The Automation Advantage at In-plants Amidst Labor Challenges

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The last thing an in-plant wants is to be operating at a deficit. With an ongoing need to demonstrate value as an internal print center that provides advantages over outsourced print work, an in-plant should have a full complement of employees on board to keep the shop running at its peak efficiency. The challenge in today's environment, however, is that available labor is at a minimum and print service providers nationwide are struggling to fill open positions. At in-plants, automation has become a hot topic as managers look toward technology to take on tasks once filled by staff members.

In a 2023 *In-plant Impressions* study "Equipment Installations and Applications at In-plants," 43% of respondents reported they have at least one open job position. And while having one or two open job positions may not seem like too much cause for concern, 38% of respondents also indicated their shops only employ between one and five people, making any job opening a major loss to an operation.

This report will assess and analyze the current labor landscape's impact on the overall printing industry, and in-plants specifically. Additionally, strategies for combating the ongoing labor shortages will be explored, with a focus on how automation is on the rise in print production and is being strategically implemented at in-plants to maintain their efficiency despite reduced staffing levels.

UNDERSTANDING THE LABOR SHORTAGE AND ITS EFFECTS ON IN-PLANTS

The labor crunch is creating pains that are being felt in all industries. But in manufacturing segments in particular, the ability to attract, recruit, and retain high-quality employees has become a major challenge. In printing, an industry that has faced its own recent workforce struggles, part of the problem is that there is a diminished pool of available labor to fill positions with.

According to the Bureau of Labor Statistics' August 2023 Employment Situation report, the overall unemployment rate in the US remained comparatively low at 3.8%. While a low unemployment rate is typically a sign of a healthy economy, particularly after the high unemployment rates that occurred during the peak of the COVID-19 pandemic, it also means that employers looking to fill open positions will likely not have a wide selection of candidates to choose from.

The problem becomes magnified in manufacturing, as the United States Census Bureau reports that approximately 1.4 million manufacturing jobs were lost during the pandemic. But, the Census Bureau reports, the problem will get worse in the years ahead, with a projected 2.1 million open jobs by 2030, which has led the Bureau to go as far as calling the situation a "potential labor crisis."

At in-plants, managers have had to find ways to continue to meet demand while open positions persist. For example, in an interview last year with *In-plant Impressions*[1], Frank Oliver, print shop supervisor for the Delaware-Chenango-Madison-Otsego Board of Cooperative Educational Services in Norwich, New York, said his shop had two open positions that had been advertised via signage

[1]*Dan Marx, "Short-Staffed: How In-plants Are Coping With Vacant Positions", In-plant Impressions, March 16, 2022, inplantimpressions.com/article/short-staffed-how-in-plants-coping-with-vacant-positions*

and a local newspaper for a full year. In an unprecedented turn of events, Oliver said he did not receive a single application. The impact of being short-staffed, Oliver said, is the in-plant struggling to make its deadlines and operating one-third below prepandemic levels.

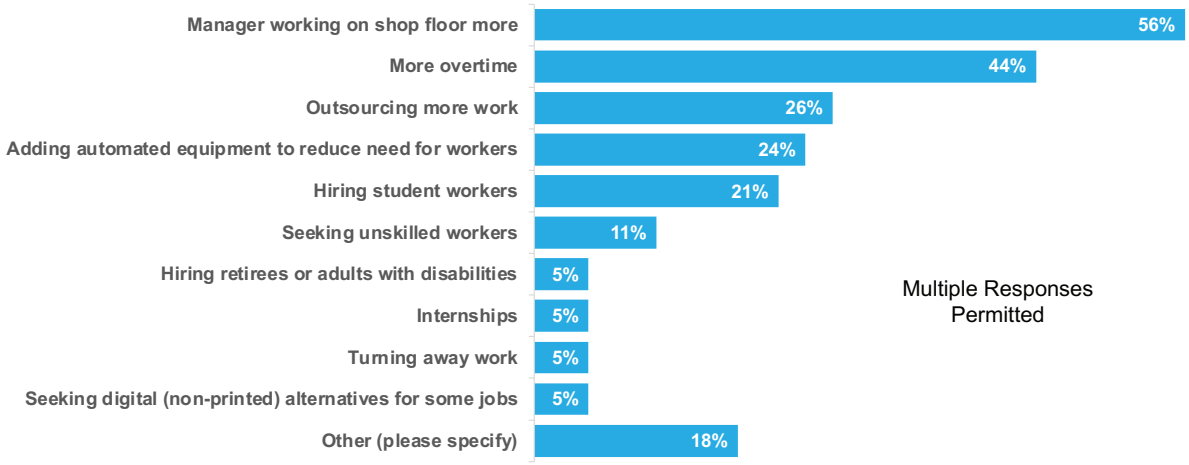
The lack of available labor, however, does not mean that in-plants are turning away work, and Oliver shared that his in-plant is working with customers to adjust their expectations given the current climate. Similarly, Louis Ferrel, director of communication services for the Houston-based Metropolitan Transit Authority of Harris County, stated that despite having two open positions, his in-plant has had to place extra emphasis on utilizing the resources it has to get jobs done. In the meantime, In-plant Impressions1 reported the department is paying overtime and looking into automation capabilities.

