkjet a smart choice. Colleges and universities use print to serve diverse needs, including student recruitment, academic support, fundraising, alumni relations, student activities, and athletic programs.

A simple way to classify the strategic missions of higher-education institutions – and the areas print applications can support — is to group them into to following activities that all start with letter "A".

- **Administration** includes all activities that support the maintenance and supervision of the institution and is separate from faculty or academics, although some personnel may have joint responsibilities.
- **Admissions** departments in higher education and private learning institutions focus on selling and promoting the school to prospective students and their parents. Recruiting students is the sales process for education.
- **Academics** are the scholarly activities, programs, or curriculum of a college or university that lead to a degree or certificate.
- **Activities** is a broad category that includes anything from student organizations to university choir concerts.
- **Athletics** encompasses nonprofessional, collegiate-level athletics.
- **Alumni** relations activities seek to continue bonds with former students to advance long-term relationships and fundraising.

In-plants in higher-education institutions produce many print applications that support their parent organizations' diverse requirements. According to In-plant Impressions' ongoing surveys of college/university in-plants, respondents report producing a wide mix of print applications to support their organizations' various strategic missions. Many of the print applications that support the "A's" of higher education institutions, as shown in Table 1, can be printed on sheetfed inkjet presses.

Table 1: Inkjet Print Applications Supporting Higher-Education Segments

ADMINISTRATION	ADMISSIONS	ACADEMICS	ATHLETICS/ ACTIVITIES	ALUMNI/ FUNDRAISING
• Bills/invoices • Business Cards • Check Printing • Compliance and regulatory documentation • Employee communications • Forms • Handouts • ID Cards • Manuals • Menus • Signage	• Booklets • Brochures • Direct mail • Event brochures • Flyers • Forms • Newsletters • Pocket folders • Postcards • Product/Service Catalogs • Personalized self-mailers • Signage	• Books • Calendars • Class Schedules • Certificates • Course catalogs • Course packs • Directories • Dormitory assignments • Forms • Manuals • Maps • Signage • Yearbooks	• Brochures • Calendars • Direct mail • Directories • Envelopes • Programs • Newsletters • Tickets • Signage	• Brochures • Direct Mail • Member Packets • Newsletters • Pocket folders • Signage

Defining the Sheetfed Inkjet Opportunity

Sheetfed inkjet presses offer many benefits to in-plants serving higher-education institutions. These presses can be a more affordable option when compared to roll-fed devices and offer the flexibility to print many of the applications in high demand at colleges and universities. Sheetfed inkjet devices can be an attractive alternative, depending on application mix, when compared to higher-cost inkjet web presses or lower-speed, toner-based, cut-sheet printers.

Sheetfed inkjet solutions close the gap between where electrophotographic device capabilities tend to end and continuous inkjet begins. These presses combine the productivity offered by inkjet with the media and application flexibility of sheetfed production while enabling in-plants to:

- Cost-effectively print monochrome and color jobs on one press
- Move black-and-white applications to higher-value/higher-margin color products
- Extend the cross-over point for digital print versus offset, helping more pages migrate to digital print
- Use variable data to print more personalized materials, which is particularly attractive for recruitment

Higher-education in-plants can leverage inkjet to create new applications that impress customers. For example, larger sheet sizes and expanded substrate options combined with specialty finishing can deliver more engaging and higher value print products. Applications like short-run posters, short-run color books, or personalized booklets that were cost-prohibitive on offset presses — or challenging to produce with toner devices — can be run and finished effectively with inkjet and an automated workflow.

Many factors make sheetfed inkjet presses an attractive investment for college/university in-plants. The speed, productivity, quality, and running costs of sheetfed inkjet can all aid in-plants in meeting client needs and delivering value to parent organizations. Consider the following:

- Cost-effective production of mixed black-and-white and color printing. Many higher-education print jobs, such as stationery letterhead, textbooks, and course packs, may include color and monochrome printing, with the latter making up most of the job. The ability to cost-effectively produce monochrome, light coverage color, high-quality color book covers, and full-color pages using a single device is attractive.
- The addition of color to educational materials has been shown to improve information retention by students. Inkjet enables color to be added to these materials with little increase in cost, supporting the educational mission of the institution.
- More suitable workflows for higher-education print applications. Sheetfed workflows are fundamentally more flexible than roll-fed ones, because more than one stock can be loaded in multiple paper drawers that are typical of sheetfed designs. A single job can have mixed media, allowing for uninterrupted printing between jobs. Cover sheets, dividers, and tabs can be inserted, automatically saving time, resources, and money.
- Ease of installation and operation. In addition, these presses can readily accept applications from other presses and require less operators.
- Produce personalized communications that support recruiting and engage students, faculty, and alumni.

