Network topology will be key

From our perspective as a global supplier of automotive manufacturing technology, especially in the area of machine control, Siemens views the issue of network topology as the key driver for the future. The entire automotive horizon, from powertrain, body-in-white, assembly and the paint shop at OEMs to the global supply chain of parts, machinery and equipment vendors will be impacted by the market's emerging trends in this area, as they reshape the entire manufacturing environment.

As the logistics of supply have already changed the face of our industry, so will the composition of the factory floor, in terms of motion control, hard real-time definitions and especially the broad-based protocols of communication between engineering, production, maintenance and delivery.

future LOOK

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Future look for the automotive industry (continued)

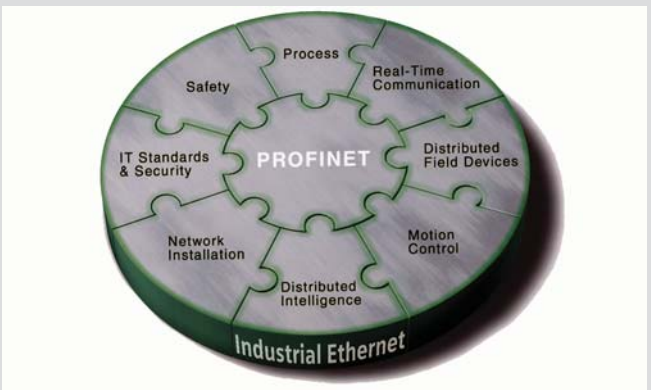
As Ethernet takes hold, it has affected the design and communication realities for literally every machine builder in the industry. Correspondingly, we aligned with PROFINET, thought by many to be the future fieldbus standard for the industry, to accommodate the heightened response times with a goal of real-time control over an entire network of machining cells. The goal was and still remains an absolute ability on the factory floor to implement change across various machine and equipment technologies, from builders worldwide, linking all the various languages and communications platforms on a single data highway. PROFINET thus becomes a foundation of totally integrated automation, with extensive diagnostic communications to factory management and ERP systems. Above all, operator ergonomics and safety drove a new thought paradigm at our company. Our TRANSLINE System Solution was a result, wherein a commonality of control could be achieved on varied machines, allowing not only greater flexibility but also greater reliability as we partnered with our machine tool customers worldwide to deliver a successful cross-functional operating model that's used today by all the U.S. OEMs. Our status as the leading supplier of PLC and CNC technology to the automotive market was and remains a vital element in this process. In essence, an operator can run a milling machine in the morning and an induction heating furnace or robotic work cell in the afternoon using essentially the same controller and instruction codes.

In parallel networking, likewise, significant improvements have been and continue to be made on the factory floors of our industry. Machine control response times have dramatically improved in just the last decade resulting once more in heightened efficiencies but also some formidable communications challenges. Safety and control on a single plant network require those capabilities to be embedded in the resident software of each machine, transfer line or ancillary device. Recently, standardization on our PROFINET system has been approved by a number of European OEMs. This communications system is our Ethernet-based, cross-vendor model for engineering, operations and automation functions, workable for controller-controller, controller-I/O device or motion control communications. We believe this model will set the stage for worldwide adoption of a total Ethernet-based operating system as part of the new world in networking topology and become the backbone of a more consistently implemented Totally Integrated Automation. We believe this system is the ideal complement to our open architecture CNC technology and will create a myriad of opportunities for future plant designs.

From our Automotive Center of Competence, we seek to interact with all our partners and their teams. This new vision of the industry will become reality, as the OEMs, machine builders and parts suppliers work in concert with the control, software and hardware supply chain. Our philosophy of providing onsite engineers, who reside in the customer's plant to provide assistance with equipment specification, manufacturing engineering, program management and the inevitable troubleshooting, is facilitating our ability to enhance our customers' achievement of the optimal network topology at their companies. As the market becomes more international, the "language" of the industry, spoken on the machine controller or across an ocean on the Internet, must suit the task at hand.

In the end, the business is still about people and we want our Siemens global "touch and feel" capability to be a ready asset for all our partners in automotive, as together we face the challenges of the next decades.

All plant equipment can run on a single network for control and safety



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