"We have not stopped," Ferrel told *IPI*. "And we're running the heck out of what we have."

HOW IN-PLANTS ARE COMBATING THE LABOR SHORTAGE

For in-plants with open positions, implementing automation has emerged as a top strategy. Nearly one-quarter of respondents (24%) state they are coping with their situation by adding automated equipment to reduce their reliance on workers. However, for the majority, finding quick and available solutions to deal with the immediate difficulties seems to be the priority. In the Equipment Installations and Applications at In-plants study, 56% of respondents that reported (Figure 1) having at least one open position stated that the in-plant manager is working more on the shop floor. Additionally, 44% of respondents stated they are paying more overtime.

Figure 1: **Strategies for Addressing Staff Shortages**



Q. If you have open positions, how are you coping? Select all that apply.
n = 85
Equipment Installations and Applications at In-plants, 2023.

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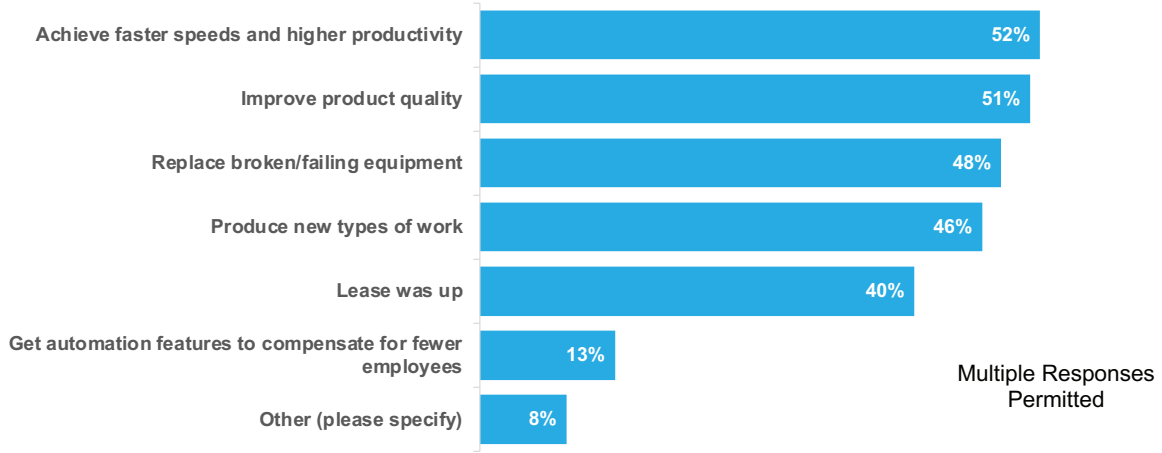
While these solutions may be effective in the short term, they should not be viewed as fixes for the long haul. For example, a manager helping on the shop floor will eventually have noticeable ramifications. Managers are needed for important administrative tasks and must maintain oversight of the in-plant, including production, customer service, and accounting. If they are taken away from their administrative tasks for too long, the in-plant may fall behind in those areas.

Meanwhile, paying more overtime may be an attractive option for existing employees who may be willing to put in the extra hours for higher pay. However, managers should not rely on overtime as a long-term solution. For example, even the most dedicated employee will have obligations outside of work that may prevent them from taking overtime hours. Additionally, employees who consistently put in more than 40 hours per week are liable to experience burnout and may see their job performance suffer.

