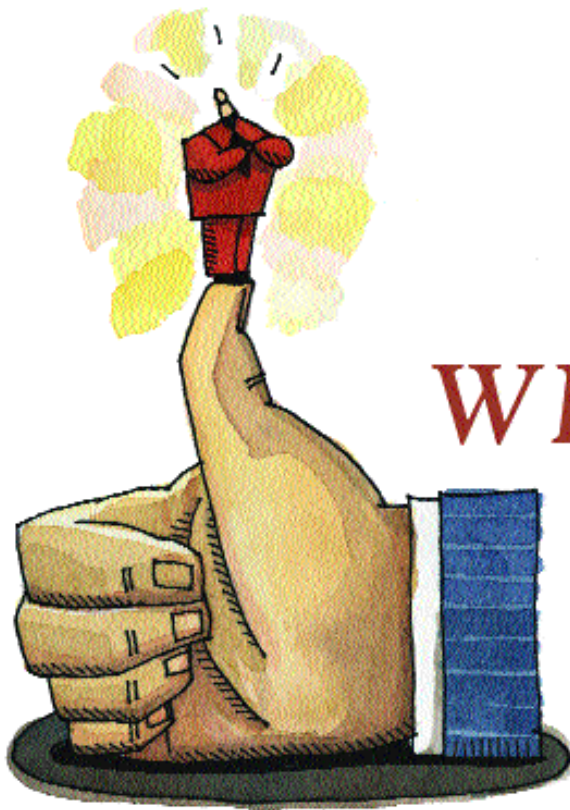
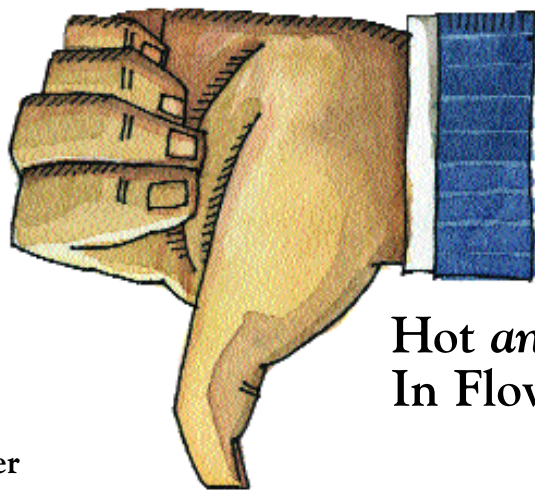


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## Hot and Not Technologies In Flow and Pressure

By Jesse Yoder

**H**ow is globalization affecting the flowmeter market? What is the impact of the negative downturn that the United States and world economies have experienced since the events of September 11, 2001? Who are the winners and losers in the new economic environment we are facing? This article answers these questions, as they apply to the flowmeter and instrumentation markets.

### The Effects of Globalization

The advent of globalization places a premium on the ability of companies to deliver products worldwide. For this reason, flowmeter companies are seeking to expand their manufacturing base to other areas and to find companies with an established distribution system in foreign countries. Siemens Energy &

Automation's acquisition of Milltronics and Moore Process Automation are good examples of this. Siemens is looking to expand its presence in the United States and buying a U.S.-based company is one way to achieve this goal. Siemens has further expanded its presence in instrumentation with its purchase of Danfoss, which was finalized in September 2003.

The trend towards one-stop shopping, especially among the large process control end-use companies, is placing more of a premium on the ability of an instrumentation company to deliver a broad range of products. Some companies choose a core technology or technologies, then supplement their core products with private-labeled products, or products that they resell. Companies that have taken this route include

## Trends in Flow & Pressure

### Winners

#### Coriolis

Coriolis and other new-technology flowmeters are generating significant uptake.

#### HART

Some companies are selecting HART products as a stepping-stone to fieldbus protocols.

#### Pressure Transmitters

Demand for gauge and absolute pressure transmitters will continue to grow.

