

Best Practices In University In-Plants

University In-Plants: Meeting the Digital Challenge

A well run in-plant print operation can add value to an institution's mission and bottom line. However, it can be a challenge for an in-plant manager to obtain the funding and commitment necessary to implement an internal print operation that can do both. Yet at the same time, college and university in-plants project that their print volumes will continue to grow. In fact, according to a recent study by research firm InfoTrends,¹ nearly 60 percent of university respondents expect the amount of print produced at their internal staffed facilities to increase in relation to print produced with outside vendors over the next two years.

The logic is simple—in-plant production has been proven to

- save money;
- handle increased volume;
- meet user department turnaround time expectations; and
- exert more control over issues like security.

Most in-plant departments understand that it is important for them to participate in the digital transformation of the printing industry in order to be able to deliver the types of services that their customers expect and that will ensure future success for them and their institutions. Many are repositioning themselves as communications service providers and adding a range of ancillary services to better support their customer base. They are working hard to:

- **Return on investment.** Make technology investments that make sense for the shop and the institution and that can demonstrate a good return on investment
- **Meet customer demand.** Implement cost-effective, productive and streamlined workflows that ensure that they can deliver the fast turnarounds and high quality their customers demand
- **Customer partnership.** Expand the range of products and services they offer, and collaborate more closely with operating departments, including marketing, to define and deliver programs that generate a measurable ROI.
- **Reduce environmental footprint** by reducing both chemical consumption and waste generation

¹ *A Vertical Market Approach to Document Services in the U.S.: The Evolution from Printer to Partner, August 2006*

The Keys to Success

Keys to success for any in-plant, particularly those in the education arena, include:

- **Strategic direction.** Ensuring awareness of and alignment with strategic direction of the parent institution, including environmental initiatives
- **Business model.** Operation within either a cost-neutral or profit center business model; consider in-sourcing to further offset costs if extra capacity exists
- **Investments.** More aggressive investment in digital technologies designed to improve productivity and reduce costs while improving overall service to the customer base
- **Skill sets.** Upgrading of employee skill sets on an ongoing basis to ensure optimal operation
- **Services.** Integration of services beyond print
- **Customer input.** Outreach to customers on a regular basis to maintain a good understanding of current needs as well as emerging and/or unmet needs. Outreach should include building awareness of the services offered by the print shop as well as measuring customer satisfaction with those services.

In addition, successful in-plants are adding services and capabilities that allow them to increase the value of documents used by their constituents. They are making them more personalized or relevant, more secure and more impactful. They are advising their institutions relative to strategies that can deliver more effective marketing materials that generate an improved return on investment. And they stepping up to the plate to meet the tighter production schedules their customers are demanding.

Rethinking Print Manufacturing

Print service providers across the board are facing shorter run lengths and faster turnaround times, and as they examine their operations and develop strategies for the future, they must find ways to streamline workflow to be able to cost-effectively address this market shift. And especially in the environmentally sensitive college and university environment, they must be increasingly conscious of the environmental impact of their operations.

Research firm InfoTrends² reports that while jobs with run lengths of 10,000 or more are on the decline, there is growth in the 250 to 10,000 run-length range. In fact, many industry experts believe that 80 percent or more of four-color print jobs are produced in runs of 5,000 or less.

² *The Next Generation Digital Color Printing Opportunity*, InfoTrends, Inc.

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As a result, many plant managers are in the process of investigating technology investments that can reduce that labor component by improving productivity, removing steps from the manufacturing process, optimizing the consumption of materials.

Computer-to-Plate (CTP)

Clearly, one way to affect print manufacturing productivity is to migrate from film to CTP for shops that have not yet done so. By eliminating the film step, not only is the platemaking process cut in half, resulting in better prepress productivity, but pressroom productivity is improved as well. First-generation plates imaged with CTP technologies are more predictable, higher quality, and result in less waste during makeready and throughout the run due to tighter registration. If a new plate is required during the run, it is much faster to produce, slashing downtime that might result from such things as a damaged plate.

While implementing a CTP solution results in improved productivity and a reduced cost base, choosing a chemistry-free solution can take those gains to the next level, eliminating the cost and hassle of purchasing, storing, managing, reporting on and disposing of toxic chemicals. By removing the developing step, chemistry-free platemaking also reduces platemaking time, speeding the entire process of plate manufacturing. It has the added benefit of better aligning the print shop's environmental footprint with the environmental goals and objectives of most colleges and universities. This includes not only the elimination of chemistry, but reduced energy and water consumption as well.