INVESTING IN AUTOMATION

For in-plants actively investing in new equipment, the need for efficiency and productivity is paramount. When respondents that stated they had made a recent investment in new equipment were asked why they made the purchase, 52% said it was to achieve faster speeds and higher productivity. In addition to the need for in-plants to provide fast turnarounds for their companies, more efficient equipment can help reduce the amount of required operator oversight, freeing up operators to take on other tasks as the press is running.

Figure 2: **Top Reasons for Investing in New Equipment**



Q. Why did you choose to get new equipment? (Chose top 3 reasons)
n = 112 respondents that had made a recent investment in new equipment
Equipment Installations and Applications at In-plants, 2023.

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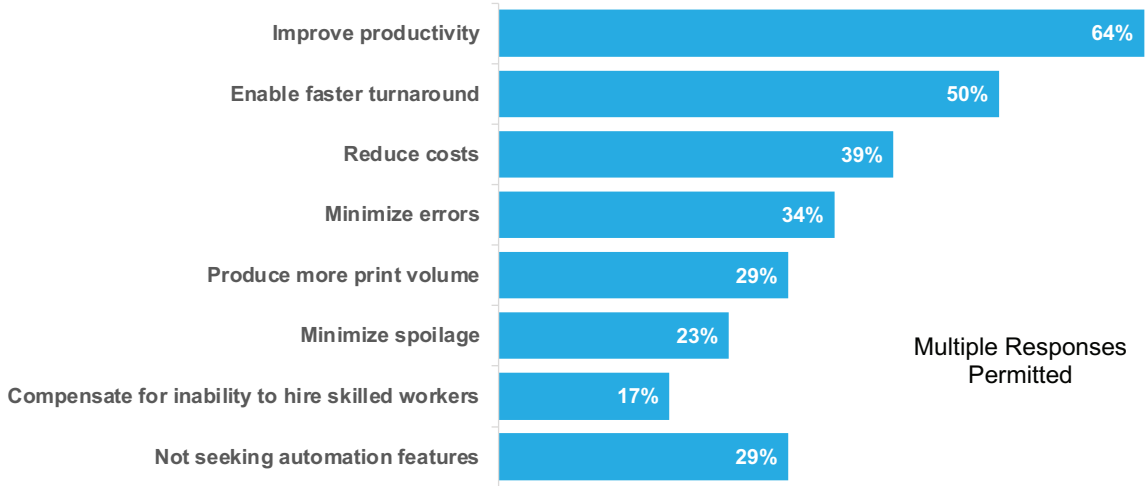
While just 13% of respondents that made a recent equipment investment stated that acquiring automation features to compensate for fewer employees was in their top three decision drivers, it is clear that in-plants are recognizing the need to utilize their existing employees in a more efficient manner. Increasing speeds and enabling quicker turnarounds to meet customer demands is undoubtedly a key component of an in-plant's success, and investing in new equipment that boasts fast run speeds can help maintain a competitive in-plant.

But what in-plants should understand moving forward, is that efficiency is not entirely about run speed, and adding automation components in production can result in desired efficiency gains while reducing human touchpoints.

In fact, when asked to indicate the reasons why they may be exploring automation features on equipment or in their workflow, only 29% of respondents stated they were not actively seeking out automation features. Meanwhile, 64% of respondents stated they were exploring automation to improve their productivity, while half of respondents selected faster turnarounds as one of their main drivers. Other top selections included:

- Reducing costs (39%)
- Minimizing errors (34%)
- Producing more print volume (29%)

Figure 3: **Reasons In-plants Investing in Automation**



Q. Are you actively seeking automation features on equipment or workflow automation for any of the following reasons? Select all that apply.
n = 152
Equipment Installations and Applications at In-plants, 2023.

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While in-plants have a variety of reasons for exploring automation opportunities, it's important to understand what sort of automated equipment and software is available and how it can provide the desired results, especially when short staffed.

NAVIGATING AUTOMATION FEATURES AND OPPORTUNITIES

Though evidence indicates in-plants are recognizing the importance of automation, particularly at a time when shops are operating with open positions, it is important for managers assessing automation to understand the types of features available.

Digital print solutions are largely leading the way in automation, as their digitized workflow lends itself well to reducing human intervention. While conventional print platforms are also becoming increasingly automated in aspects such as color management, cleaning, and changeovers, highly mechanical processes like offset and flexographic printing still require skilled operators overseeing production and managing the machinery.

