

## World Leader in Tile Manufacturing Achieves Wireless Automation

Marazzi Group deploys Enterprise Wireless Mesh Network to improve operations and quality of service.

### EXECUTIVE SUMMARY

#### Marazzi Group S.p.A.

- Manufacturing
- Modena, Italy
- Over 6000 employees

#### CHALLENGE

- Provide network connectivity to outdoor warehouses to automate and improve operations
- Affordably deploy highly reliable, weather-resistant network without disrupting warehouse operations

#### SOLUTION

- Enterprise wireless mesh network provides Wi-Fi coverage throughout each warehouse, enabling workers to access the Warehouse Management System using handheld devices
- Controller-based system enables centralized IT team to remotely manage 350 access points and 350 handheld devices deployed in warehouses across Italy and Spain

#### RESULTS

- Plays critical role in warehouse automation, helping to increase accuracy of orders and quality of customer service
- Helps ensure high network availability, while saving time and money
- Makes it possible to automate processes, integrate systems, and remain ahead of competition worldwide

### Challenge

Established in 1935, Marazzi Group is the world leader in the design, manufacture, and sales of ceramic tiles, with a growing presence in the sanitary fixture industry. With subsidiaries in six countries including the United States, China, and Russia, the company produces a wide range of porcelain stone tiles, special floors and ventilated walls, and sanitary fixtures and furnishings that meet the aesthetic and functional requirements of consumers, architects, designers, and builders. Over the years, the company has introduced a series of innovative processes and products and acquired dozens of technological patents that have become the industry standard for tile production worldwide. “Marazzi Group’s innovative use of technology in both product development and manufacturing has resulted in the company’s leadership position,” says Andrea Provini, Marazzi Group’s CIO.

In 2008, Marazzi Group decided to improve its operations by automating its warehouse processes for the first time. “Because our procedures were manual, the interaction between our customer service department and warehouses was very cumbersome and time consuming,” says Provini. To simplify and improve the accuracy of order preparation and delivery, Marazzi Group decided to implement Warehouse Management System (WMS) and Enterprise Resource Planning (ERP) software. However, providing network connectivity to the warehouses presented a challenge. The company’s warehouses

consist of outdoor areas spanning thousands of square meters filled with pallets of tiles. “Implementing a wired network was cost-prohibitive and would have required moving our stock in order to dig into the floor,” says Provini. “Deploying a wireless network was the only viable option.” Because Italy experiences high and low temperatures year-round, Marazzi Group needed to find a highly reliable, weather-resistant wireless network.

### Solution

To launch its automation project, Marazzi Group researched various wireless networking solutions. “Some solutions were proprietary or unproven,” says Provini. “But when we visited companies who were using Cisco’s Enterprise Wireless Mesh access points, we were impressed.” Marazzi Group was already using Cisco® core infrastructure solutions and was pleased with the company’s open strategy and level of customer support. “Our automation project required us to undertake a lot of risk with new processes and software, so we wanted to be very confident in the network that we chose,” says Provini. “We knew Cisco would provide us with the performance and reliability we needed.”

In May 2008, Marazzi Group began deploying Cisco's Enterprise Wireless Mesh Network throughout each of its nine warehouses in Italy. "We finished by December and met our goal to complete deployment in one warehouse per month," says Provini. Marazzi Group has also recently completed deployment in two of its three warehouses in Spain. Today, the network consists of 350 Cisco Aironet® 1242AG Series Access Points and Cisco 4400 and 2100 Series Wireless LAN Controllers, which are managed by the Cisco Wireless Control System (WCS).

To provide Wi-Fi coverage throughout each warehouse, Marazzi Group deployed root access points at the boundaries of the facility, where existing walls or gates made it easy to dig and install cable. These root access points are connected to Ethernet ports and transmit to wireless mesh access points that provide connectivity throughout the warehouse.