DI® Digital Offset Presses

Another technology-based approach is to image the plates directly on press. The Presstek 52DI and Presstek 34DI [digital offset presses](#) utilize a totally automatic on-press imaging technology. All four plates are simultaneously imaged on press thereby eliminating manual intervention—such as the loading or unloading of plates in-between jobs—resulting in precise registration. The on-press plates are imaged with a laser and do not require chemical development or a plate processor.

The DI press also automates additional tasks from the amount of ink required per plate through to cleaning the blanket and plates. This automated changeover reduces the skills required to produce quality color printing. And, the press operator is freed up to perform other tasks, improving overall shop productivity while producing four-color makereadies in 10 minutes. The DI produces up to 300 lpi or FM (stochastic) screening on substrates ranging from onion skin to heavy card stock to synthetics.

These highly automated Presstek DI presses are easy-to-use and ideally suited for fast turnaround, high-quality color printing at a low cost per page for quantities from 250 to 20,000. According to InfoTrends research, the Presstek DI delivers a 50 percent cost savings on average per letter-size page when compared to

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production color toner-based digital equipment, and job profitability is more than 13 percent higher when compared to a conventional press.³

The Presstek DI provides additional environmental benefits with its waterless press design which eliminates what is typically the largest portion of a printer's VOC output—solvent-based press solutions. This benefit, combined with the DI's on-press chemistry-free thermal plate imaging and the automated ink cleaning functions reduce VOC output by up to 90 percent. Since DI printing does not use water, this not only conserves this natural resource, it also eliminates the chemically tainted wastewater normally associated with chemistry-based platemaking and conventional offset processes.

Web-to-Print

Finally, streamlining the way in which work enters the shop and communications with customers are handled is absolutely critical. A 2007 InfoTrends survey revealed that nearly half of print service providers are offering some form of web-to-print services today, with another third planning to do so within the next two years. More than 60 percent of respondents indicated these services improved their business, and another 54 percent indicated margin improvements since implementing print e-business solutions.

With web-to-print, in-plants can more efficiently receive and process work via the Internet or the university's intranet. Many of these solutions incorporate preflighting, meaning that less intervention is needed once the file is received. And they also offer the ability to establish catalogs of commonly printed items, making reprints easier. The added convenience and 24/7 access to the in-plant print shop makes it easier for users to take advantage of in-plant services, and can often reduce the amount of work that users might otherwise send to outside sources. Web-to-print solutions such as Presstek's PathWay, powered by Press-Sense, can be deployed quickly, cost effectively and with an operational flexibility that allows an easy migration path as business conditions change.

These steps address the entire print supply chain, from customer concept through delivery and invoicing, and are the backbone of rethinking print manufacturing in this digital age.

³ *U.S. Print On Demand Market Forecast: 2005-2011 and Presstek DI Printing Study*, InfoTrends, Inc.

In-Plant Benchmarks

There is evidence that college and university in-plants across North America are making significant progress in their efforts to revitalize their businesses.

According to InfoTrends research, they understand that they:

- Need a good Return-on-Investment (ROI) with increased productivity gains
 - 57.6 percent of shops in the educational environment operate as full cost recovery departments, with 8.6 percent operating as a profit center
 - Nearly 70 percent of InfoTrends respondents reported that the primary drivers for investments were to improve productivity and cost effectiveness or to replace obsolete equipment
- Need easy-to-use, efficient devices that make up time lost prepping files
 - Only 34.4 percent of files received electronically require no intervention or action, also the lowest ranking of any industry in the study; 30.9 percent of files require significant intervention.
- Need proven technology to produce full color
 - 60.3 percent of respondents believe their customers are moving more work to full color from black & white and 2- to 3-color
 - Only 15.7 percent of respondents categorized themselves as early adopters of technology, while 42.9 percent indicated that they wait until after the majority is using the technology and it is well-established
- Must ensure awareness of and alignment with strategic direction of the parent institution, including environmental initiatives
 - Over 60 percent of in-plants in education report to Central Administration, Operations or Finance

In addition, space is at a premium on college and university campuses, with institutional administrators striving to dedicate as much space as possible to activities directly related to students and their needs. In-plant print shops must also look for solutions that will help them generate more volume without requirement more space or headcount.

