By Dr. Jesse Yoder

hen evaluating a flow technology, it is natural to consider growth rate as an important criterion. Why invest in products with a declining market base? It seems more logical to invest in growing markets that have increasing demand. Users may also prefer to buy into up and coming technologies, rather than into technologies that seem to be on their way out.

Several recent studies conducted by Flow Research into the worldwide positive displacement and turbine flowmeter markets suggest a broader group of criteria than just growth rate when evaluating a flow technology for purchase or for product development. These studies suggest that market size and installed base are just as important as growth rate.

In fact, the results of these studies of traditional technology flowmeters were not at all what we expected. Here are some of the surprising results.

The positive displacement and turbine flowmeter markets are far larger than expected. The two markets together total \$930 million worldwide. While we did find that some segments are declining, we also found that several segments are growing. There are far more suppliers than anticipated. We identified over 100 suppliers of positive displacement flowmeters and over 140 suppliers of turbine flowmeters worldwide.

Market size is important because even if the market for a type of



flowmeter is declining, that type of meter may have much greater market penetration than a type of flowmeter with a slightly declining market. For example, our research shows that revenues from positive displacement flowmeters are declining at about a 3 percent per year rate. Yet this market was valued at over \$500 million in 2001, on a worldwide basis. Compare this to vortex meters, which are growing at an average annual rate of 5 percent. Revenues from vortex meters worldwide only totaled \$140 million in 2001. So, vortex meters have less than one-third the market penetration as positive displacement meters, when revenues are considered.

Installed base is important because, in many cases, when end users replace a flowmeter, they replace it with one of the same type. This eliminates the need to learn a new technology, prevents the loss of auxiliary parts that may be required for that type of flowmeter and often makes it possible to make the replacement from existing stock. Installed base is more difficult to quantify than annual sales, although Flow Research does have some data

New tech meters are faster growing, and they incorporate the latest technical advances. However, traditional tech meters, while growing slower, or in some cases declining, have their use tied more to installed base and population growth. As a result, growth is more stable than that of new tech meters.

A New Traditional Perspective on Technology

CompanyNew Tech Flowmeters ManufacturedTraditional Tech Flowmeters ManufacturedABBCoriolis, magnetic, vortex, MV DPDP, positive displacement, turbine, variable areaActarisPositive displacement, turbine, variable areaControlotronUltrasonicEmerson BrooksCoriolis, magneticPositive displacement, variable areaEmerson DanielUltrasonicUltrasonicDP orifice, positive displacement, turbineEmerson Micro MotionCoriolisEmerson RosemountMagnetic, vortex, MV DPEnderss & HauserCoriolis, magnetic, vortex, ultrasonicFlow TechnologyPositive displacement, turbineFlow TechnologyPositive displacement, turbineFlow TechnologyCoriolis, magnetic, vortex, MV DPFlow TechnologyCoriolis, magnetic, vortex, MV DPFlow TechnologyDPFlow TechnologyDPFlow TechnologyDPFlow TechnologyDPFlow TechnologyDPFlow TechnologyDPFlow TechnologyDPInstrometUltrasonicFlow TechnologyDPFlow Technol	A Two-Track Policy? Flowmeters Manufactured by Leading Suppliers		
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* These are the core flowmeter technologies sold by these companies. Individual companies may have slightly broader product lines.



on this. But any type of flowmeter with a large installed base is pretty much guaranteed a long lifespan in terms of renewed customer orders.

It is also important to look at unit numbers, as well as revenue numbers when evaluating a market. Magnetic flowmeters are high in both revenues and units, while ultrasonic and Coriolis flowmeters are high in revenues when compared to their units. Both ultrasonic and Coriolis flowmeters have relatively high average selling prices, when compared to other meters, so their unit penetration is not as impressive as their revenue penetration. Positive displacement and turbine flowmeters, by contrast, are very high in terms of both revenues and unit numbers.

New Technology Meter Forecasts

Looking at the new technology flowmeter forecasts, several things stand out.

1. Ultrasonic and Coriolis are the two fastest growing meters.

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However, the Coriolis market is substantially bigger than the ultrasonic, both in terms of dollars and units.