The Cisco Enterprise Wireless Mesh Network provides the foundation for Marazzi Group's new automated processes. Forklift operators now use Datalogic handheld devices to read the barcodes on the products coming from manufacturing. Communicating with the Warehouse Management System via the wireless network, the device automatically provides the operator with product information, including the location in the warehouse where the tile should be stocked. "The wireless system now facilitates every stage of order preparation and delivery," says Provini. Warehouse workers can locate products much faster and match the tile barcodes to the packing lists, while workers dedicated to truck deliveries use the handheld scanners to make sure that the dispatch notes correspond to the delivery information in the Warehouse Management System.

Using Cisco's controller-based system, Marazzi Group manages the wireless network centrally from its Italian headquarters. "Our IT team in Modena remotely monitors and manages the 350 access points and 350 handheld scanners throughout our Italian and Spanish warehouses," says Provini. The Cisco Wireless Control System enables the IT team to easily monitor access point performance and troubleshoot the network from a remote location.

**"With wireless infrastructure that easily integrates WMS, ERP, and unified communications, we will continue to remain ahead of our competition worldwide."**

**—Andrea Provini, CIO**

## Results

The Cisco Enterprise Wireless Mesh Network plays a critical role in Marazzi Group's new warehouse operations, helping increase the accuracy of its orders and the quality of service that the company provides to its customers. When changes were made to orders in the past, the customer service department had to call the warehouse, causing delays and sometimes resulting in the delivery of wrong quantities or products. "Since we are still in the process of deploying our ERP solution, we have not yet experienced the full impact of wireless automation," says Provini. "But with the Cisco mesh network and our WMS in place, we estimate that errors in order fulfillment will decrease, which will translate into reduced costs for the company and faster delivery to our customers."

Centralized management of the Cisco network helps ensure high network availability, while saving Marazzi Group time and money. "The system enables us to determine, in an instant, if the redundancy that we have in place will give us enough time to resolve any access point issues without causing network downtime," says Provini.

"Centralized management results in an always-on infrastructure." As the network continues to be deployed, Marazzi Group intends to hire one local person capable of fixing network issues in each of the countries where the company has warehouses. According to Provini, "With Cisco's centralized management, we don't have to invest our resources in training a whole team of people for each of our warehouse locations."



The deployment of Cisco's Enterprise Wireless Mesh Network makes it possible for Marazzi Group to deliver on its vision to automate its processes, a capability that is becoming increasingly important in the manufacturing industry. "As industry leaders, making our company more competitive in the market is not about lowering the cost of production anymore. It's about managing logistics effectively," says Provini. "With wireless infrastructure that easily integrates WMS, ERP, and unified communications, we will continue to remain ahead of our competition worldwide."

## Next Steps

While Marazzi Group has aggressive plans to complete the deployment of the Cisco Enterprise Wireless Mesh Network, it is also considering implementing a number of other wireless applications in the future. "We will finish our wireless network deployment in Spain by June, France by the end of 2009, and then we'll move on to Russia and the United States," says Provini. To improve communications between the warehouse, offices, and delivery areas, Marazzi Group is also considering deploying wireless IP phones. "Warehouse workers would be able to call the IT help desk from areas that normally experience dead signals to report any problems with handheld devices, for instance," says Provini. Using the wireless network's guest access capabilities would enable Marazzi Group to provide added convenience for visiting vendors. "We've just started thinking of all of the wireless services that can benefit our company," says Provini. "Having Cisco in place enables us to conceive of all types of possibilities."

### PRODUCT LIST

#### Wireless

- Cisco Aironet 1242AG Series Access Points
- Cisco 4400 Series Wireless LAN Controller
- Cisco 2100 Series Wireless LAN Controller
- Cisco Wireless Control System

#### Routing and Switching

- Cisco Catalyst® 5505 Series Switches

## For More Information

To find out more about the Cisco Unified Wireless Network and 802.11n technology, visit: <http://www.cisco.com/go/nextgen-wireless>

To find out more about Marazzi Group, visit: <http://www.marazzi.it>.



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