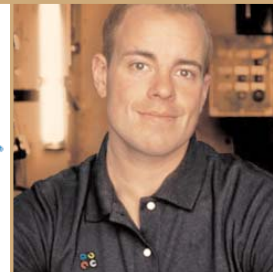


LXE Mobile Computers Streamline Production Flow at Quad/Graphics

CASE STUDY

QUAD/GRAPHICS. Each week tens of millions of readers nationwide rely on Quad/Graphics to get their favorite magazines and Sunday newspaper inserts to them on time. Quad Graphics is one of the largest printers in the world and operates production facilities all over the country. With millions of time-sensitive printed pieces due out each week, Quad Graphics can't afford to stop the presses. The company relies on wireless networks to keep its production facilities running, and installed LXE mobile computers to get them running more efficiently.



Fleets of forklifts are in near-constant motion at the Quad Graphics plant in Lomira, Wisconsin, where presses run 24/7. Forklift drivers deliver supplies and clear completed pallets from the end of the press to make room for more. Drivers always worked hard to cover the more than 2-million-square-foot facility, but they didn't always work as efficiently as they could. Supply requests came to drivers via forklift-mounted LXE VX7 computers. When they weren't delivering supplies, "They would drive around visually looking for the next thing to do," said Alan Leszczynski, IT project manager at Quad Graphics.

"Our forklift drivers basically drove around looking for completed pallets to pick up. They were doing a lot of deadheading, which isn't very cost effective," he added.

The process was not timely for clearing completed pallets from the end of the production lines, and did not make the most efficient use of Quad Graphics' drivers and forklifts. Bundle technicians at the end of each line often had to work in crowded conditions. To streamline pickup operations, Quad Graphics began planning an automated system to take pallets from production to storage.

The project was stopped in its tracks after Quad Graphics completed a process analysis that triggered a new idea for managing pallets: equipping bundle technicians with handheld computers they could use to signal pickup requests to drivers.

The plan leveraged the legacy wireless LAN, which features Cisco's lightweight access points (LAPs) and would only require adding handheld computers, instead of expensive automated guided vehicles. Quad Graphics loved the concept, but needed confidence that handheld computers could perform reliably in the sometimes harsh environment of the manufacturing

floor. It turned to Miles Data, which had integrated the forklift wireless computing system, for ideas and assistance.

"It's a no-brainer when it comes to how much money we're saving," said Leszczynski. "We canceled the automation project because of the ROI we found from the handheld system. It helped us improve productivity with our existing equipment, so we didn't have to go through the expense of outfitting our facilities for further automation."

Quad Graphics and Miles Data worked together to identify product options. Two vendors were invited to provide units for a trial. One vendor had the inside track because its handhelds were used elsewhere in the facility. But the bundle technicians, the ultimate users of the handheld, expressed a much stronger preference for LXE's MX7 rugged handheld computers, which ultimately won the day.



"Our users really liked the layout of the LXE keyboard and excellent clarity of the screens. The function keys were especially easy to use, because they can be reached with one hand. Plus, the LXEs have a vibration feature, which is great for us because our facilities are very loud and we were concerned our workers wouldn't hear a confirmation beep," said Leszczynski. "LXE came out as our users' preference by far."

The MX7 has an IP65 protection rating, which means it is sealed against dust and can withstand water jets. The 21-ounce handheld also withstands multiple 5-foot drops to concrete and has an optional rubber enclosure for more protection. The MX7 runs the Microsoft Windows CE 5.0 operating system, supports



secure 802.11b/g wireless LAN connectivity, has a bright, 3.5-inch color display, and offers a 55- or 32-key keyboard, including user-definable function keys.

Durability was a key equipment requirement because of Quad Graphics' high-volume operations. LXE's reputation for reliability, plus Miles Data's status as a certified LXE service provider, were differentiators in the equipment evaluation and important factors in the decision.

Im-press-ive Improvements

Now when bundle technicians complete a pallet at the end of the production line, they use the MX7 to scan the pallet's bar code label and enter a pickup location. The transaction is communicated over the wireless network in real time to the host system, which then sends a pickup request to a forklift driver. Activity is now directed and can be assigned to the nearest available forklift, which has proven to be much more efficient than having drivers cruise for finished pallets.

Wireless signaling made an immediate and dramatic improvement to productivity for both bundles technicians and forklift drivers. The handhelds could have provided full ROI before they were even installed because of the money they saved Quad Graphics compared to adding further automation. They've also led to direct reductions in labor and operating expenses.

"We were able to reduce our headcount by one worker per press, per shift," said Leszczynski. Many of these workers were temporaries, relieving Quad Graphics of the burden of frequently staffing and training for the positions.

The project also expanded in scope. Now wireless signaling is also used in finishing, where work-in-progress pieces are bound together to create the finished publication.

"Our production is definitely more consistent now that production drives replenishment," said Leszczynski.

"Our finishing areas get what they need when they need it, instead of when the forklift drivers think they need it."

The system was so successful that it is being expanded to hundreds more production lines at multiple facilities. LXE and Miles Data are again being called on to provide reliable products and integration expertise.

"We simply can't afford downtime. The installation has to be smooth, and the system has to be reliable," said Leszczynski. "The project went well. There were very few hiccups, and any we did have Miles Data and LXE got on top of right away before anything became a major issue."



About LXE Inc. LXE Inc. improves supply chain performance by applying over 36 years' experience developing wireless products and solutions. From wireless computers, advanced auto-ID technologies, and wireless network infrastructure, to our award-winning customer support - LXE's easy-to-use products are as reliable as the people who install and support them.

Based in Norcross, Georgia, LXE also offers a full range of turnkey services, including radio integration, project and installation management, network design, technical support, and repair services. LXE is a wholly-owned subsidiary of EMS Technologies, Inc. (NASDAQ: ELMG), and has offices worldwide. For more information, visit www.lxe.com.