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There are a number of success stories from college and university in-plants that have taken steps to ensure a more productive and cost effective future. As they worked to better understand the strategic direction of their respective institutions, they determined that environmental sustainability was high on the list of strategic initiatives. With that in mind, they looked for solutions that would allow them to re-think their own print manufacturing through the implementation of chemistry-free CTP or DI digital offset printing by delivering:

- Improved productivity
- Reduced cost
- Environmental sustainability
- Compact footprint

Here are their stories.

Presstek DI Press Puts On-Campus Printing Service at the Top of Its Class

There is no policy mandating that departments have to use San Diego State University's on-campus printing service. Nevertheless, the in-plant shop found itself buried in a workload that exceeded its capabilities. With inefficient workflow, outdated equipment, turnaround times lagging behind clients' needs, and an inability to meet a growing demand for four-color printing, the University made major changes which transformed the print shop's operations into a model of digital efficiency. Now, a Presstek DI press is part of a better equation. By significantly improving productivity, turnaround and quality, the highly automated DI press is helping to ensure that the in-plant shop is the University community's first choice for meeting its printing needs.

San Diego State University (SDSU) hired industry expert Leslie Rutledge to bring about a transformation of its in-plant print shop. Rutledge recalls, "When I walked in the door on April 4, which is one of the busiest times for the shop, I found a shop that was operating with manual, paper-based processes and was having difficulty delivering to its potential. At the same time, we were preparing for commencement in May, needing to produce over 35,000 program books. The shop was wildly busy, but not operating efficiently."

Once she had commencement under her belt, Rutledge and her team began the long process of analyzing the current state of the shop and coming up with recommendations for reshaping it. Key among those recommendations was replacing the shop's antiquated CTP system and its two-color presses with a

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solution to better meet the increasing demand for high quality four-color printing. Over the next 12 months, SDSU replaced the two-color presses and their chemistry-based platemaker with an HP-Indigo 1050 toner-based digital press and a Presstek 34DI digital offset press for a completely digital workflow.

The Way They Were

SDSU was an early adopter of CTP, but by the time Rutledge took over managing operations, the shop's CTP device was out-of-date. Although it was still working, there was significant rework required because of poor quality plates. Additionally, because the laser imaging system used by the existing CTP system was obsolete, its failure would have represented a very expensive proposition—either a new laser would need to be manufactured or the shop would have to procure a new [CTP system](#). Rutledge says, “I was very concerned that one day we would show up for work and it simply would not be working. I wanted to be proactive in replacing it.”

Like most in-plant printers in a university environment, SDSU ReproGraphics has to deliver timely, competitive services in order to justify maintaining the shop. As customers increasingly looked for four-color printing, the shop's two-color presses were no longer meeting their needs. Rutledge explains, “Even if we replaced the platesetter, we still had the issue of trying to produce four-color printing on two-color presses and all of the inefficiencies and quality problems that go along with that.”

Equipment problems were compounded with manual job tickets and job tracking processes. Although, the SDSU print shop had installed Printer's Plan as an MIS system, it had been put to limited use. When she came on board, Rutledge found that new jobs were entered into the Printer's Plan system, but employees would then use the same information to handwrite a paper job ticket. This made it difficult to track jobs through to completion to ensure that deadlines were not missed.

Another area of opportunity for improvement was the University's process for ordering business cards. Rutledge says, “We were outsourcing business cards using the old-fashioned process. We would send copy to our provider. They would typeset it, fax us a proof, and we in turn would fax the proof to our customer. Some three to six weeks later, the customer would receive their cards. Not only was this a time-consuming process, but it could also be error prone.”

Beginning the Transformation

With the University's fiscal year beginning in July, one of the first things the ReproGraphics team did was make June 30th, the cutoff date for handwritten job tickets. To facilitate this transition, a Printer's Plan representative was brought in to train the entire staff of nine on the system. “This was not because I expected everyone to use the system,” she says, “but I wanted to make sure everyone understood how it worked and how important it was to our success.”

