

Philips Semiconductors manufactures innovative inventory management processes with help from IBM.

Overview

■ Challenge

Philips needed to improve inventory management for high-volume integrated circuits to respond quickly to customer demands, minimize waste and reduce errors

■ Why Become an On Demand Business?

By infusing its supply chain with sense-and-respond capabilities, Philips enabled greater responsiveness to market dynamics

■ Solution

A state-of-the-art real-time inventory tracking system—built with IBM's help using Philips RFID technology

■ Key Benefits

- *Reduced receiving and palletization cycles by 50 percent*
- *Reduced sorting and tracking turnaround times by 60 percent*
- *Improved delivery reliability and inventory turnover while shortening billing cycles*

» On Demand Business defined

An enterprise whose business processes—integrated end-to-end across the company and with key partners, suppliers and customers—can respond with speed to any customer demand, market opportunity or external threat.



Philips Semiconductors (www.semiconductors.philips.com/identification), headquartered in the Netherlands, has helped shape the radio frequency identification (RFID) technology revolution across countless industries worldwide. With approximately 35 percent of the RFID market and more than one billion RFID technology-based chips sold to date, Philips Semiconductors is the standout global leader in the design and manufacture of contactless chips used in smart cards, smart labels and tags, as well as in automotive solutions.

“Our new solution, built with help from IBM, empowers us with a more dynamic approach to tracking and managing our product inventories. It’s transforming our supply chain operations.”

—Heinze Elzinga, global strategic alliances and programs, Philips Semiconductors

Responding to changing market demand with real-time supply chain visibility

On Demand Business Benefits

- Improved customer service and reduced cycle times by transforming supply chain processes using real-time information management capabilities
- Streamlined receiving and palletization processes using sense-and-respond capabilities, resulting in 50 percent faster cycle times
- Reduced inventory sorting and tracking turnaround times by 60 percent by automating manual processes such as cross-checking and repackaging
- Optimized space utilization by enabling real-time management of inventory stock and location, which allows better shipment planning

“By combining IBM market leadership with Philips technology strengths, we will bring to market integrated, end-to-end solutions for major and consumer goods manufacturers, couriers, and logistics and distribution companies.”

—Heinze Elzinga

As do many large manufacturers, Philips continually seeks ways to improve its bottom line by increasing visibility into its constantly changing product inventories. But increasing this visibility is a complex, global challenge: Philips operates 20 large manufacturing and distribution facilities, and has approximately 36,000 employees and hundreds of sales organizations distributed across 60 countries worldwide.

Previously, Philips manufacturing and distribution center workers scanned barcodes to retrieve inventory information—a manual process that required a barcode reader with a line of sight to each carton. Information then was entered by hand into the company’s enterprise resource planning (ERP) system. Error-prone and time-consuming, this tracking process often led to discrepancies between actual product status and the status recorded in the ERP system. As a result, customer-facing staff found it difficult to perform critical services, such as placing orders, responding to change requests and tracking deliveries. Without a clear picture of the status of its inventory at any given point in time, Philips faced process inefficiencies that threatened its ability to deliver the levels of service its customers expected.

Streamlining processes to drive efficiencies—and ultimately new business value

As part of an initiative to improve efficiency and enhance customer service, the company determined it needed to streamline information management processes within its manufacturing and distribution supply chain. “We recognized that we had to reengineer critical processes such as capturing inventory data at our production and logistics facilities, and updating our ERP systems,” explains Heinze Elzinga, global strategic alliances and programs for Philips Semiconductors.

Specifically, the company wanted to improve the speed and accuracy of its inventory information management processes. “Accordingly, we saw the tremendous opportunity to leverage our own leading-edge RFID technology to deliver real-time insight into our business-critical supply chain processes and inventory information,” adds Elzinga.

Making real-time inventory visibility a reality

Philips turned to IBM Business Consulting Services to help infuse its supply chain with more responsive, efficient inventory management processes. Using Intel® RFID technology, IBM Business Consulting Services helped the company design, develop and implement a next-generation manufacturing and distribution supply chain that enables increased efficiency and improved customer service by sensing and responding to changes in the business environment.

