

## Case Study



### *Magnys Helping Global Technology Leader Improve Efficiency Within Assembly Operations*

A recognized global leader in the personal technology industry turned to Magnys to help them build a virtual environment they could use to test PLC code and the integration of Cimplicity with other software systems within their global assembly facilities network.

Magnys engineers used their market-making emulation technology to create a solution that met all of our customer's needs. We also developed a comprehensive training program to ensure that the company's engineers could successfully create their own models after the initial implementation phase was completed.

#### **Emulation v. Simulation**

Because emulation is a relatively new concept, some people confuse it with simulation. However, the two technologies are very different.

*Simulation* is used by industrial engineers to present a "model" of real-world behavior. It is used to predict outcomes, based on a model of the PLC that may or may not operate in the exact fashion that the real device would. *Emulation*, on the other hand, is used by controls engineers to create a virtual model of the automation in the factory. This virtual model is controlled by the ACTUAL PLC. This gives the controls engineers the confidence that any tests will behave exactly as they would in the real world. Simulation is used in the planning stage of a project, while emulation is used to improve installation and launch efficiency.

There are several technologies in the market which are essentially simulation products with a few emulation functionalities "bolted on." Our solution, however, was designed from the ground up for emulation, specifically developed to give engineers the means to commission manufacturing, assembly and distribution systems on-time and on-budget.

### **How Did Magnys Help This Technology Company?**

Our team worked closely with our customer to develop virtual representations of their assembly operations, from kitting to tote returns. We modeled all of the individual components that comprised the system, from straight conveyors and lift tables, to photoeyes and sensors. These parametric components were saved in a digital library to make it even more convenient for our customer's engineers to build future models.

Once components were built and incorporated into a 3-D model with more than 8,000 I/O points, we connected it to the eight PLCs that managed the assembly floor, as well as higher-level operating systems. In addition, we developed 10 two-hour training courses and provided all system and component documentation in HTML format; this allows the engineering team to build and validate future models internally.

Prior to implementing Magnys emulation, installing a new assembly system at one of our customer's facilities meant bringing in a team of consultants (after the day's production ended and over weekends) to help build the data bridges necessary for assembly systems to communicate with higher-level plant management systems. The company was spending upwards of \$4,000 per hour for these teams of consultants to travel to and work in their facilities, in addition to the negative impact on employee morale as engineers were forced to extend their workday and week to accommodate this schedule.

We have eliminated these problems. Engineers are now testing and validating systems in a lab environment, during normal working hours and before equipment is delivered or installed. Furthermore, the company's engineers can anticipate the impact that changes they are considering within one area of the assembly environment will have on the rest of the system, as well as the broader operating system.

*To learn more about how Magnys can help your company save time and money in the commissioning of manufacturing, assembly and distribution systems, please contact Joe Hagan at (248) 449-2600, extension 125, or email him at [jhugan@magnys.com](mailto:jhugan@magnys.com).*



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