

# Ricoh Corporation

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## Client Overview

Ricoh Corporation, the number one U.S. manufacturer of digital copiers, is a leading manufacturer of diversified office equipment and electronics. It has distribution centers (DCs) located in Fairfield, New Jersey and Tustin, California.

## The Challenge

Ricoh was seeking improvements to its service parts distribution facilities. The company was also looking to improve customer satisfaction while reducing the overall operating costs associated with its parts logistical systems.

Due to an increase in the number of digital, multi-functional copier and facsimile equipment being produced and marketed, Ricoh knew that the advanced equipment and technologies incorporated in its multi-functional, connected products and advanced color products required a more responsive logistical system.

Room for improvement was becoming increasingly difficult, and Ricoh required dramatic expansion plans be developed and incorporated in its DCs. Ricoh made many process improvements over the years that helped it improve customer satisfaction and control expenses. But those improvements were becoming harder and harder to find, took more time to implement, and returned smaller benefits. Instead, Ricoh needed to change in a way that would concentrate on value-added services, improving responsiveness, and stabilizing overall costs.

Ricoh's first step was to partner with Tompkins Associates. Tompkins chose to:

- Evaluate the positive and negative aspects of the current DCs
- Evaluate past growth and planned growth of the company
- Document value-added services geared to separate Ricoh from the competition
- Design a facility layout, equipment requirements, and system automation plan

To design a logistical strategy, not a warehouse or a warehouse system, Tompkins looked at a total solution, incorporating a facility layout inclusive of carousels, conveyors, racking, and a Warehouse Management System (WMS) that would integrate the material handling equipment with radio frequency (RF) picking.

Ricoh wanted to improve its storage utilization and maximize productivity on both the receiving and picking operations. It needed to get the product on the shelf faster, reduce its lead-time, and get it out the door with a higher level of accuracy, while reducing overall expenses. Customer satisfaction was a number one priority to Ricoh in support of its nationwide direct and indirect sales outlets.

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## **The Solution**

### **Strategic Master Plan**

Tompkins' first step was to create the Strategic Master Plan (SMP). The primary purpose of the SMP was to design a more efficient and cost-effective DC to service parts. Improved warehouse operations and storage methods, along with increased space utilization and customer satisfaction, were the key objectives.

### **Creation of Teams**

The second critical step was the creation of teams. Each team was chartered to perform critical tasks and to provide each member with a formal job description that clarified overall roles and responsibilities. A master schedule was created which provided a clear picture of tasks and time frames. Members also participated in a weekly conference call that brought them together with vendors.

The following functional teams were created:

- Executive Committee
- Ricoh ITG Team
- Ricoh Data Conversion Team
- Ricoh System Test Team
- Ricoh Hardware Configuration Team
- User Training Team
- Facility Coordination Team

### **Data Collection and Analysis**

The third step of the project was the actual data collection and analysis phase. This entailed the design of software applications that extracted historical data from the Ricoh mainframe systems on over 65,000 different part numbers. Ricoh and Tompkins studied parts movement, purchase order history, receiving history, and all other related activity that occurred over a three-year time frame. Along with this history, Tompkins developed applications that simulated the future activity, inclusive of the value-added services Ricoh planned to incorporate in its new logistical system.

### **Layout and Design**

Tompkins created the physical layout and design of the new DC as well as the functional system design of the WMS. The search for a WMS vendor, along with vendors who would supply the material handling equipment, began.

A key piece of equipment procured was the cubic scan. This equipment is designed to capture the cubic measurement and weight of a part. Each part had to be measured four times, once each for the individual piece, inner pack, case, and pallet. This information eventually led to how a part was stored, replenished, picked, and shipped within the operation.

### **System Functional Design**

Tompkins and Ricoh chose Haushahn Systems & Engineers for the WMS vendor. This phase encompassed a series of meetings reviewing the baseline system functionality of Via Ware (Haushahn WMS) and incorporating the unique business requirements of

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Ricoh's visionary business plan. These meetings included Ricoh Operations, the Ricoh Information Technology Group (ITG) who modified the Ricoh mainframe applications, Haushahn, and Tompkins.

### **System Test Plan Development**

The system test plan phase of the project took over three months and was accomplished by using Tompkins, Ricoh, and Haushahn personnel. The actual test plan was prepared and written by Ricoh ITG and service parts members.

The test plan incorporated the system interfaces between the Ricoh mainframe and the WMS, the data exchange between the carousel control unit, the manifest system, the conveyor system, and the Ricoh host. It brought all the pieces together and provided an exact picture of all the previous tasks performed.

The final piece of the project came down to operator training. Ricoh staff had never used pick-to-light applications, RF picking, or receiving, and had very limited experience with any form of computer applications. With the assistance of Tompkins, the operator training went smoothly.

### **The Results**

Benefits to Ricoh since the first installation in New Jersey and California include:

- Job enrichment for employees—since the jobs were so challenging, new job descriptions were created for employees.
- Value-added services, which reduced customers' inventory carrying costs, supply costs, facility costs, and overall lead times.
- Increased tracking capabilities—Ricoh knows where an order is at any point in the operation.
- Increased facility life span by five years due to optimized storage space.
- Decreased supply costs since the WMS automatically selects the required carton size, thus reducing waste.
- Increased customer satisfaction by reducing lead times and improving packaging—reducing cost and improving overall information availability.
- Invaluable knowledge gained by Ricoh management on project management, systems design, system testing, and overall documentation planning.

Ricoh installed a new mainframe system, which provided increased functionality on top of the automated DCs. Continuing to move in the direction of more value-added services, Ricoh now offers solutions to customer problems even before customers realize they have a problem. The success of what Ricoh Corporation has accomplished is a reflection of how partnerships with suppliers, coupled with overall business vision/planning, can build customer satisfaction and control expenses.