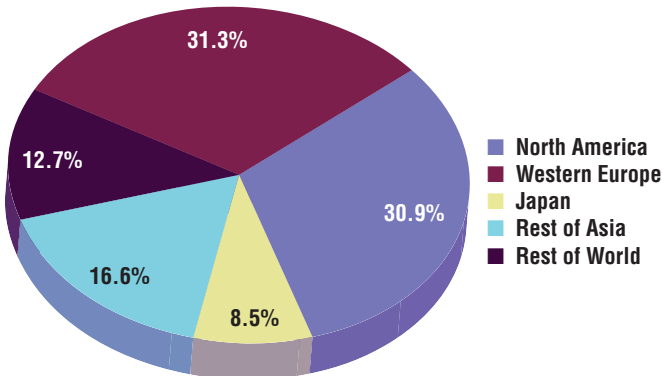


## Flow Business In the Middle East

### Reflections On an Increasingly Important Flowmeter Market

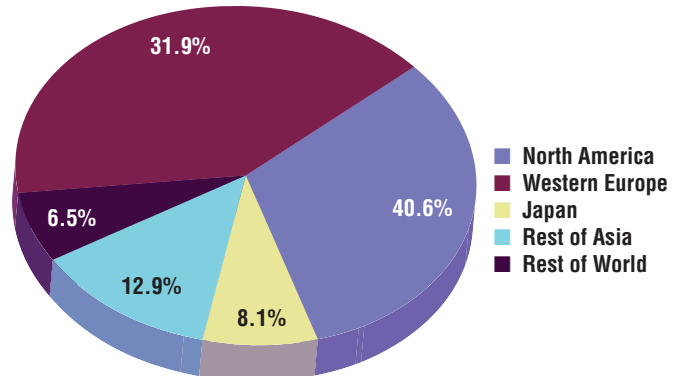
**Shipments of Ultrasonic Flowmeters by Region  
(Percent of Dollars)  
2009 = \$492.0 Million**



Source: Volume X, *The World Market for Flowmeters*, 3rd Edition, Flow Research Inc.

NOTE: Middle East shipments are included in the "Rest of World" category. China shipments are included in the "Rest of Asia" category.

**Shipments of Turbine Flowmeters by Region  
(Percent of Dollars)  
2009 = \$368.0 Million**



Source: Volume X, *The World Market for Flowmeters*, 3rd Edition, Flow Research Inc.

NOTE: Middle East shipments are included in the "Rest of World" category. China shipments are included in the "Rest of Asia" category.

In 2009, I traveled to the Middle East and did 15 onsite interviews with oil and gas producers and petrochemical companies in the United Arab Emirates (UAE), Oman, Saudi Arabia, and Qatar. The purpose of the interviews was to determine what types of flowmeters are currently in use in that region, what are the trends in flowmeter usage, and what kind of growth in the use of flowmeters can be expected for this region going forward. The following highlights some of the key conclusions I've made based on the content of these interviews:

- ✓ In terms of installed base, differential-pressure (DP) flowmeters are widely used for a variety of measurements inside plants



Oman Gas Company S.A.O.C. (OGC) is the major gas transportation company in Oman. It delivers natural gas for domestic, power and desalination, fertilizer, methanol, petrochemical, refinery, steel, and cement plants.

in the Middle East. There is also a large base of turbine flowmeters. Some plants have thousands of flowmeters installed, and many of them are of the DP variety.

- ✓ End-users cited the same reasons for flowmeter selection that are cited in other regions of the world when considering what types of flowmeters to buy: accuracy, reliability, and reduced need for maintenance, especially for custody-transfer flowmeters.

- ✓ Flowmeter calibration is becoming a more important issue for companies as the time comes to calibrate their ultrasonic, turbine, and Coriolis meters. There is no calibration facility in the Middle East, so companies are sending their meters to calibration facilities in Europe, the United States, and Canada.

- ✓ Some companies have back-up flowmeters that they can put in service while a flowmeter is being calibrated.

### How the Middle East is Different from the U.S. & Europe

Many of the concerns expressed by management and engineering personnel at oil & gas companies in the Middle East are similar to those expressed by oil & gas personnel in other regions. However, oil & gas companies in the Middle East are unique in certain ways:

- 1 The ambient temperature in the Middle East is much higher than it is in the United States or in Europe. This can have an impact on the operation of instrumentation and other electronic equipment, much of which is imported from the United States and Europe.

- 2 While many instrumentation companies, such as Emerson Process Management ([www.emersonprocess.com](http://www.emersonprocess.com)) and

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Siemens ([www.sea.siemens.com](http://www.sea.siemens.com)), have sales offices in the Middle East, these companies do not have manufacturing plants there for instrumentation. This results in longer-than-normal delivery times for many products, along with reduced technical support. While many companies have focused their growth strategies on China and India, they have paid less attention to the growth in Middle Eastern countries.