Teaming with IBM, Philips began to tag cases of one of its high-demand products—integrated circuits produced in the company’s Kaohsiung manufacturing site in Taiwan and distributed via a distribution center in Hong Kong—with its own RFID chips. Via embedded miniature antennae, the RFID chips send essential bits of stored information as signals to a receiver that reads them and forwards the information to a server, which automatically updates the company’s ERP system. So Philips can now leverage a real-time connection between the manufacturing and distribution centers and its mission-critical ERP application.

Philips can now track products using more specific criteria than those allowed by its previous barcode-driven approach. An RFID tag can be embedded with a wide range of data, including everything from a product description to an expiration date and price; in contrast, barcode data can be used only to identify groups of products. “With data embedded in the tag, we have a unique identifier, allowing us to manage our inventory more efficiently than ever before,” says Elzinga. “Plus, unlike barcodes, RFID tags can be read at any angle and from a distance, so we have more flexibility with how we manage physical space at our facilities.”

The solution leverages Philips ICODE technology, an Intel technology-based RFID framework, IBM WebSphere and IBM DB2 software components and business expertise from IBM Business Consulting Services. IBM consultants reengineered 13 supply chain processes and designed the solution architecture, integrating applications, databases and user interfaces to connect networked RFID readers with Philips’ warehouse management and order management systems in real time.

Improving productivity and service with a next-generation supply chain strategy

Once Philips and IBM completed the initial phase of the rollout, the company began to see improvements in productivity and efficiency throughout its supply chain. According to Elzinga, improved visibility into inventory movement gives the company more than just better inventory control; it enables Philips’ customer-facing employees to deliver more responsive customer service. “Today, our employees can better focus on meeting our customers’ demands, because we now know the status and location of our tracked inventory,” he explains.

Inventory is tracked automatically as it moves through the manufacturing and distribution sites. Entire cartons can be scanned and validated with less manual intervention, cross-checking and repackaging, which helps to keep operations running smoothly. Philips employees can access specific product statuses in real time, enabling more accurate shipment planning. “The new system allows us to follow the progress of products as they leave the manufacturing building until they arrive at the distribution center,” says Elzinga. “So our workers don’t have to scan each box as it is loaded or unloaded, saving us time and resources and helping to reduce data entry errors.”

Key Components

Hardware

- RFID chips based on Philips’ ICODE technology
- Enterprise-class Intel RFID architecture

Software

- IBM RFID Framework
- IBM WebSphere® Application Server
- IBM WebSphere MQ
- IBM Rational® Application Developer for WebSphere (formerly WebSphere Studio Application Developer)
- IBM WebSphere Studio Device Developer
- IBM DB2®

Services

- IBM Business Consulting Services
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As a result of transforming business processes within its supply chain, Philips has increased inventory turns, improved stacked lead time, optimized space utilization, enhanced delivery reliability and warehouse efficiency, and improved customer service. By automating manual processes, Philips has reduced overall cycle times significantly. Specifically, the receiving step has dropped from 40 seconds to 20 seconds; the sorting and batch tracking processes dropped from 20 seconds to just 8; and the palletization process has dropped from 20 seconds to 10. Plus, by lowering the latency period for entering information into its ERP system, Philips can now generate customer invoices much more quickly—resulting in shorter billing cycles.

IBM and Philips: pioneering sense-and-respond information management

Following the success of the new system at its Taiwan and Hong Kong sites, Philips anticipates rolling out the innovative supply chain system to all of its global manufacturing facilities and distribution sites. “By streamlining our supply chain operations with IBM software systems and consulting services, Philips is powerfully positioned for future growth. Our new solution, built with help from IBM, empowers us with a more dynamic approach to tracking and managing our product inventories,” Elzinga concludes.

Furthermore, as part of a strategic joint initiative, Philips and IBM are combining their industry expertise to address the growing need for advanced RFID technologies in day-to-day business processes, operations and consumer products. “By combining IBM market leadership with Philips technology strengths, we will bring to market integrated, end-to-end solutions for major and consumer goods manufacturers, couriers, and logistics and distribution companies,” says Elzinga.

For more information

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Corporate Marketing
New Orchard Road
Armonk, NY 10504
U.S.A.

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