While production inkjet is in still in its early stages of adoption at in-plants, those that have invested in the equipment have appreciated its ability to replace multiple existing assets on shop floors and reduce reliance on operator intervention. For example, as *In-plant Impressions*[2] reports, after ISU Printing Services, the in-plant at Iowa State University, installed a Canon varioPRINT iX3200 sheetfed inkjet press in June of 2022, the in-plant's workflow has been significantly simplified. For example, Nathan Thole, director of ISU Printing Services, shared that prior to investing in the equipment, the shop ran monochrome and color pages of course materials on different devices, followed by hand collating. Now, all the shop needs to produce the work is the inkjet press.

"We ran it all in one pass on this machine — at three times the speed — and we got the job done weeks ahead of when we said we were going to," Thole told *In-plant Impressions*[2].

He added that hiring operators for the in-plant's offset press is becoming increasingly difficult, and with the addition of the varioPRINT iX3200 inkjet device, fewer jobs produced by the in-plant will require offset production.

Similarly, at Penn State Health's Hershey, Pennsylvania in-plant, Manager Craig Seybert has seen his shop's installation of a Canon varioPRINT iX-series press reduce the number of devices the in-plant has to rely on for certain jobs.

"Some of the benefits that the iX brought to our operation were definitely fast turnaround times," Seybert said in a video with *In-plant Impressions*[3]. "Jobs that used to take two to three days to run on our toner-based equipment, now we can get done in one shift. Basically, it has quadrupled our output capabilities from our two toner devices, so our workload has stayed the same, but our production hours have dropped, which gives us better turnaround time overall."

[2]*Bob Neubauer, "Inkjet Comes to Iowa State," In-plant Impressions, September 21, 2022, inplantimpressions.com/article/inkjet-comes-iowa-state*
[3]*Craig Seybert interviewed by Bob Neubauer, "Penn State Health Thriving With New Inkjet Press,"* In-plant Impressions, *April 6, 2021, inplantimpressions.com/video/tours-interviews/penn-state-health-thriving-with-new-inkjet-press*

Additionally, Seybert shared that Penn State Health's use of Canon's PRISMAprepare document preparation software has helped make operators' lives easy and help reduce the amount of time they typically have to spend on various manual tasks.

"A lot of the advantage that PRISMAprepare brings to us is the ability to set up hot folders so that no matter who the operator is on the equipment, they can drop jobs into a hot folder and everybody is going to be running similar jobs the same way," he said. "It gives the operators the ability to make edits to impositions, move pages around if they need to, and easily assign multiple stocks to jobs, which is something that we do quite frequently. So, it just has taken a lot of difficult tasks for the operator and made them a simple click of a mouse."

RECOMMENDATIONS AND CONCLUSIONS

With all industries faced with challenging labor prospects caused by a diminished pool of available workers, in-plants are seeking to fill the void caused by lingering open positions. With in-plants already struggling to attract employees into their shops, the current low unemployment situation has created an outsized demand for staff and a limited supply.

Research conducted by *In-plant Impressions* and NAPCO Research indicates that many in-plants are operating with open positions and are taking measures that are not sustainable for the long term. Managers spending more time on the shop floor and paying out more overtime should not be viewed as long-term fixes to the problem, especially when it can be eased via automation.

Investment in digital printing solutions that have automation features spanning color management, maintenance, and cleaning, can make operators' lives significantly easier, while the technology frees them up to take on other creative or problem-solving tasks that are done better by humans. Meanwhile, workflow software that lends automation to color consistency, prepress, and machine connectivity can give managers the peace of mind that their shops are operating at their peak efficiency with a reduced headcount.

Running an in-plant print shop at high proficiency while providing top quality results with fast turnarounds, especially with a reduced staff, is not an easy prospect. However, with the right tools and investment in automation, in-plants can face the future with confidence, backed by technology.

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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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Canon U.S.A., Inc. is a leader in digital imaging and printing solutions with one of the broadest portfolios in the industry, offering solutions such as digital presses, production ink-jet presses, wide-format printers, workflow solutions and professional services. With approximately $30.3 billion in global revenue, its parent company, Canon Inc. (NYSE:CAJ), as of 2022 has ranked in the top-five overall in U.S. patents granted for 37 consecutive years†. Canon U.S.A. is dedicated to its Kyosei philosophy of social and environmental responsibility.

To learn more about Canon, visit us at www.usa.canon.com.

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