According to *In-plant Impressions'* report *Equipment Investment Trends in the In-Plant Industry*, higher-education in-plants that have invested in or are planning to invest in inkjet presses have multiple motivations. According to the report, key reasons for inkjet investment include reducing printing costs, adding services for customers, increasing profit, staying ahead of the competition, and replacing multiple printing devices (Figure 1).

Top Motivations for Investing in Production Inkjet

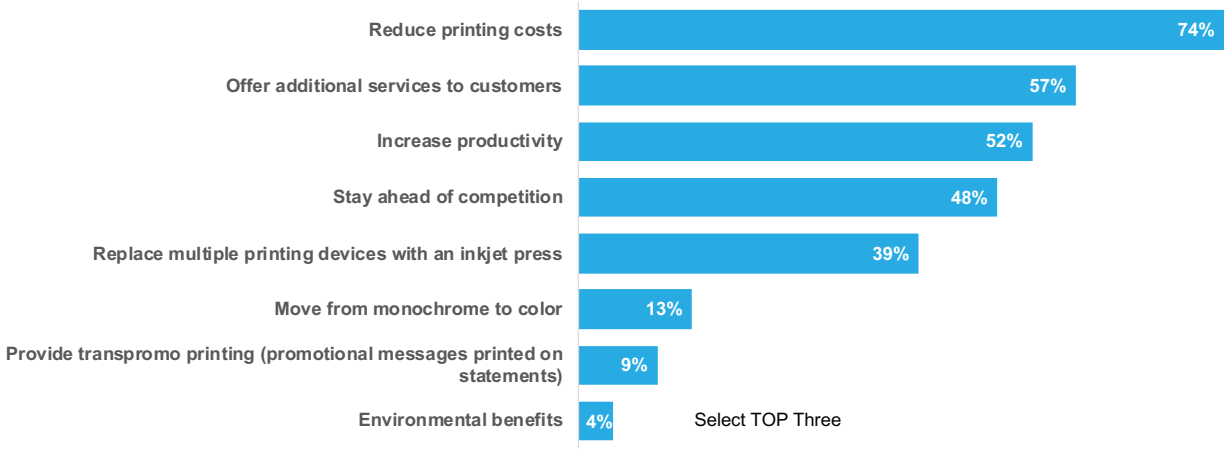

Figure 1
Q. What were/are your main motivations for getting a production inkjet press?
n=23 College/University In-plants that either have or are considering investing in production color inkjet
Source: Equipment Investment Trends in the In-plant Industry,
In-plant Impressions 2018
www.inplantimpressions.com/resources/

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In addition, this survey asked those in-plants that invested or planned to invest in inkjet to explain why they believed the investment was valuable. Higher-education in-plants offered the following:

- "It is the future, and we want to replace offset and some digital with inkjet."
- "The efficiency and cost are worth upgrading and over time can reduce costs for our university as well as increase our utilization."
- "The quality of print inkjet offers along with variable data printing."
- "Inexpensive to produce full-color."
- "Overall, it saves our university time and money to be able to do the work in-house. The print cost for inkjet is less than my click cost for black and white. The color quality is improving and becoming more acceptable for fundraising solicitations."
- "Would like to remain competitive with off-campus printers that utilize inkjet technology."

An Inkjet User Points to Benefits

Houston Independent School District (HISD) is one of the largest K-12 school districts in the U.S., and many of the print applications it provides to its 276 schools and 196,943 students are similar to many produced by college/university in-plants. Given its size and breadth of print applications, its experience in investing sheetfed inkjet — the in-plant added a Canon VarioPrint i300 to its fleet in July 2016 — offers useful insights for college/university in-plants considering investing in sheetfed inkjet presses.

A key reason for the school districts in-plant's move to inkjet was to improve teaching by adding inexpensive color to educational materials, and now about a third of the in-plant's volume is being printed on its i300.