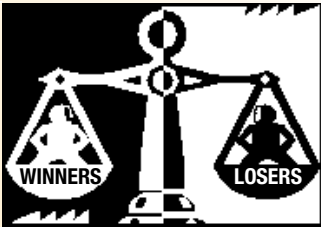
#### Ultrasonic

Ultrasonic flowmeters remain the fastest growing type of meter.

### Losers

#### Differential Pressure

Differential pressure flowmeters face stiff competition from new-technology meters.



#### Foundation Fieldbus

Adoption rates for Foundation Fieldbus have been slower than expected.

#### Profibus

Recent cuts in capital spending have limited the uptake for Profibus.

#### Vortex

Vortex is one new-technology flowmeter concept that has not lived up to expectations.

### On the Rise

#### Optical

Optical flowmeters are among the newest technologies on the market.

#### Sonar

Sonar is another nascent technology in the flowmeter market.

#### Vortex

Despite a lackluster uptake in recent years, big-name vendors are still investing in vortex.

#### Radar

Radar is among the group of new flowmeter concepts putting pressure on differential pressure.

Honeywell, Sparling Instruments, and Mobrey. This trend will also motivate companies to continue to broaden their product lines.

In the late 1990s, bigger was perceived to be better. Companies such as ABB and Invensys added large numbers of companies to their portfolios. The Internet bust, the advent of 9/11, and the ensuing economic slowdown has called into question the "Bigger is Better" mantra and has made it more difficult to sustain a large company composed of many divisions. As a result, some companies are choosing to focus on their core competencies and are selling off those companies and product lines that do not meet the "core product" test.

Companies that are selling off part of the product line to focus more on core business include Venture Measurement, Halliburton, and Racine Federated. Venture is selling its vortex flowmeters to focus more on its core businesses. These include target, turbine, and positive displacement flowmeters, as well as level products. Halliburton has sold its line of turbine flowmeters to a new company called Nu-Flo. In July 2003, Quantum Analytical, a division of Racine Federated, was acquired by Analytical Technology Inc.

### Technology Winners and Losers

On the technology end of the flow and pressure market, one concept that has not yet lived up to its poten-

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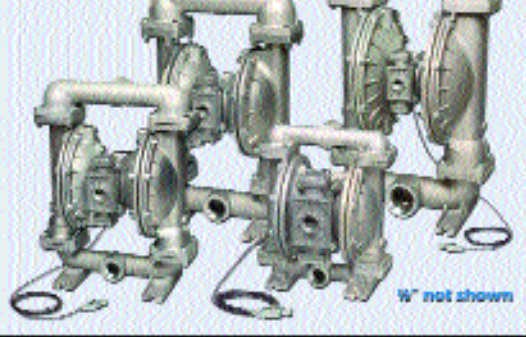
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sonic gas flow measurement. Besides ultrasonic flowmeters, both companies also offer turbine and positive displacement flowmeters. This means that end-users have the option of selecting new-technology or traditional-technology meters from either company. Whichever path end-users choose, these companies have a flowmeter to sell them. This dual-technology approach is an effective one, especially given the large installed base of turbine and positive displacement flowmeters.

### New Technologies Continue to Appear

As technology evolves and improves, companies will continue to spring up to develop the technology. Recent examples are Photon Control (Burnaby, British Columbia), which has developed an optical flowmeter for the oil and gas industry, and CIDRA (Wallingford, Conn.), which has developed a new type of flowmeter based on sonar principles. Single technology companies can perform an important service by developing technologies and products that are specific to particular industries and applications. For example, Asahi America has a line of plastic vortex meters (acquired from Universal Flow Monitors) that mainly serve the semiconductor industry. Once single technology companies become established, however, they often find

that they need to broaden their product line to grow.

### Under Pressure

Pressure measurement is another area that is interesting to look at in this context. Measurement of flow using differential pressure (DP) transmitters with an associated primary element has clearly been under pressure from other flow technologies. Users are opting for the higher accuracy and reliability of new-technology meters, such as ultrasonic and Coriolis, as an alternative to DP flow. However, the very large installed base of DP flowmeters means that they will be around for a very long time, and end-users will continue to replace existing DP flowmeters with new ones.

