Not so long ago the meter reader was a regular visitor to all homes with electricity. Until the late 1980s in North America, and more than a decade later in Europe, meter readers would write down the usage data for later entry in the utility company’s accounts.

These continents’ paths have diverged, however, with powerful implications for AMR (Automatic Meter Reading) and AMI (Automatic Metering Infrastructure).

“The smart metering market has developed along two tracks,” says ABI Research senior analyst Sam Lucero. “This historical dichotomy has had a significant impact. Europe is the largest market for smart metering; despite more rapid expected growth, the smaller bases from which North America and Asia-Pacific are starting will keep them ranked second and third among world regions.”

North American electric utilities sought ways to make the meter reading process more efficient, an evolution that led through plug-in readers, to drive-by meter reading, to a fixed wireless infrastructure. The result: a fragmented and heterogeneous mix of AMR technologies based on both CDMA and GSM networks, as well as other WAN technologies.

Europe did not start automating meter reading until a decade later, but then went much further right from the start, with AMI deployments. In 2001, Italian utility ENEL deployed more than 27 million smart meters, creating a homogeneous AMI model subsequently followed by most other European suppliers. While AMR is strictly a one-way process, AMI allows frequent bi-directional communication, enabling demand response programs, automatic turn on/shutoff, and remote meter fault detection.

Not surprisingly given the overwhelming prevalence of GSM in Europe, GPRS is the cellular technology used for backhaul. This may raise obsolescence concerns among some utilities concerned that GSM/GPRS will be phased out as 3G networks are deployed. According to Lucero, however, “ABI Research does believe GSM/GPRS networks will be widely available for at least the next ten years. At fifteen years, prospects become more uncertain. Utilities signing contracts with cellular operators can receive guarantees that GSM/GPRS network connectivity will be available for the necessary timeframe.”

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