CASE STUDY: Under Armour®

QC Software Tackles Under Armour's® Explosive Growth

Founded in 1996 by former University of Maryland football player Kevin Plank, Under Armour is a leading developer, marketer, and distributor of branded performance apparel, footwear, and accessories. The company's products are sold worldwide and worn by athletes at all levels, from youth to professional, on playing fields around the globe. The Under Armour global headquarters is in Baltimore, Maryland, with European headquarters in Amsterdam's Olympic Stadium, and additional offices in Denver, Hong Kong, Toronto, and Guangzhou, China.

Starting with savings and credit cards in the basement of his grandmother's apartment, Under Armour is now a business whose products fly off the display racks. The defining moment for the fledgling company came in December 1999, when the company had 14 employees, with the release of Oliver Stone's football film, *Any Given Sunday*. Under Armour was featured throughout but got exposure in a locker-room scene with stars Jamie Foxx and Cameron Diaz. Stone wanted Foxx to wear a futuristic-looking jockstrap; Plank made sure that the "UA" logo was front and center. The company now employs 450 workers and is on track for $200 million in sales.

PROJECT HIGHLIGHTS:

2005
- Increased productivity 40% overnight
- Implemented Wave Planning to manage the work released to the floor
- Pick Methods include RF Cart, RF Zone Skipping, and pick-to-light
- Increased customer satisfaction with 100% Order Verification

2007 Expansion
- Increased pick zones from 8 to 50
- Implemented an auto induction and auto replenishment systems
- Numerous enhancements added quickly and efficiently.

To support their explosive growth, Under Armour needed innovative, cost-effective, and flexible order fulfillment solutions that could accommodate both their direct-to-consumer and large retail channels. They wanted to avoid costly modifications to their existing warehouse management system (WMS), while increasing capacity and decreasing order fulfillment time.

In 2004, DPI Material Handling Systems, Inc. was selected to evaluate current operations and develop a strategic plan to streamline facility and business processes to support existing operations and long range growth projections. On an average day Under Armour picks and ships 90,000 units, and on peak days that number increases to over 150,000. In order to improve material flow and efficient order fulfillment processing, DPI proposed the implementation of QC Enterprise™, QC Software's suite of modular Warehouse Control Software (WCS) products. Under Armour went live with QC Enterprise™ WCS in June 2005 and realized immediate benefits.

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QC's Order Management System (OMS™) was implemented to manage the order fulfillment processes. The wave planning functions of QC OMS™ allow Under Armour to efficiently plan the day's picking and manage the activity on the floor. Pick tasks are managed using a combination of radio frequency (RF) picking and Pick-to-Light (PTL) technology. RF is used for both cart picking as well as pick-to-tote. By combining RF picking and Pick-to-Light (PTL) technology, productivity increased by 40 percent. QC OMS™ also provides 100 percent pack verification utilizing bed scanners similar to those found in grocery stores to ensure order accuracy and increased customer satisfaction.

The QC Navigator™ was also installed to direct the routing requirements of totes on the conveyor system. Inefficiencies within the RF picking area were eliminated with the introduction of zone skipping logic, which delivers totes only to the zones where picks are needed and skips past the remaining zones.

As time progressed, various enhancements were added to further streamline operations. Bulk Picking and Waving by Level capabilities were added to better manage order picking in the slow moving pick areas. To further increase picking efficiency and reduce handling and congestion, multi-point induction was added. This allowed operators to induct totes from various locations, relieving congestion and clutter to efficiently better balance system activity. The configurability and modularity of the QC Enterprise™ allowed Under Armour to implement these, as well as various other enhancements, ahead of schedule.

> "QC is very dedicated and creative when it comes to finding a solution to a challenge and is a great asset when trying to manage a high growth, ever changing operation."
>
> - Larry Rohleder, Director of Distribution Planning

By 2006, forecasted sales had exceeded the projected outbound capacity of the distribution facility, necessitating an upgrade to a new ERP system (SAP). The following year, Under Armour installed Manhattan Associates' WMS. The flexibility of QC Enterprise™ made it easy to support the interface changes necessitated with the new ERP and WMS systems with minimal disruption to existing operation.

In 2007, Under Armour expanded again with the addition of two levels to the two existing pick modules plus a separate conveyor system to deliver replenishment product to the various modules and levels. The new pick modules also feature an auto tote induction system to manage the release of new totes into the system for order fulfillment. With the influx of completed orders being delivered to packing and shipping, additional features were added to QC Navigator™ to prioritize the routing of orders based on operational requirements.

Throughout Under Armour's explosive growth, the QC Enterprise™ WCS has proven to be a dependable, scalable and flexible solution to support Under Armour's long-range business plans, continued growth, and increased market share.

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