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I wanted them to be able to look at a job ticket and understand if there were problems with it.” SDSU upgraded its Printer’s Plan software and built a bridge from Printer’s Plan to the University’s Oracle software, its financial management system, for streamlined information exchange. “Just one example of how that has helped us,” she says, “is the ability to automatically transfer job data to Oracle for accurate charge backs.” Additionally, by the end of the first fiscal year, ReproGraphics had new systems and processes in place to ensure that every job is accounted for properly, with real-time status available.

Next, with the support of her Director, Lawrence Peralez, Rutledge and the ReproGraphics staff began investigating digital printing as a four-color alternative to the two-color presses. The team believed there was opportunity in variable data printing, and there was a significant volume of jobs that were ultra-short run. In the fall, the University installed an HP-Indigo 1050 and the print shop quickly increased its volume. Rutledge says, “HP rates that machine at 100,000 impressions a month. We have had it about a year and have already racked up over 2.4 million impressions.”

While the HP-Indigo addressed many of the shop’s color reproduction needs, there was still a gap in capabilities that needed to be addressed. “There were a number of longer run applications that were not cost-effective to produce on the Indigo due to the expense of click charges, and we still had the issue of our antiquated CTP system and the inefficiencies of using a two-color press to produce these jobs,” she points out. Additionally, the University uses a significant amount of letterhead, which must be offset printed due to the propensity for toner to melt when letterhead is run back through laser printers. “We have over 200 departments in the University, and each has its own customized letterhead,” she notes.



“Getting the approvals to invest in the DI wasn’t difficult...”

With that in mind, the ReproGraphics team began exploring replacement of the two-color presses. “I had been reading about DI presses in the trade magazines,” comments Rutledge, “and I was intrigued by them. Also, we were working toward being a completely digital shop, and a DI press would fit the model better than updating our [CTP system](#) and acquiring a conventional four-color offset press. Another attraction of the DI was the fact that it does not use any platemaking chemistry or fountain solutions, an important consideration here at the University.”

After looking at a number of options, SDSU decided to purchase a Presstek DI. She says, “We were impressed by the service and support that Presstek offered.” The team was also impressed with the quality produced by the DI press, especially its ability to produce high resolution line screens and print on the customary wide range of offset printing stock, and with the speed of the press. The team did an evaluation of the applications the shop was printing to ascertain

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how much of their work could be produced using the DI press. “Between the HP-Indigo and the Presstek DI, we knew we could produce about 90 percent of the work that comes our way, and the rest we could job out,” she concluded.

Getting the approvals to invest in the DI wasn’t difficult, according to Rutledge. Her Director, Lawrence Peralez, worked with university officials to explain the value of this leading-edge technology. With the on-press imaging feature of DI, the University did not need to replace its CTP unit, being able to condense both functions into one system. Rutledge’s proposal also highlighted the value of DI’s chemistry-free technology, in terms of lower ongoing costs attributable to a chemistry-free plate imaging operation and in reducing the University’s environmental impact. Like most universities, especially in California, SDSU constantly works to reduce its impact on the environment.

The Results

According to Rutledge, the press was installed on a Monday, and by Wednesday the shop was producing customers’ jobs. “The installation process was very smooth, and the Presstek team was terrific,” she says. “It was the right decision for us, and we have never looked back.” People cannot get over what we can do in the shop, and they are very impressed by the quality of work the DI produces.”

“We’re a small department, but we have implemented leading edge technology.”

With the DI press in place, the in-plant shop is producing timely, high quality four-color printing, including brochures, flyers, four-color invitations, newsletters, perfect bound books, media guides for athletics, calendars, and much more. Rutledge adds, “We are even producing large volumes of NCR forms for areas like Student Health Services, and 11x17 posters for the Theatre department and others.”

ReproGraphics is also producing longer run work on the DI more cost effectively and in shorter turn-around times than ever. She cites a 40,000 run of fact sheets for Enrollment Services and a 70,000 run of letterhead as examples.

To promote the shop’s new capabilities to the campus, the ReproGraphics team ran a campaign called “Blast Off Into the Digital Age” and hosted a series of open houses. Rutledge adds, “The turnout was great and seeing what we have to offer first hand generated a lot more sales for the shop.”

