Siemens Positions Itself for the Digital Factory

By David W. Humphrey

Summary

In the midst of a deepening economic slump, Siemens Industry Sector recently briefed ARC on its vision to continue delivering value to its wide customer base while recognizing that manufacturers’ priorities have changed drastically in recent months due to sharp drops in demand.

While the company introduced a series of new products, including a new PLC series, its current focus is on addressing immediate customer needs to cut costs quickly by improving productivity and energy efficiency. At the same time, Siemens sees the industry at an inflection point in manufacturing technology and is laying out clear plans for a future based around the Digital Factory.

Manufacturers Focus on Short-Term Gain

The world economic crisis has affected nearly all industries in recent months with most reporting substantial drop offs in demand. This has forced manufacturers to make major course corrections while they ride out the storm. Some manufacturers are suffering from cash flow problems and are looking for ways to generate quick cash by delaying investments with long return periods. These manufacturers are only making investments that promise short-term gains. Realizing cost cutting potential in the short-term and investment security are what count most now.

Siemens is addressing these needs by focusing on solutions that promote efficiency, flexibility, and reliability. These include not only variable-speed drives, regenerative converters, and energy-efficient motors, but also control systems that intelligently monitor power to ensure that it is only used where and when it is needed. According to Siemens, variable speed drives and high efficiency motors have the potential to save in excess of 120 terawatt-hours. As electric power prices rise, industrial users are investing in energy management systems to optimize power use.
Siemens in 2009: At the Inflection Point of Two S-Curves?

In the past decade, Siemens has expanded its automation portfolio via both acquisitions and internal development. Through a series of high- and low-profile acquisitions, the company greatly expanded its offering in large drives and gearboxes, pioneered advancements in safety technology, and became a market leader in metals and water treatment. At the same time, Siemens grew its presence in the process industries, from almost nothing, to the number three position in process control.

At an Inflection Point: Siemens Sees Itself Between Two Significant Phases of Hardware and Engineering Software Integration

However, the most significant leap was the 2007 acquisition of UGS (now Siemens PLM). This acquisition led to a long-term internal initiative to incorporate PLM technology into all product areas over time. By doing this, Siemens is anticipating an era when all manufacturing processes can be simulated before production equipment is even ordered, allowing plant engineers to test, optimize, and create debugged code for tasks of all sizes. In addition, complex product design information from CAD systems will be available much earlier in the production planning process, allowing manufacturers to extend the lifecycles of manufacturing assets by designing them with greater flexibility.

Siemens currently sees itself at the cusp of two S-curves. According to the company, the first curve was a period of portfolio expansion that rounded
out the company’s offering and enabled a high degree of one-stop shopping. The second curve will enable the Digital Factory through the integration of simulation technology into all product areas. The focus here is on integrating PLM with production engineering and creating an interface-free automation platform that allows the free flow of data.

Much of the Siemens’ current PLM strategy focuses on the discrete industries. However, at the end of 2008, Siemens acquired Innotec (now Comos Industry Solutions), a supplier of lifecycle asset information management tools with a strong process industries focus. The Innotec acquisition is clearly aimed at supporting Siemens’ process customers with digital tools that enable plant engineers to standardize engineering processes and planning data around a single, transparent platform.

Shortly after the acquisition, Siemens abandoned the original architecture for the Simatic Automation Designer production engineering platform in favor of the Comos technology. The new Comos-based Automation Designer will become the centerpiece of Siemens’ production engineering solutions. For product and production design for discrete industries, the existing Teamcenter technology will remain the strategy. While this effort may take years, Siemens’ strengths in discrete and process automation could ultimately secure the Simatic Automation Designer a dominant market position.

As Siemens embarks on the second S-curve, the company’s goal is to offer its customers an integrated set of design and simulation tools for product and production lifecycles for both discrete and process manufacturing.

**SIMATIC S7-1200 to Replace the Venerable S7-200**

For the first time in the decade-long history of the SIMATIC S7 family, Siemens has announced a new PLC series to replace the S7-200 series of micro PLCs. Siemens targets the new S7-1200 at stand-alone machine applications, but also includes an onboard Profinet connection for distributed applications. In addition, the CPU provides closed-loop control functions for high-speed counting or motion control.

To complement the new micro PLC, Siemens has also introduced SIMATIC HMI Basic Panels, a series of IP65 operator panels ranging in size from 4-inches to 15-inches, with pixel graphics and touch screen or function keys. Both the PLC and HMI are programmed and configured with a single, new
engineering tool, SIMATIC Step 7 Basic. This is a low-cost, scaled down version of Siemens’ standard PLC programming tool.

The new designation “S7-1200” suggests that other new PLC series may follow in the future. Following this logic, an S7-1300 and an S7-1400 would replace the existing S7-300 and S7-400, but, understandably, Siemens refused to speculate at this point about future PLC families.

**Last Word**

These are difficult times for automation suppliers. While the economic crisis may yet claim victims, Siemens sees an opportunity to increase its market share by addressing both short-term and long-term needs of manufacturers. As one of the world’s leading suppliers, Siemens is well-positioned to achieve this goal with its broad portfolio of integrated solutions and sizeable war chest for acquisitions. However, the most critical challenge for Siemens in the future will be its ability to integrate its recent acquisitions with existing product divisions on its pioneering journey to the Digital Factory.

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