CUSTOMER SUCCESS PROFILE

KINGSTAR

Quanta Storage Case Study

BACKGROUND

Quanta Storage, a subsidiary of Quanta Computer, is one of the major suppliers of storage products to leading computer manufacturers around the world. Relentlessly focused on innovation, Quanta aimed to evolve its products into the cloud and beyond, and also revolutionize its manufacturing processes for greater efficiency and control.

Quanta accomplished the latter objective and more, creating cutting-edge automation solutions like robots to streamline its own production lines. Its automation systems were so effective, in fact, that they became a new line of business within the organization. Building on their experience and a foundation of outstanding engineering capabilities, Quanta grew a product line of generalized robotic solutions targeted at the "3C" industries: computers, communications, and consumer electronics. Collaborative robots were a particular focus.

CHALLENGES AND REQUIREMENTS

While Quanta had achieved a tremendous amount of success with its internal robotics program, it still needed to move quickly to catch up and outpace the competition for collaborative robots in an industrial automation context. Other companies had a distinct head start towards meeting the ever-increasing demand from the 3C industries in China and beyond.

To get to market quickly with an exceptional product, Quanta identified 5 key features that they needed to deliver:

- Simple, safe robots. Many robots are dangerous with the ability to actually kill a human. Quanta required that its robots detect resistance and immediately stop if a human interfered.
- Built-in vision system. Most solutions lack a vision component, or add vision from a fixed position away from the robot arm. Quanta wanted to add vision directly onto the robot arm.
- Use a "training" concept rather than a "programming" concept.
- Allow vision to be part of the training, and achieve a visual pick-and-place in less than five minutes.
- Use a smartphone or tablet rather than a cord-attached heavy pendant.

Quanta also wanted to develop their own components for motion, vision, and EtherCAT. The organization believed that it could build tighter integrations if it developed all of the components internally, providing more options for meeting a very aggressive go-to-market timetable.

SOLUTION

To meet all of these needs, Quanta required a versatile, flexible, scalable, and open real-time operating system (RTOS) development platform to ensure that performance would excel immediately, and continuously improve. The organization began by investigating digital fieldbuses. EtherCAT immediately stood out as the best market option for having the most suppliers of drives and IOs. This led the organization to the KINGSTAR Soft Motion Platform. KINGSTAR provided the strength and versatility of EtherCAT, plus the required RTOS foundation and native scalability via IntervalZero. Because KINGSTAR uses the Windows Visual Studio development environment, a familiar interface, they knew they could be immediately productive and hit the ground running.

Most importantly, because the KINGSTAR platform is open and "plug and play," Quanta could develop its own components for motion, vision, and EtherCAT Master. But because KINGSTAR also offers pre-integrated components, they also gained the ability to quickly add third party components as a fall back if necessary. This flexibility and confidence played a large role in their final solution selection.

RESULTS

By using KINGSTAR to build its new robotics product line, Quanta Storage hit or exceeded all of their time and budget go-to-market goals. The organization delivered breakthrough innovations, especially around safety and vision integrations, while not only catching up to the competition, but outperforming them. Due to the Windows RTOS and KINGSTAR architecture, the Quanta robot is cloud-enabled and ready, and will easily integrate into the shop floor or automation environment. **With KINGSTAR, Quanta cut the time required to get a robot operational from hours to just five minutes.**

Not only did Quanta produce a cutting-edge product on time and on budget, but also was able to significantly reduce costs by using KINGSTAR. With soft motion and soft vision, **Quanta saved over $3K per robot when compared to the traditional hardware approach.**