With all of the changes in the shop, including the addition of the DI press, SDSU ReproGraphics’ on-time performance is now at 95 percent. SDSU brought all production of business cards in-house and is adding an online ordering front-end. Bringing that production in-house has reduced order time for business cards from six weeks to a few days, or even the same day, and significantly reduced the number of errors. “In fact,” she says, “rework due to quality issues has virtually been eliminated. We have produced almost 500 business card orders alone since we implemented the new internal process.”

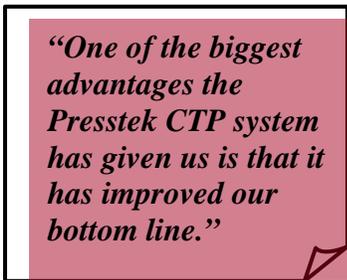
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Rutledge concludes, “We’re a small department, but we have implemented leading edge technology. Our pressroom is a model of efficiency and it is spotless. Our team takes a lot of pride in our digital transformation. It has injected new excitement and energy into the department.”

University of Maine Printing and Mail Services Touts Environmental Sustainability

The University of Maine, located in Orono, has been a staple of the Northeast academic community since 1865. Shortly after opening its doors, the University established its Printing Operations department with a Whitlock Cylinder hand press, and eventually moved up to Handtype. The department finally became mechanized with the installation of a Linotype machine in 1916. Things have progressed to the mainstream in printing today, with [CTP technology](#).

Tammy Young, Director of the Printing and Mail Services department (formerly the Printing Operations department) oversees about 30 prepress employees and press operators in her department. The department operates six offset presses. “We run the gamut,” Young says, “from a two-color Jett envelope press all the way up to a four-color Heidelberg Speedmaster.” The department also operates Xerox 4110’s for black & white digital printing, as well as a Xerox DocuColor 240 for ultra short run color work.



“One of the biggest advantages the Presstek CTP system has given us is that it has improved our bottom line.”

As an in-plant printer at the University, Young’s department is responsible for all printing on campus. “All of our offset presses are supported with Presstek’s chemistry-free plates,” says Young. “We do it all here, from our 32-page full color quarterly magazine to all brochures, flyers, envelopes and business cards for the University. We are an auxiliary enterprise, so we are not funded by the University. We are a separate business operating on campus. But we are very cognizant of the goals and objectives of the University, working hard to align our operation with the University’s needs.”

Young’s department installed Presstek’s Dimension800 chemistry-free CTP system several years ago after exhaustive market research, attending both trade shows and manufacturers’ demonstrations during the investigative process.

“Our research revealed many options,” comments Young. “We looked at all of the primary players like Agfa and Heidelberg, but we wanted a system that was totally chemistry-free. Presstek was the only choice at that time, and we believe continues to be the best choice today.”

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“One of the biggest advantages the Presstek CTP system has given us is that it has improved our bottom line,” Young states. “Because we are turning things around more quickly, we are able to pass along the savings to the customer, who is really the benefactor at this point. But perhaps the most important benefit, which has increased in value over time, is the environmental friendliness of the system. We are continually asked what we are doing to enhance our environmental sustainability, and the Presstek Dimension has given us a tremendous story to tell in this regard.”

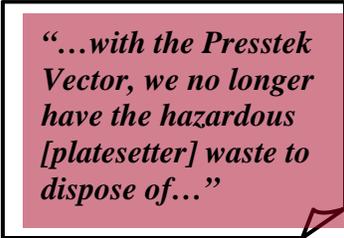
Young reports that other big advantages to the department include increased accuracy as compared to film and reduced material costs, including elimination of the need to acquire, manage, store and dispose of chemistry. “Another important factor is the high contrast, visible image that can be seen once the plates are imaged,” adds Young. “We include the job number on every plate, and we often store plates for reprinting. The Anthem Pro plates from Presstek have been very reliable and can be handled safely in daylight conditions. It is helpful to be able to easily see both the image and the job number on the plate.”

Young reports that the Presstek Dimension has been very reliable. “We have plenty of capacity to keep up with our six presses,” she says. “And we can proudly say that we are running a chemistry-free operation, saving trees and protecting the environment.”

Productive Printing at Penn State University

Hershey Medical Center is part of Penn State University. It is a clinical and teaching hospital and includes a research center. Serving Central Pennsylvania, the Medical Center also has 10 University Physician Group locations across the region and provides a wide range of high quality medical services. The Center takes pride in the fact that seven of its specialists are rated in the top one percent of the physicians in the nation.