Gauge and absolute pressure transmitters do not face a similar challenge from another technology, and their use will continue to grow, along with the need to make pressure measurements. Some end-users are also choosing to replace their pressure gauges, switches, and transducers with pressure transmitters. Like DP flowmeters, level pressure transmitters face challenges from a variety of other technologies, including radar.

The pressure transmitter market is one that demonstrates the impact of globalization on an entire product line. Emerson Rosemount has maintained its dominant position in this market, both by introducing new products and by

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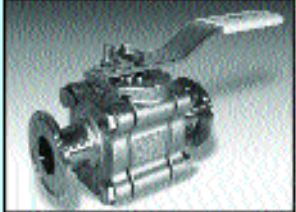
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maintaining international sales channels. Rosemount also sells temperature transmitters and a wide range of flowmeter types, enabling the company to meet a broad range of user requirements. ABB and Siemens have both made acquisitions in this field, and are now consolidating their offerings. Other companies with a strong presence in pressure measurement include Honeywell, Foxboro, and Yokogawa.

One trend in pressure measurement has been towards higher accuracy and increased stability. Users surveyed emphasize reliability as one of the most important criteria for selecting pressure transmitters. New and more stable products such as Emerson Rosemount's 3051S help meet this requirement. Honeywell has also introduced the concept of Lifetime Transmitters with its pressure and temperature transmitters. Competition within the market will continue to bring technology improvements to pressure measurement.

While the pressure transmitter market has suffered along with the rest of instrumentation during the economic slowdown of the past few years, there are encouraging signs on the horizon. Despite the persistent inability of the U.S. economy to create new jobs, productivity increases have led to significant growth in the growth rate of the gross domestic product (GDP). Capital spending by process companies is likely to increase in 2004, leading to more plant upgrades and more new plants built. This will have a positive effect on the pressure transmitter market and on flow instrumentation.

Adoption rates for Foundation Fieldbus and Profibus have been slower than projected for pressure transmitters and also for flowmeters. One reason is that these communication protocols are most likely to be ordered for new projects, and capital spending has been down for the past several years. One winner in this scenario has been HART. Some companies are selecting HART products as a stepping-stone to fieldbus protocols. This is likely to continue for at least several more years, while end-users and engineering firms sort out their choices among the protocols. **FC**

*Dr. Jesse Yoder is president of Flow Research and a regular contributor to Flow Control magazine. Dr. Yoder has been a leading analyst in the process control industry since 1986. He has written over 40 market studies and is currently completing a 12-volume series of studies on the worldwide flowmeter market. Included in this series is The World Market for Pressure Transmitters, which was published in January 2004 and covers all pressure-related technologies on the market today. Flow Research (www.flowresearch.com) offers a quarterly update service called the Worldflow Monitoring Service. You can contact Dr. Yoder by phone at 781 245-3200 or by e-mail at jesse@flowresearch.com.*



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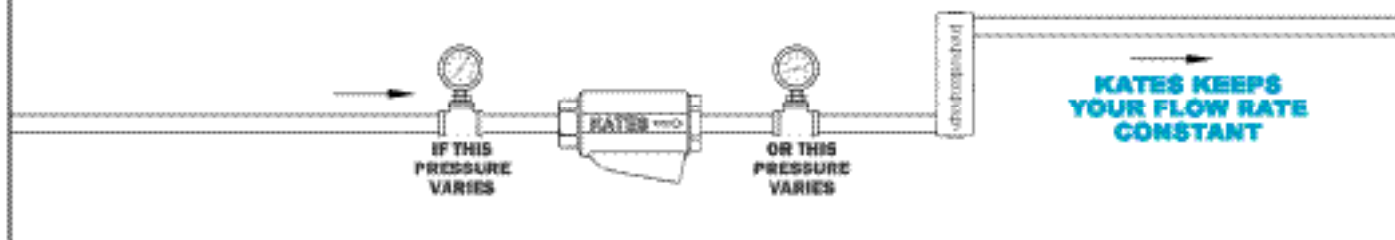
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