ATIP and HP keep packaging lines up and running

hp

When Hewlett-Packard was looking for ways to increase uptime on its packaging lines, it turned to its own technology—and AT Information Products—for help.

hp invent

A master carton printed with dates, bar codes and package codes rolls off the line at HP Puerto Rico.

In search of uptime

It takes a special kind of printer to meet the demands of a modern packaging line. Thousands of boxes flow through the line every day, and each one must have bar codes, install-by dates and other tracking information printed clearly on its side. Even a few minutes of downtime can cause costly delays; time lost to printer failures and maintenance is money wasted.

At the Hewlett-Packard product completion center in Richmond, Virginia, the piezoelectric printers on the packaging line clogged frequently, requiring messy ink purges and sometimes new printheads. "It was time consuming," says Kyle Young, who runs the line. While technicians troubleshoot the problem, the line would shut down for at least 15 minutes—and that was the best-case scenario. If the problem was more complicated, the line could stop for as long as three hours. That translated to hundreds of boxes sitting on the line.

HP was looking for a solution to this problem when it decided to transfer a pair of packaging lines from Richmond to its Puerto Rico manufacturing facility. Senior management asked packaging engineer Brad Vasel to find ways to reduce costs and increase uptime on the lines before the transfer. One of Vasel's first targets was the printers.

Creative partnership leads to solution

A creative partnership between HP's Specialty Printing Systems (SPS) and AT Information Products (ATIP) provided a solution for HP. SPS collaborates with original equipment manufacturers to create innovative applications for HP thermal inkjet (TIJ) technology. In this case, ATIP developed the AUTOPRINT® package coding system, which brings the advantages of TIJ technology—speed, print quality and reliability, to name a few—to a package coding application. AUTOPRINT printers are made to print at high speeds on unit chipboard cartons and corrugated master cases with just-in-time product codes. Vasel and his team of engineers liked the fact that the ATIP printers were designed specifically for use on packaging lines, and they knew that the HP technology inside was excellent.

HP technology gets results

Considering that ATIP and HP were already business partners, you'd think it would be a slam dunk for ATIP to place its printers on HP packaging lines. But ATIP had to prove itself in a qualifying test that examined factors such as decodability, symbol contrast and bar code grade. AUTOPRINT aced the test. The AUTOPRINT CCC106 created dates, package codes and bar codes at 300x600-dpi clarity on corrugated cardboard boxes— a significant improvement on the 150-dpi resolution of the piezoelectric printers. HP engineers were able to reproduce both A-grade and B-grade codes with high decodability in accord with standards set by the American National Standards Institute (ANSI). The results were so good that HP didn't need to use its 600x600-dpi capability.

HP TIJ technology is the secret to this great print quality. Every HP inkjet print cartridge combines sophisticated printheads with HP's precisely engineered, fast-drying inks. Because the printheads and the ink are designed to work together, they produce consistently high resolution at

high printing speeds. And because each cartridge comes with a new printhead, you change the printhead every time you change the ink. There's no worry about poor print quality because of worn printheads.

But excellent print quality is only part of the story. HP TIJ cartridges are quick and easy to replace, so they're practically maintenance free. There's no need to power down the whole line to change a print cartridge. Operators just pop out the old one and put in a new one—it can even be done between boxes on the line, with virtually no downtime. "The HP print cartridges are ready right when you turn on the line," says Young. "There's no delay."

Operators like working with the cartridges because they're clean. The glycol-based ink in the piezoelectric printers emitted strong fumes, so ink purges were messy and unpleasant. By contrast, HP's water-based inks are neatly contained in recyclable print cartridges.

ATIP's architecture offers flexibility

ATIP's architecture allows for serial communication with a network, which provides great flexibility in configuring printers within a manufacturing environment. That made it easy to fit AUTOPRINT printers into HP's systems, including a complex quality-assurance system that prevents mislabeling of boxes. "The quality-assurance system is a major hurdle for any coding solutions to pass before they can be qualified for HP manufacturing facilities," says Vasel. Other printers tested by HP in the past could not clear this hurdle; none had been able to deliver both high print quality and the ability to communicate with HP's computer systems in the way AUTOPRINT could.

Performing well in Puerto Rico and beyond

Since being installed in Puerto Rico in October 2003, AUTOPRINT has been performing well. The line runs 24 hours a day, five days a week, and processes several thousand large master cartons every week. "Performance has been excellent," says Jose de la Rosa, the HP packaging engineer who runs the line. "Compared to the printers we've used in the past, the difference is huge. We've had basically no downtime since the line was installed." Thanks to ATIP and TIJ technology, employees are spending time running the packaging line instead of fixing it, and that increased productivity adds up over time, making the total cost of ownership for AUTOPRINT a bargain.

This kind of performance is turning heads within HP. Kyle Young was so impressed with the ATIP printers that he ordered AUTOPRINT systems for other packaging lines at the HP facility in Virginia. In addition, AUTOPRINT systems have been installed at other HP facilities, and HP plans to install more.

New coding standard for HP inkjet cartridge manufacturing facilities

HP is so satisfied with ATIP's solid performance that ATIP printers have been specified by HP engineers as the coding standard for all future HP inkjet print cartridge production lines. It just seems right for HP to use its own TIJ technology to code boxes full of TIJ print cartridges.

"We're proud of TIJ technology," says Vasel, "so it makes sense for us to practice what we preach by using it in our own manufacturing facilities."

SPS partners

ATIP is a leading developer of turnkey systems using HP inkjet technology for on-demand package identification, which the company markets under the AUTOPRINT® trademark. Visit the company online at www.atip-usa.com.

For more information about HP's partnership with ATIP, contact Jeff Norton, Marketing Development Manager, HP Specialty Printing Systems. 858/655.3879 jeff.norton@HP.com

Challenge

- Eliminate messy, time-consuming and costly printer maintenance on packaging line.

- Increase uptime on packaging line.

- Find package coding system that fits into complex manufacturing systems.

Solution

- The AUTOPRINT® package coding system uses clean, low-maintenance HP thermal inkjet print cartridges.

- AUTOPRINT uses HP thermal inkjet technology for fast, high-resolution package coding.

- AUTOPRINT allows for serial communication with a network.

Results

- HP employees are running packaging lines, instead of fixing them.

- HP packaging line in Puerto Rico has had "basically no downtime" since installing AUTOPRINT.

- AUTOPRINT communicates effectively with HP's complex quality-assurance system.

For more information about HP Specialty Printing Systems and our partners in package coding, please visit us at
http://www.hp.com/oeminkjet/