

Standards-Setters as Innovators

By Rae McQuade

Far from slowing business progress or interfering with creativity, natural gas standards have nurtured innovation and in effect created an ancillary industry—one with its roots in electronic technology and information dissemination rather than drilling rigs and pipelines. Understanding how this came about, and why it could only take place in the context of a carefully structured, voluntary industry organization, requires an appreciation of the history and makeup of the natural gas industry and the rules under which its standards-setting organization, the Gas Industry Standards Board (GISB), has chosen to govern itself.

A Short History of the Gas Industry

Traditionally, the natural gas industry has consisted of four segments. Producers explore for gas and drill and develop fields. Pipelines transport the gas, often for thousands of miles, to markets throughout the United States. Local distribution companies (LDCs), also known as local utilities, take the gas at a point known as the city gate and pipe it directly to residential, commercial and industrial customers. While anyone who uses natural gas could be called an end user, the term has traditionally been applied to the largest industrial consumers of gas—companies like fertilizer manufacturers, auto makers and generators of electricity.

Because each industry segment had a distinct function and set of business objectives, the gas industry frequently found itself in disagreement on policies and principles. This tendency toward divisiveness was exacerbated by the differing regulatory regimes that applied to the industry's segments. Producers operated under price controls until these limits were gradually eliminated beginning in the 1970s. Interstate pipelines were monopolies regulated by the Federal Energy Regulatory Commission (FERC), which controlled prices and rates of return and determined which new pipelines could be built, and where. LDCs were also regulated monopolies, but were controlled by state regulatory commissions, in much the same way that telephones were regulated prior to the breakup of the AT&T system.

Under this system, the natural gas business may not have been particularly exciting, but it worked well enough to ensure shareholders a steady dividend return and consumers the reliable delivery of an important commodity. Interstate pipelines bought natural gas at one end and sold it at the other, though they earned their money on gas transportation, not sales. The same was true, for the most part, of LDCs. But increasingly, large industrial users of natural gas sought ways to inject the forces of competition into the gas market. They envisioned a system that would allow them to buy gas more cheaply from someone other than their local utility—perhaps a producer, or an independent marketer—and arrange their own transportation.

Regulatory changes that began in the 1980s made such scenarios increasingly common. The culmination of these reforms was FERC Order 636 in 1992. It ended the pipelines' so-called merchant function, making them exclusively transporters of natural gas. This opened the natural gas market to numerous new players, including marketers, brokers and unregulated pipeline affiliates. LDCs for the most part remained under regulation by state commissioners, but they were increasingly given the flexibility to unbundle, or sell separately, their services, allowing end users to select the most cost-efficient combination of supply, transportation, storage, and other services. These choices were given first to large industrial users, but now commercial and even residential customers have the opportunity in many states and localities to leave their utilities and arrange to buy gas from a number of competing suppliers. Delivery of the gas, however, continues to be carried out by utilities.

Entering the Era of Information

The gas industry was ushered into the information age in part by federal regulation. In Order 636, FERC required pipelines to make released capacity available through what it termed “electronic bulletin boards” (EBBs). Many pipelines saw the possibility that these EBBs might give them a competitive edge, or even become profit centers in their own right. They set out to create distinct products, each with its own design and method of operation. LDCs that had access to more than one pipeline were forced to hire large staffs of gas buyers and transportation arrangers who worked on multiple computer screens accessing multiple proprietary EBBs, all in an attempt to arrange the best gas supply and delivery packages.

The gas industry realized that the use of electronic information systems had potentially major implications for the way gas was bought and sold and began discussions on how electronic information systems would work in the burgeoning natural gas marketplace. To help those discussions and to show a commitment to electronic communication within the industry, FERC in 1993 established five working groups to iron out EBB details. The working groups resolved many technical issues concerning EBBs, including an agreement to base gas industry standards on the already-established electronic data interchange (EDI) protocols.

Broader issues, however, remained unresolved. For instance, should FERC require a common set of electronic communications standards, encourage voluntary standards, or permit each pipeline to use its own system? If there were to be standards, should they be set by FERC, the industry, or a third party?

To help resolve these and other key questions, FERC consolidated its working groups and instructed them to continue to seek solutions to the remaining problems. Meanwhile the Natural Gas Council—an industry organization founded by trade associations representing producers, pipelines and LDCs—initiated a series of open discussions on standards issues. The discussions by the council and FERC—which frequently involved the same industry participants—led to the general acceptance of the concept of a board that came to be known as the Gas Industry Standards Board (GISB). This organization would develop and maintain the voluntary standards on electronic information exchange and electronic communications necessary to promote reliable gas service.

