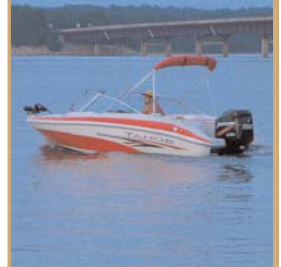


# LXE and Miles Data Help Propel Mercury Marine to New Parts Distribution Efficiency

## CASE STUDY

**MERCURY.** - Mercury is the world's leading manufacturer of marine propulsion systems. The success of Mercury Marine has not occurred by chance. Since the company was founded in 1939, Mercury has consistently emphasized quality, innovation and reliability. That pledge remains as strong today as ever. Mercury Marine, a division of Brunswick Corporation of Lake Forest, Ill, began as the Kiekhaefer Corporation of Cedarburg, Wis., when Carl Kiekhaefer and a small but dedicated staff of employees sought to design and produce the best possible boat engine.



*Whether they are fishing, water skiing or just enjoying a day on the water, boaters rely on the power and performance of Mercury Marine engines to navigate them through all types of water. Mercury Marine relied on LXE and Miles Data to navigate its distribution center (DC) operations through a transition from legacy, DOS-based applications to wireless Web browsing.*

"Now, the power and performance of LXE vehicle-mounted computers drive parts distribution operations at Mercury Marine's DC in Fond du Lac, Wisconsin with the reliability and speed that Mercury's engines are known for. Mercury Marine is on track to meet or exceed its ROI target based on a 15 percent improvement in productivity and 99.5 percent of same-day shipments.

Mercury is the world's leading manufacturer of marine propulsion systems. In 2006 the company was named Wisconsin Manufacturer of the Year and was rated number one in customer satisfaction by J.D. Power and Associates for its outboard and sterndrive engines. The awards reflect Mercury Marine's commitment to lean manufacturing, Six Sigma and customer focus, which also motivated the overhaul of the company's 225,000-square-foot DC in Fond du Lac. The DC ships 10,000 parts and accessories a day to support international operations and serves as a regional distribution center for the Midwest.

The facility had a home-grown software system, a proprietary wireless LAN, and 12-year-old mobile computers. The long life was a testament to the system's durability, but ongoing reliability was a growing concern and an increasing risk to the business. When Mercury Marine undertook a strategic initiative to expand throughput and capacity at the facility, it was clearly time to retire the legacy system.

"We needed to update the technology and increase

the reliability of the system," said Daryl Dahl, Mercury Marine's distribution plant manager at Fond du Lac. "We needed a new system that would engage our distribution center associates more and increase productivity."

The legacy system featured automated guided vehicles (AGVs) using antiquated software to communicate with the mainframe. The system controlled the vehicles, which drove associates to pick locations. The method of communication, referred to as "screen scraping," proved to be problematic and unreliable for a system that needed to run 24/7. The legacy vehicle routing system had become very inefficient due to persistent RF signal drop off and processing delays. These performance problems in turn reduced productivity.

There were three major components to the upgrade: convert the wireless infrastructure from proprietary 900MHz technology to a highly secure, 802.11b-standard network; redevelop the legacy host and mobile computer software to run browser-based applications over the wireless LAN; and, install new mobile computers that could efficiently run the new applications and would be easy to support, yet would also match the rugged, durable performance the legacy units had provided.

"At first, Mercury wanted to continue using DOS handhelds because they had worked so well in the legacy system, but we encouraged them to look at Windows units," said Terry Prewitt of Miles Data, an LXE Elite PartnerPass program member who worked closely with Mercury Marine on the project. "When they saw the degree of control Windows gives network administrators over the computers, for example the ability to make remote updates and lock out users from making certain changes, they saw a lot of benefit in a mobile Windows platform."



Mercury Marine selected full-screen vehicle-mounted computers from LXE, which feature a full-color, SVGA touch screen display and a Pentium® processor running Microsoft Windows® 2000. The rugged computers are mounted on forklifts used by DC associates to pick and ship orders.



"Our infrastructure supports Windows, and the LXE computers easily connect to our network," said Dahl. "We like the LXE computers because of the size of the screen and the keyboard, its wireless connectivity, and because it has an Internet browser."

Mercury Marine redeveloped its picking, shipping and other DC applications in Java 2 Enterprise Edition (J2EE) to run as browser-based applications from an Oracle Web server. Mercury chose a wireless network from Cisco Systems featuring 802.11b-standard Cisco Aironet® 350 Series Access Points to manage communication between the server and the new wireless mobile computers. The system has been highly reliable with minimal downtime, which has produced savings from reduced IT support requirements.

"Our associates were involved from the beginning to design the screens and to test them. Mutually beneficial relationships were formed during the development stage, which allowed the associates to take ownership of the system and accept it after it was implemented," said Dahl.

Forklift operators receive picking instructions wirelessly from the host system on the color screen and use touch screen input to confirm activity and enter quantities. The large computer screen enabled Mercury Marine to design applications with large input buttons that are easy for associates to use.

"The new system is much faster and more reliable, and has allowed the associates to become much more engaged in their work," said Dahl. "As an unexpected benefit, because associates have more information available to them, they've become good at sequencing their tasks to be more efficient and productive."

When Mercury Marine began planning its system replacement, it set goals for the new system to provide a 15 percent productivity improvement, improve fill rates, support 99.5 percent same-day shipments and require less IT support. Miles Data's recommended solution of LXE computers and Cisco wireless access points has helped Mercury Marine meet or exceed these goals and enjoy a better-than-expected ROI.

"A new system was not hard to justify because we expected efficiency improvements, quality improvements, and cost savings relative to increased productivity and less downtime," said Dahl. "We are very satisfied with the new system and results have exceeded our expectations."



**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](http://www.lxe.com).