

Dell Inc. WS-1



In less than 20 years since the company started, Dell Inc. (headquartered in Round Rock, TX, USA) became the computer industry leader. In October 2005, Dell opened its newest plant in Winston-Salem, NC (WS-1). Dell is proud of its ability to produce a computer every 2.5-5 seconds. The WS-1 mission is to serve the demands of the Eastern U.S. population, which accounts up to 65% of the national total, as well as to further improve customer services and to increase market share.

Dell expands worldwide facilities, providing customers with high-value products

Many technology companies are following the trend of outsourcing their manufacturing, but Dell is expanding its own manufacturing facilities worldwide to realize the benefits of its supply chain management system and "Dell Direct Model" sales strategy. Dell built an infrastructure which enables the company to quickly produce computer systems based on the latest technology at high unit production rates. There are three U.S. manufacturing facilities, including Texas and Tennessee, plus four overseas, which are located in Ireland, Malaysia, China, and Brazil. Each facility

North Carolina Plant

- Site Area: 70,000m²
- Building Footprint: : 70,000m²
- 65,000 employees
- Dell's largest desktop computer and manufacturing plant
- Site Investment is more than US\$100 million
- Builds desktop computer models "OptiPlex" and "Dimension", specifically to meet customer requirements at the rate of 15,000 to 20,000 computers each day
- Provides sales, service, and support required for customers in more than 170 areas throughout the world
- Structured material handling system to allow quick ship after production
- Over 40 overseas subsidiaries/affiliates



operates with less than four days inventory. This supply chain strategy enables Dell to produce each computer system at a competitive price.

The WS-1 production layout is unique because it enables computers to be thoroughly tested after its components and software are installed. Rapid build and test translates into shorter delivery time for high quality products, a key part of Dell's objective for a great Customer Experience.

Material handling system achieves quick ship after production

After being built, tested, and boxed, new Dell computers are transported from manufacturing to the shipping area. Products ready for direct shipping to customers are sorted to the pack list/labeling area, where a shipping label and a packing list are applied to the carton. Product cartons are then automatically merged with peripherals from the Speaker, Printer, Applicator, Monitor (SPAMs) picking line. Systems and SPAMs are automatically merged and sorted to their dock destination by the high speed case shipping sorter.

Customer orders of multiple systems are temporarily stored in a Mini Load AS/RS, and then retrieved when the whole order is ready to ship. These orders follow the same flow to the dock destination.

Dell has plans to expand its material handling system to increase the variety of products it handles

as well as increase its production capacity.

Solution highlights

- Dell builds desktop computers to meet each customer's individual specification
- The Induction Sorter sorts completed products to be transported from the build, test and boxing area to either direct-ship or to staging in the AS/RS Buffer, in the case of a multi-unit order
- Four Packing/Labeling Lines house an operation to apply shipping labels and insert packing lists
- A shipping label is automatically printed and applied to every product carton, while packing list is applied to one case of each order in a manual station
- The Automated Storage/Retrieval System buffers about 3,000 system cases in 6 twin-shuttle S/R machines
- In the 15 chute Parcel Sorter, case shipping products are sorted by destination

