

# Gator McCluskie's Bar: A History of Automated Meter Reading

By Matthew Spaur,  
Senior Marketing Specialist

Technology companies wax nostalgic over their humble origins, such as Hewlett-Packard and their red barn or Apple Computer and Steve Jobs' garage. In the automated meter reading (AMR) industry, Itron looks back to December 1977 and the rented space behind Gator McCluskie's Bar in Hauser Lake, Idaho. Two days after moving into their new offices, Itron received \$250,000 in initial funding from Washington Water Power, today known as Avista Utilities.

That's when AMR was born, as a couple of engineers sat around talking about the concept over a couple of beers.

Actually, the concept of automating meter reading (AMR) reaches back at least to 1937. That's when Texas Electric Service Company vice president J. B. Thomas envisioned the "belly biller," a portable adding and imprinting machine that hung around a meter reader's neck and rested on the belly. The device would generate a utility bill on the customer's premise. However, Thomas's executive duties, as well as the numerous rates charged at the time, prevented him from pursuing his idea.

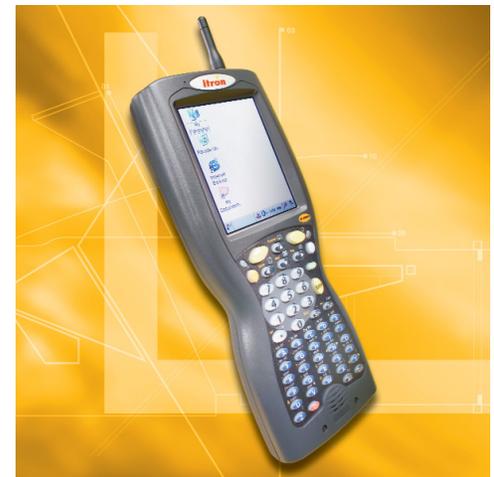
Forty years later, a former associate of Thomas, Earl Martinson, was one of the Itron founders working in rooms behind Gator McCluskie's Bar. Itron was contracted by Washington Water Power (WWP) to produce a device that could automate the utility meter reading and billing processes. In 1971, Wendell Satre, then WWP president and chairman, had envisioned something akin to the belly biller. Satre's inspiration came from one of the new handheld calculators that were becoming available at the time, calculators like the ones for which Hewlett-Packard would become famous. Satre and Martinson initially discussed the idea of an AMR device in 1976 at a Rotary luncheon.

By November 1978, WWP was field testing the first Itron portable computer to automate meter reading. It was named the Datameter and allowed utility meter readers to generate a bill on the spot once a meter reading was entered. The bill was then left under the customer's door. The Datameter stored route information and meter readings on cassette tapes. If the device was successful, WWP hoped it would increase billing accuracy, lower billing costs, improve cash flow, and save approximately \$254,000 a year in postage.

The Datameter was a success, and as computing technologies mushroomed throughout the 1980s, AMR field computers shrank in size and weight while growing in power and capabilities. Soon thereafter, Minneapolis-based EnScan was marketing its Encoder-Receiver-Transmitter, or ERT. An ERT could be attached to or built into a gas, water, or electricity meter to broadcast readings over radio frequency (RF) to a receiving unit in a handheld computer, mounted in an automobile, or positioned atop a utility pole or building. Meter data could now be collected without a utility employee physically visiting each meter site or manually entering data. In a strategic acquisition that would shape the AMR industry for years to come, Itron acquired EnScan in 1992, and with that acquisition, had assembled all the building blocks — endpoints, mobile computers and application software — to bring a cost-effective and highly scalable AMR solution to market.



*The Datameter was Itron's first product. It weighed nine pounds, stored data on cassette tapes, and printed utility bills on the customers premises.*



*Itron recently announced the Field Collector 200. This handheld computer weighs two pounds, runs on Microsoft® Windows CE, and stores up to 30,000 meter readings.*

In the years that followed, new competitors began entering the AMR industry. These companies included Metricom Inc.; Schlumberger, Inc.; CellNet Data Systems, Inc.; and a joint venture between General Electric Corporation and Ericsson. New systems carried automated meter readings over the various communication networks that were burgeoning: telephone, cellular, satellite, Ethernet, and more.

As the volume of automated meter data grew, utilities found that the data had value beyond improving the billing process. Coupled with increasing computing power, meter data became the foundation for improved demand forecasts. Meter data also drove new tools for designing distribution networks, identifying leaks and meter tampering, conserving resources, and lowering periods of peak demand to bolster system reliability.

Today, more than 80 million meters worldwide are read automatically, with nearly three-quarters of those in the United States. RF communications carry the bulk of automated readings in the United States, while power line communications from companies such as DCSI and Echelon dominate electrical AMR in Europe. AMR technology is becoming a must-have capability for utilities wishing to provide better customer service, financial performance, and regulatory compliance. Itron continues to dominate the industry, especially after acquiring EnScan, Schlumberger Electric Metering, Silicon Energy, Regional Economic Research, and other complimentary companies.

While AMR has certainly proven to be a successful technology, it is not yet as ubiquitous as one might suspect. In the North American market, market penetration for gas, water, and electric AMR systems in the United States stands at about 20%. Penetration in other parts of the world is far lower. The five-year survival rate for AMR-related companies is only 50%. Since the early 1970s, personal computers, Internet access, and cellular phones — all technologies that have a direct impact on AMR — have all grown to a much higher market penetration.

In the years since four men started working behind Gator McCluskie's Bar, the world feels like it has grown smaller. More people have more ways to consume finite resources such as natural gas. Utilities need increasingly smarter management to continue meeting consumer demand. Automated meter reading still has plenty of room to grow.



#### **Corporate Headquarters**

2818 North Sullivan Road  
Spokane Valley, Washington 99216  
U.S.A.  
Tel.: 1.509.924.9900  
Fax: 1.509.891.3355

Contact your Itron regional representative to learn more about the many ways Itron can help improve your business, or visit

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*Data from automated meter reading now supports a host of analytical applications inside utilities and major energy consumers.*



*Devices such as this Encoder-Receiver-Transmitter help automate the reading of natural gas meters.*