



Sichuan Changhong Electric adopts Motorola's scanning solution to increase efficiency and market leadership in China



In the electronics industry, products have a high depreciation rate. For each day that an item sits in the warehouse, its potential profit is reduced by 5% and lower profit margins just adds to the woe. Taking a lead, Changhong decided to change the way they operated by leveraging new and better technologies and set new benchmarks for the industry.



Company Overview

Sichuan Changhong Electric Co., Ltd is a diversified multinational enterprise engaged in the R&D, production and sale of colour TVs, projection TVs, audio-visual products, digital networking mains, equipment parts, flat panel displays, digital media networks, air-conditioners and more. It holds shares in and controls several companies including Jilin Changhong, Jiangsu Changhong and Guangdong Changhong.

Changhong boasts of more than 200 marketing and sales branches in over 30 provinces, cities and districts, over 30,000 sales networks and in excess of 8000 service network points fanned out across the country. It has established digital industrial parks in Guangdong, Jiangsu, Jilin and Hefei amongst others and has set up innovation and research centres in Shenzhen, Shanghai and Chengdu, China.

Its international subsidiaries can be found in the Americas, Australia, South-east Asia and Europe, and it has set up business centres in more than 10 countries, including the US, France and Russia. It trades in more than 100 countries.

The Challenge: Reducing The Number Of Links In The Supply Chain

Changhong has some 40 raw material warehouses, 50 finished product warehouses and more than 200 distribution warehouses in Mianyang alone. In the past, warehouse management was primarily carried out by hand. Although the ERP system was used to a certain extent, information regarding the raw materials was recorded on paper and the location of items relied solely on the memory of the personnel. Once the stock entered the warehouse, data was manually keyed into a computer.

Customer Profile



Company

Sichuan Changhong Electric

Industry

Electronics Manufacturer

Solution

MC3000

Solution Features

Barcode technology with wireless solution and mobile information management with the MC3000

Benefits

Enabled decision makers to adjust quickly and accurately to market changes.
Improved accuracy in inventory reporting.
Increased effective use of storage capacity.
Reduced costs of inventory.
Achieved paperless operations.

For stock taking, Changhong's warehouse operators manually recorded the quantities of materials before passing this information to the data entry clerk. Since stocktaking and data entry were time-consuming activities and could not be performed simultaneously, data entry clerks were often left idling for huge intervals of time before suddenly getting a huge load of work throwing them into a tizzy; this got even more complicated with warehouse workers crowding around the data entry clerks for the final results. This threw the entire process into a state of panic and this scenario was repeated almost every month

The old pen-and-paper method also resulted in a difference between the inventories in the warehouse and those indicated in the system. Real time transmission was never achieved and the head office was never in a position to make timely, accurate decisions. Making matters worse, the problem was aggravated when the volume of transactions increased.

The manual process of data capture could not keep up with even a minor increase in the number of goods passing through the warehouse. The captured information was highly error prone and also led to increased operational costs. Additionally, the ERP system could never reflect real-time situations as it was not designed to do stocktaking. This affected the business' need for speed in decision-making and lowered overall competitiveness.

The management at Changhong understood that the industry not only demanded quality products but also required quick turnaround and timely delivery of these products based on demand.

To achieve this goal, Changhong required rapid production capabilities while keeping a minimum level of inventory. With this in mind, the company pioneered the concept of logistics as a mobile warehouse. The idea was to replace space with time, get rid of the outmoded idea of "more stock is good" and fully promote the concept of 'speed to market'.

The Solution: Streamlined, Automated Data Capturing And Wireless Computing

In an effort to overcome these shortcomings, Changhong decided to implement barcode technology and wireless infrastructure from Motorola and its partner, Gicom Enterprises. The solution included the Motorola MC3000 mobile computer with barcode capabilities. Coupled with the deployment of a wireless network, Motorola was able to simplify the capture and management of warehouse data very quickly.

Changhong currently uses mobile information management in the areas of in-stock, out-stock and stocktaking using the Motorola MC3000. The solution manages the raw material at warehouses and at the more production areas spanning more than 2000 square metres.

I. Incoming Operations

Typical stocking operations include the reception of goods, verification and acceptance and loading the materials onto shelves. Changhong has close to 200 suppliers across China and raw materials received from them are classified according to the barcodes given by the suppliers.

The barcodes ensure that the system can track each item. Once a delivery note arrives at a Changhong warehouse, the Motorola MC3000 is used to scan the barcodes of the raw materials. The barcode on the delivery note is also scanned and this data is transmitted to the warehouse data centre via the WLAN.

The system searches for the order and checks whether the goods can be accepted before submitting the data to Changhong's ERP system.

After the materials are received, Changhong's ERP system automatically updates the status of the order and transmits the order information to the warehouse clerk's MC3000 mobile computer, giving him the designated storage space to store the materials.

The operator then scans the barcode of the storage space and the system automatically records the location of the items and updates the inventory records. The date and time of each process is recorded, enabling Changhong's warehouse personnel to track the status of every product, thereby carrying out real-time monitoring.

II. Outgoing Operations

Outgoing operations at Changhong include the picking up of materials from racks, sealing, packaging and issuance. By having real-time information of the inventory level, the warehouse administrators can implement a "first in, first out" when preparing items for delivery.

The location of the products to be delivered to can be easily found and instructions are issued through the Motorola MC3000, leading to path optimisation. After the products are sealed, the solution produces a checklist of the goods inside the packaging and automatically prints a packing list. When issuing the goods, the quantity issued is recorded and automatically updates the inventory totals.

When the warehouse personnel are prompted by the data centre to issue products, they check the schedule via their wireless terminals and scan the shipping order and customer serial numbers. If no error is detected, verification confirmation is transmitted to the centre, which then finalises the issuance.

The Benefits: Adjusting Quickly And Accurately To Market Changes

With the combination of barcodes and the wireless enterprise mobility solution, Changhong has

achieved clear results in its warehouse management. Not only did this help Changhong lower warehousing costs, it also greatly improved the efficiency of the supply chain. More importantly, the accurate and timely inventory information allows managers to make decisions quickly in response to market demands boosting Changhong's competitive advantage.

Having achieved real-time transmission of data, the degree of accuracy, utilisation, processing and monitoring of all segments of the work process, from the reception of materials until the finished products leave the warehouse, can be tracked and maintained at the data centre. This has led to 100% accuracy in inventory information. As a result, it is now much easier for decision-makers to deliver accurate judgements in response to rapid market changes.

As real-time exchange of data is achieved, the speed in the flow of goods in Changhong's warehouses increased. This results in an increase in effective storage capacity, lower production costs and an increase in the rate of return.

Changhong staff can now retrieve the inventory status in the warehouse whenever it needs to. This allows them to react and adjust quickly to the complex and fast-changing home electrical appliance market.

Motorola's enterprise mobility solutions have been applied to the warehouse management centre to capture and analyse data in the field. The information on the raw materials, finished products and delivery are now finally integrated into the company's information systems, therefore resulting in vastly improved logistics capabilities.



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