- 2. The magnetic flowmeters market is the largest in terms of dollars, and is far and away the largest in terms of units. Even with its slower growth, magnetic flowmeters are still projected to account for more than 50 percent of new technology flowmeters sold in 2005.
- 3. Vortex flowmeters have a relatively small piece of the revenue pie, and also of the unit's pie. Unlike magnetic flowmeters, which start from a large base, but have a relatively small growth rate, vortex flowmeters start from a relatively small base, but still have only a modest growth rate.

Traditional Tech Meter Forecasts

To better understand the forecasts for positive displacement (PD) and turbine

flowmeters, it is important to understand that these two markets were divided into the following four segments.

- Municipal water (commercial and industrial)
- Municipal and industrial gas
- Oil (hydrocarbon measurement)
- Industrial liquids

Neither the positive displacement nor the turbine studies include the use of PD or turbine meters for residential applications. However, they both include the use of PD and turbine meters for commercial and industrial applications. This includes the use of meters to measure the consumption of water or gas at hotels, apartment buildings, office complexes and industrial manufacturing plants. The number of meters sold annually for residential purposes numbers in the millions, and is a market itself.

In terms of revenues, the positive displacement flowmeter market approaches the magnetic flowmeter market in size, and is in fact the sec-



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Flow Control magazine 908 788-0343 X141; Fax: 908 788-8416 rpiechota@witterpublishing.com ond largest market in terms of revenues. However, in 2003, worldwide sales of Coriolis meters are projected to exceed worldwide sales of positive displacement flowmeters.

In 2001, sales of new technology and traditional technology flowmeters are fairly close in revenue terms. However, this difference widens as time goes on. In 2005, sales of new technology flowmeters are projected to exceed \$2 billion, while the sales of traditional technology meters are projected to be in the \$1.3 billion range. However, when the remaining types of traditional technology meters are added, sales of traditional technology meters will most likely be in the range of \$1.6 billion for 2005.

It is really in the units that the difference is most pronounced. In 2001, there were more PD units and turbine units sold than even units of differential pressure flowmeters. And there were almost three times as many DP, PD and turbine meters sold as new technology flowmeters. In fact, in 2001, there were more positive displacement and also more turbine meters sold than the sum total of Coriolis, magnetic, ultrasonic and vortex meters. Even in 2005, projections are that more than twice as many traditional technology meters will sell as new technology meters. (See the chart on page 31.)

New Tech and Traditional Tech Meters are Like Stocks and Bonds

If we compare the flowmeter market to the stock market, new technology flowmeters are more like stocks, while traditional technology meters are more like bonds. New tech meters are faster growing, and they incorporate the latest technical advances. They are subject to growth spurts, but sometimes show little growth at all for a period of time.

Traditional tech meters are slower growing, or in some cases declining, but their use is more tied to installed base and population growth than are new tech meters. As a result, their growth is more stable than that of new tech meters, even if it is slower. DP, positive displacement and turbine meters will still be around in 30 years, regardless of what happens with new technology meters because their market size is so large. Like bonds, the yield may be lower, but it is more certain.

Those in the know about investment portfolios generally recommend a mixture of stocks and bonds. Likewise, some flowmeter companies have chosen to have a mixture of new tech and traditional tech meters. One advantage of this is that whether the customer selects new tech or traditional tech, such a company still has a product to sell them.

Two companies that follow this policy are Emerson Daniel and Instromet. Both companies manufacture both ultrasonic and turbine meters. Emerson Rosemount is also the leading supplier of pressure transmitters, including differential pressure flowmeters. Emerson Brooks is a supplier of oval gear and variable area flowmeters, as well as magnetic and Coriolis meters.

To what extent do the leading sup-

pliers of instrumentation follow a twotrack policy when it comes to supplying both new tech and traditional tech flowmeters? The chart on page 32 answers this question for some of the leading suppliers of flowmeters.

About the Author

Dr. Jesse Yoder is president of Flow Research, which he founded in 1999. He has been a writer and analyst in process control since 1986. Yoder 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 Turbine Flowmeters, which was released in September of this year. Flow Research (www.flowresearch.com) offers a quarterly update service called the Worldflow Monitoring Service. You can contact Dr. Yoder at 781 245-3200, or jesse@flowresearch.com.



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