Engineers Seek Emerging Technologies To Fuel Growth

Machine builders must be experts on both machine design and on the materials and products they process. If their engineers can keep up with current thinking in these areas, then the companies stand a good chance of winning in today's hyper-global competitive environment. A recent tour of several Italian original equipment manufacturers (OEMs) provided an opportunity to see how they accomplish this.

A recurring theme from most of the OEMs visited in early July 2009 was "The Crisis." The global economic downturn was affecting almost all areas of the economy. But **COMEZ S.p.A.** (www.comez.com), a textile machinery manufacturer specializing in spinning, weaving, finishing and knitting machines, viewed this situation as an opportunity to prepare for future sales growth. Or, as Administrative Director Paolo Banfi put it quoting from the Apostle Paul, "We delight in our weakness, because in our weakness is our strength."

The company's innovation foundation is an electric servo motion control system that can withstand the dust and humidity of typical textile manufacturing. This invention complemented nicely the major industry trend of moving to an electronic machine control that greatly speeds up set up time versus the original mechanical setup. Engineers have also developed a smaller, cheaper jacquard knitting machine than can be found on the market currently. This positions COMEZ for growth in a new area.

When you buy a package at the store, you might think about how they stuff the product into the package. But someone must make the flexible materials that compose the package. **Nordmeccanica S.p.A.** (www.nordmeccanica.com) makes machines that coat and laminate layers of plstic, films, foil and paper from which the pretty package is constructed. Showing how machine companies need to know customers' materials as well as how to make a machine, it invented coating materials and processes to eliminate alcohol by applying a dry pigment. Not only does this eliminate handling evaporating solvent, it also eliminates hot air blowers that use a lot of electricity. Engineers at Nordmeccanica have now applied themselves to developing a new 3-ply laminate machine.

Sacmi Imola S.C. (www.sacmi.com) builds machines for four different markets—packaging, plastics (both injection and compression molding), vision and ceramics. Engineers there developed an "electronic nose" that is a special semiconductor that changes resistance relative to the atmosphere around it. The device can be trained to distinguish smells. It can even distinguish from among four different flavors of vanilla ice cream. Not only is this useful for its work with food products, an outdoor version can sense bad odors in the environment.

Pietro Carnaghi S.p.A. (www.pietrocarnaghi.it) designs and manufactures very large vertical lathes. These lathes machine large parts for the aerospace industry—for example the nose cone of a Boeing Delta IV rocket. But aerospace is not a stable market, and the company kept a lookout for emerging trends where its capabilities would be a competitive advantage. It found this in the burgeoning alternative energy market—specifically wind turbines. A recent development in wind turbine design replaces a turbine/gearbox combination with a direct-drive generator that reduces parts and potential maintenance issues. These parts are a perfect fit for its machining technology.

With 50 installations in the United States, Pietro Carnaghi considers it to be an important market even though it now exports machines worldwide. Providing troubleshooting assistance for globally dispersed machines presents its own challenges, so it has adopted Internet technologies for helping customers maintain and fix their automation in a fast and efficient manner.

A new machine from COMEZ for Jacquard knitting.

A Nordmeccanica coating/ laminating machine just about ready for shipment.

Italy as a country is one of the largest exporters of machines to the United States. In July 2009, Gary Mintchell, Editor in Chief, *Automation World* magazine, joined a small group of editors who toured many builders of these machines from various industries. Information from the visits was compiled into his series of Italy Field Reports.