To support its printing needs, Hershey Medical Center has a small in-plant print shop operation equipped with four small format presses. The shop had already made the transition from film-based platemaking to CTP with the installation of a polyester platemaker. According to Dale Travitz, Group Leader, “Moving to CTP was a dramatic change for us and improved our productivity significantly. But as demand for four-color printing continued to climb, we found that polyester plates were not stable enough to deliver the level of quality our users expected.” The print shop at Hershey Medical Center had been a long-time customer of ABDick, now integrated into Presstek, and considers Presstek its supplier of choice. Travitz turned to Presstek to determine what options were available to migrate to metal plates.



“...with the Presstek Vector, we no longer have the hazardous [platesetter] waste to dispose of...”

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After learning about the Presstek Vector system from his Presstek sales representative, Travitz believed the system would be a good match for his needs from a price/performance perspective. He says, “We felt the Vector would deliver the stability we needed. An added bonus was its small footprint and chemistry-free operation. As you can imagine, the University is very concerned about environmental sustainability, and with the Vector system, we no longer have the hazardous waste to dispose of that was associated with our previous platesetter.”

The Hershey Medical Center print shop produces everything from brochures and flyers to newsletters and forms. Travitz indicates that only very long runs are outsourced, with the shop accommodating the majority of the Center’s printing needs.

Because the Vector system uses the same Harlequin workflow the shop was already using with its polyester platemaker, Travitz reports that it was a smooth transition to the Presstek Vector with an almost identical workflow. He adds, “Training was a non-issue for us.”

According to Travitz, as with many in-plant print shops, printing is not a core business for Hershey Medical Center, and budgets must be carefully managed. “While we would love to purchase a four-color press with a coater,” he adds, “that is not likely to happen in the near term. Our objective was to be able to deliver the best possible four-color quality from our installed base of two-color presses, and the Vector system is helping us do that. Since installing the Vector, the quality of our four-color process work has increased significantly.”

Howard University Goes Environmental

Printing at Howard University, one of the nation’s ranking universities, has gone “green,” and Larry Reese, director of the in-plant print shop at the Washington, D.C. school, couldn’t be more pleased.

The 10,000-student University, the largest and most prestigious of the nation’s Historically Black Colleges and Universities, a year ago went to chemistry-free plates from Presstek and the results have been better printing quality and lower costs. “Chemistry-free is beautiful,” Reese said. “We are saving \$5,000 per year just on chemistry disposal, and the University is very happy about our reduction in environmental footprint.”



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The University’s print shop prints just about everything for the institution and generally coordinates outsourcing when that is required. The shop has four presses, a 19”x 26” two-color Shinohara perfecter, a two-color Heidelberg Quickmaster, a Heidelberg single color, and a Ryobi two-color. Eighty percent of the shop’s work is two-color to accommodate the University’s colors.

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The University print shop was using a film-based platemaking solution to support its four presses, but Reese and his team wanted to improve efficiency and cost by moving to CTP. They were also interested in eliminating as much hazardous chemistry as possible.

“We looked at two or three different options,” Reese said. “We were happiest with the Screen PlateRite 4300 and Screen’s TrueFlow workflow and were delighted to learn that we could use Presstek Aurora Pro chemistry-free plates with the Screen PlateRite platesetter and eliminate chemistry entirely from our platemaking process.”

The pressmen love the Presstek Aurora Pro plates, with their tight registration and faster run-up, Reese said. “Our next step is to acquire a four-color press, and this configuration sets us up perfectly for that,” he said. “In addition, we have been able to increase our revenue by bringing a lot of work in-house that we were previously outsourcing. It has been a big win for the University.”

In Summary ...

These stories represent just a few examples of how in-plant operations in the college and university environment are benefiting by moving to chemistry-free platemaking and automating offset printing with Presstek DI presses. Not only are they able to align their operations with the environmental goals of their institutions by eliminating chemistry and waste, they are also able to provide more effective services to their constituencies by reducing turnaround times and cost while at the same time improving the quality of their output.

To learn more about how college and university in-plant operations are leveraging Presstek technology to become more capable and profitable while increasing customer satisfaction levels, please visit www.presstek.com or contact Presstek directly.

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