

LXE and Oracle: Enabling Change at Royal Appliance International.

CASE STUDY

ROYAL APPLIANCE - Amidst a barrage of new technologies designed to revolutionize the speed and efficiency of business, companies sometimes find it difficult to identify realistic, cost-effective solutions in context of day-to-day business.

"Royal Appliance's needs evolved over time. LXE's flexible and reliable equipment allowed us to re-use the same hardware we purchased for our legacy system with our new Oracle 11i Suite."

- Chris Fisher, Director of Information Technology, Royal Appliance



To maintain growth, Royal Appliance began looking for new technology with the flexibility to support a rapidly changing business. From modest beginnings nearly a century ago in the basement of its founder's home, to an international company generating over \$400 million in revenues annually, Royal Appliance's technology needs have changed dramatically over the life of the company. In the last ten years alone, Royal Appliance has added new types of products to its production line, has increased sales by 20%, and has shifted from in-house assembly to an overseas outsourcing model. All of these changes have presented new operational challenges.

Royal Appliance turned to LXE and Oracle to help manage these changes and increase efficiency and cost-effectiveness. Thanks to compatible technologies, Royal Appliance was able to upgrade its system, adding new capabilities and functionality over the last decade to improve rather than replace systems and processes. With LXE's wireless networks and rugged hardware and Oracle's 11i ERP Suite, Royal Appliance has upgraded its capabilities and modernized its operations progressively over time.

Warehouse Automation: Maximizing Efficiency

For years, Royal Appliance had run an assembly facility with a few hundred employees, dumb terminals, and a paper-based system. Warehouse automation would greatly improve productivity, reduce errors, and maximize overall efficiency of warehouse operations. In 1996, Royal Appliance integrated its first LXE RF network and hardware in an assembly plant. "At the time, most of the RF terminals operated on a batch system, but LXE offered real-time capabilities. We also wanted equipment that would stand the test of time; LXE demonstrated some of the most rugged products available," commented Chris Fisher, Director of IT at Royal Appliance.

The new wireless system enabled warehouse staff to go mobile, vastly improving efficiency. Some of Royal's products have over 100 components. LXE's wireless system allows workers to track their inventory more effectively, improving the picking procedure and automating data entry. Warehouse automation gave Royal Appliance the power to locate and track every component in the warehouse. That meant getting information and managing inventory flow much more easily and efficiently than before.

New Solutions for New Challenges: Oracle 11i

Warehouse automation was only the beginning of the technological transformation at Royal Appliance. The company's needs continued to evolve. In 2000, management made the strategic decision to outsource finished goods manufacturing overseas, significantly altering operations. This new arrangement posed communication challenges and changed many of the traditional processes that Royal Appliance had been using in-house. In addition, the company expanded its product lines to include new consumer electronics products. "Our legacy systems were really starting to show their age," commented Fisher. "We needed a solution that was going to replicate the functionality of our legacy systems immediately, and allow us to graduate to more sophisticated functionality gradually."

Royal Appliance needed technology that would allow it to share critical information across the organization and around the globe. The system would need to accommodate multiple types of products, manage processes company-wide, and expand data capture and reporting capabilities. Scalability would be critical as well as flexibility to add new products and new business units.



Royal Appliance began the process of exploring the options. Managers looked at all of the top-level ERP systems including PeopleSoft, SAP, and Oracle. They were looking for something that would help them take their business to the next level; something that could duplicate the current functionality and yet offer capabilities that would accommodate change and growth within the company. After careful consideration, Royal Appliance selected Oracle. "We were comfortable with Oracle's technology and thought it was the best fit for our business model and the goals we wanted to achieve. Oracle also allowed for the smoothest transition, replicating our current systems first, and then adding capabilities gradually. This was critical for keeping operations running smoothly. We wanted something that would allow us to grow the business: more SKUs, more volume, and more revenues, without adding more people. Oracle 11i can handle more SKUs and can manage many more product lines than we could ever have hoped to achieve with our legacy application," concluded Fisher.

Combining Forces

The smooth integration of this project required the collaboration of multiple parties. In order to ensure that compatibility would not pose a problem, LXE's Systems Integration Group worked with Oracle to have its computers certified in a matter of days. LXE's rugged computers, purchased six years before, were ready to accommodate Oracle 11i, offering reliability and scalability. The flexibility of LXE networks and computers allowed Royal Appliance to integrate new technology efficiently and economically. Oracle 11i has enhanced the wireless systems even more by using data and reporting to enable direct picking and direct put-away. Whereas the wireless data collection improves the process by collecting data more efficiently, Oracle 11i is able to manipulate the data, put it in context with other data, and send information back to the user.

An Oracle consultant and a team from Price Waterhouse Coopers were on-site to ensure smooth integration. They were there to teach the Royal implementation team about the functionality available in 11i and to guide the team through the implementation process. The team took an aggressive, fast-forward approach, replicating the functionality of the legacy system first, and then rolling out new Oracle modules with

new functionality. Royal Appliance largely attributes the smooth integration to a lot of hard work from a very talented and dedicated implementation team. By identifying and prioritizing objectives, Royal was able to progress with clarity and precision through the potentially overwhelming and complex implementation process.

Royal kicked off the New Year by taking the system live on Oracle on January 2, 2002. The January 2002 launch included many system components, with additional components being completed in February 2003. The warehouse management module launched in August 2002, and resulted in increased efficiency.

One of the very first enterprises to run Oracle 11i, Royal has been extremely pleased so far with the decision and the results. The company's success to date demonstrates the power of inter-operable technologies and the ability to expand capabilities over time. With Oracle 11i and LXE, Royal Appliance will lead the way into new decades of healthy business performance.

About Oracle

Oracle Corporation is the world's largest enterprise software company. For more information about Oracle, visit www.oracle.com.

About Royal Appliance

Royal Appliance develops, assembles, sources, and markets vacuum cleaners and other cleaning appliances for home and commercial use under the Dirt Devil® and Royal® brand names. The company's executive offices are located at 7005 Cochran Road, Glenwillow, Ohio 44139. Web site address is www.dirtdevil.com

The logo for LXE Inc. features the letters "LXE" in a bold, blue, sans-serif font. A registered trademark symbol (®) is positioned to the upper right of the "E". Below the letters is a stylized, light blue wave-like graphic that tapers off to the left and right.

About LXE Inc. LXE Inc. improves supply chain performance by applying over 30 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.