③ There are cultural and religious differences that need to be understood and respected. The religion of the majority of people in the Middle East, apart from Israel, is Islam. This is a dramatically different perspective from what many Americans and Europeans are used to. As an American who has traveled in the United Arab Emirates (UAE) and Oman during the Islamic holy period of Ramadan, this can take some getting used to. The religion and the different dress are an outward expression of a different worldview. I found in traveling there that the people are just like people everywhere, and I met many wonderful people there. One difference, however, is there is more of an emphasis on doing business face-to-face than is typically found in the United States or Europe.

④ In many ways, it is misleading to talk about "the Middle East" as if it is one entity. There are many differences in the Middle Eastern countries. On one hand, there are certain countries, such as Iran, Iraq and Syria, where political considerations make doing business there difficult. On the other hand, there are countries such as the UAE, Qatar and Oman that are genuinely progressive and are very friendly to western countries. This is also true of Saudi Arabia, except Saudi Arabia is more conservative and somewhat more bureaucratic, so doing business there can present more challenges than doing business in some of its neighboring countries.

⑤ Many of the companies in the Middle East are wholly or partly owned by the government, and there is not the atmosphere of open competition found in the United States. This means there are fewer companies to deal with, but the individual companies tend to be larger. For example, anyone who wants to sell into the oil & gas market in Saudi Arabia is likely to

be dealing with Saudi Aramco.

### How the Middle East is Like the U.S. & Europe

① End-users in oil & gas companies cited many of the same considerations as their American and European counterparts when asked about their criteria for flowmeter selection. The most important criteria considered are accuracy, reliability and reduced maintenance. Price is also important, as it is everywhere.

② The long-term trends in flowmeter usage parallel those in western countries. There is a pronounced trend towards the use of ultrasonic flowmeters for custody transfer of natural gas and away from turbine and DP flowmeters.

Ultrasonic flowmeters have no moving parts and require less maintenance than turbine and DP flowmeters. While companies may still replace their turbine flowmeters with other turbine meters, they are more likely to specify ultrasonic flowmeters for new projects.

③ For liquid flow measurement, there is a pronounced trend away from turbine flowmeters and toward Coriolis meters. This is especially true for custody-transfer applications and for measurement of liquid hydrocarbons.

④ Because Middle Eastern countries do not have standards organizations that are equivalent to the ISA (International Society of Automation) or the ISO (International Organization for Standardization), they tend to follow U.S. and European standards for their flowmeters and other instrumentation.

⑤ Oil & gas companies face similar issues with respect to calibration of flowmeters as their American and European counterparts. However, since there is no calibration facility in the Middle East, offsite calibration can be very expensive and time-consuming if the flowmeter has to be shipped to a facility in the United States, Canada or Europe. In addition, there is no generally accepted standard for how often ultrasonic flowmeters need to be calibrated. As a result, Middle Eastern companies tend to follow the recommendations of the manufacturer or they

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set their own internal policies. Many companies cited between three and seven years as the accepted time period for calibration of ultrasonic flowmeters.

### Broader Implications

What are the broader implications of this discussion for the flowmeter and instrumentation markets? My research in the Middle East confirms the long-term trend towards new-technology flowmeters and away from the traditional technologies. Managers and engineers in oil & gas companies are governed by a similar

set of values – whether they are in the United States, Germany, Japan or Qatar, they want new technology, reduced cost, reduced maintenance, and high reliability in their instrumentation. As a result, instrumentation companies need to continue to innovate, to achieve higher accuracy and reliability, and to remain price-competitive in order to win the business of oil & gas companies wherever they are located.

While new-technology flowmeters have an edge in this battle, this doesn't leave out the traditional technologies. DP flowmeter suppliers are innovating by offering multivariable pressure transmitters

that compute mass flow without requiring the use of a flow computer. Turbine flowmeter suppliers are innovating with more durable ball bearings, as well as by introducing dual-rotor technology. Primary element suppliers, such as Veris ([www.veris-inc.com](http://www.veris-inc.com)), are supplying innovative products such as the Acelebar that combine elements of a flow nozzle with an averaging Pitot tube. These types of innovations will help keep traditional flowmeters in play for many years despite the encroachment of new-technology flowmeters such as ultrasonic, magnetic, and vortex.

Another implication is that the Middle East is fertile territory for any instrumentation supplier that wants to devote capital and personnel to this region. Building a manufacturing facility would be a major step in this direction, along with providing calibration capabilities. While there are far more people in India and China than in the Middle East, the Middle East has a pronounced edge in oil and natural gas resources and reserves. China's large population makes it fertile ground for consumer-oriented products like cell-phones and computers, but for oil and gas production, no other region can compare to the Middle East. Perhaps it is time for instrumentation suppliers to take a new look in this direction. 

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