HISD's Senior Manager of Administrative Services, Chuck Werninger, is an advocate on the benefits a sheetfed inkjet press delivers and shares his in-plant's experience at industry events, webinars, and article interviews. Here is a summary of important comments from Werninger on the benefits sheetfed inkjet delivered to his in-plant operation:

- Operating economics of inkjet enabled the in-plant to cut the cost of its color printing in half, which yielded a predictable increase in color demand.
- Full-color books with variable data can be produced at price points that are close to black-and-white production economics.
- When considering an inkjet investment, think beyond the print engine —inkjet changes so many other things. For example, changes in workflow at HISD resulted in jobs delivering within hours of receipt, not days.
- When a job comes to HISD's i300, one operator loads the paper on one end, then tapes the box of products at the other end.
- The in-plant has created new lines of work and expanded its print application offering because of the i300's speed and cost-effectiveness in printing full color.
- The shop is producing full-color teaching and learning materials that cost roughly 40% less than black-and-white options.
- Print volume is key to adding inkjet, and HISD prints one million images per month of combined black and white and color. The in-plant combined the volume of five different machines to run on the i300 and now has significant excess capacity. Before, the challenge was getting it all produced.

Sheetfed Inkjet Innovation Continues

Built on the success of the varioPRINT i-series platform introduced in 2015, Canon launched the varioPRINT iX-series in April 2020. For in-plants with production volumes of 1 to 10 million A4 images per month, the new press combines the image quality and media range of offset or liquid toner systems with the productivity and cost efficiency of inkjet. The varioPRINT iX-series features offset-like quality, highly reliable throughput, and sheetfed application flexibility.

The iX-series offers three key innovations:

- A breakthrough drying system combines air and heat with humidification to protect the paper. This enables robust prints on a wide media range, perfectly flat and ready for immediate finishing.
- New proprietary polymer pigment water-based inks and ColorGrip for outstanding, vibrant, and robust color on a variety of media, including coated stock up to 350gsm.
- The iX-series presses use 1200-dpi printheads co-developed with Kyocera that enable the printing of razor-sharp text and line details, smooth gradients, and near-perfect skin tones.
- Advanced nozzle uniformity control technology uses an inline scanner to automatically check and align single nozzles during the production run to help ensure optimal print quality. Automating printhead cleaning and quality assurance helps reduce the need for highly skilled operators, quality judgements, and printhead maintenance.

Production Inkjet Makes the Grade

Production sheetfed inkjet offers rich application and feature sets to meet the needs of higher-education in-plants. These presses offer in-plants the ability to meet the requirements of their various constituents for high-quality, affordable color, and engaging pieces that deliver results.

Investing in sheetfed inkjet also can buffer in-plants from outside competitive threats by helping to enhance productivity, reduce operating costs, enable more use of color, and permit the production of diverse applications.

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At Canon Solutions America, our mission is to improve workflow efficiency and document processes for organizations of all sizes and industries. We demonstrate this mission by earning the No. 1 position in total inkjet market share, both in the U.S. and worldwide, and also lead market share for web-fed inkjet. Through our cutting-edge technologies and media support, we know that no matter the application, we'll have your solution. Canon prides itself on bringing innovative inkjet solutions to market and supporting those solutions with robust customer training and a renowned reputation for 24/7 service and support. Canon recently won Keypoint Intelligence's "Outstanding Innovation Awards in Production Print" for their contributions in the production inkjet space.

To learn more, visit pps.csa.canon.com or email us at productionprint@csa.canon.com or call us at 1-877-623-4969.

WHO WE ARE

In-plant Impressions

In-plant Impressions is the only graphic arts magazine written specifically for the in-plant printing industry. Readers know they can trust In-plant Impressions to provide up-to-date, insightful articles designed to help them increase productivity, save money and stay competitive. The magazine is supplemented by our website and e-newsletter. IPI also produces videos, webinars and live events and conducts numerous research projects like this one throughout the year to better understand the in-plant market.

NAPCO RESEARCH

NAPCO Research crafts custom data-centric solutions that leverage our highly engaged audiences across the markets in which we operate, our industry subject matter experts and in-house research expertise. We partner with our clients to identify their unique business problem and create solutions that enable deeply informed decision-making.

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