Mindful of the industry’s history of internecine squabbling, a careful set of rules was painstakingly crafted by GISB’s founders. Five membership segments were established: the traditional four of producers, distributors, pipelines and end users and a fifth—service providers—to include such new industry participants as brokers, marketers, financial services companies, consultants, law firms, computer firms and other businesses. Chosen to govern the new organization were two 25-member governing boards with five members from each segment: the Board of Directors, with responsibility for administrative and financial matters; and the Executive Committee, which was given the responsibility for developing the standards themselves. (Later, numerous working groups and task forces were formed to assist the Executive Committee.)

GISB’s voting rules were devised to ensure that all decisions were the result of a genuine industry consensus. Prospective standards must get at least 17 affirmative votes in the Executive Committee, and there must be at least two affirmative votes from each segment. Standards must then be ratified by the GISB membership; a 67 percent affirmative vote of those submitting ballots is required for a standard to get final approval. On the Board of Directors, changes in bylaws or articles of incorporation need at least 19 affirmative votes, with at least 2 affirmative votes from each segment. The new organization also made an early commitment to openness and the broadest possible industry participation. All meetings are open to the public, and while GISB’s dues have been intentionally kept at a reasonable level to encourage companies to join, even nonmembers are welcome to propose and comment on prospective standards and to vote on all but Board of Directors, Executive Committee, and standards ratification initiatives. GISB

maintains a small staff in Houston, but the organization's work is principally carried out by a large cadre of volunteers from member companies.

GISB Comes of Age

GISB's polity made sense on paper to most members of the gas industry, but there was real doubt during the first months after the organization's incorporation in 1994 whether its goal of achieving a voluntary, industry-driven standards regime would ever be realized. There were fears that the intricate voting mechanism wouldn't work in practice or that federal regulators would attempt to second-guess GISB or even take over the standards-setting function altogether.

In 1995, FERC issued an advanced notice of proposed rulemaking setting a March 15, 1996, deadline for comments "containing detailed proposals for the standard set of information that the commission should require all pipelines to use" in conducting business electronically, "as well as for standard nomenclature and standards for any associated business practices and procedures." While the commission said it expected GISB "may become a forum through which these industry efforts may be coordinated," FERC made it clear that it was ready to step in if the industry couldn't accomplish the task itself. As the result of a substantial effort involving hundreds of volunteers, GISB managed to meet FERC's deadline and on March 15, 1996, the organization submitted 140 proposed standards to the commission.

The fears that GISB would die a premature death were largely laid to rest on April 24, 1996, when FERC issued its notice of proposed rulemaking (NOPR) on business practices standards for the natural gas industry. The NOPR proposed that interstate pipelines adopt the 140 standards that GISB had submitted to the commission and commended the gas industry and GISB for the work they put into developing the standards "and the significant progress they have made toward standardization." The commission said GISB's standards "regularize the means by which the entire industry will conduct business across the interstate pipeline grid." Declaring that GISB's standards "represent a formidable step towards improved efficiency and competitiveness in the gas industry," FERC proposed that interstate pipelines comply with the GISB definitions, standards and data sets by Jan. 1, 1997.

Since that important milestone, the pace of work at GISB has not slowed. FERC and GISB have maintained a collegial relationship that has enabled the two organizations to create a unique public-private partnership. In a five-year period, GISB for its part has created a body of over 300 standards. Over the past year, the organization has concentrated on standards designed to ease the inevitable move of pipeline EBBs to the burgeoning Internet. FERC has required interstate pipelines to post all information and conduct all business using Internet protocols by June 1, 2000. Although they are not required to do so, pipelines may also provide interactive sites on the World Wide Web.

Transforming an Industry

What has been the effect on the natural gas industry of five years of GISB standards? A former chairman declared that GISB's goal is to create a "seamless natural gas marketplace," and there is every indication that this is becoming a reality. Standardization, coupled with the use of electronic commerce, has improved communication between multiple trading partners, made information necessary for business transactions less ambiguous, allowed transactions to be completed more quickly, and provided more accountability. It has also facilitated tighter coordination between trading partners and automated the business process. As an example of the tangible benefits of this process, the Commodity Futures Trading Commission has attributed to GISB standards the reduction in the New York Mercantile Exchange trading cycle for gas futures from five days to three days.

Besides enhancing efficiency, electronic commerce and standardization are leading to increased competition. The more relevant information that is made available to market participants in a

timely manner, the better the marketplace functions. And standards for electronic communication make doing business in the gas marketplace considerably simpler. This helps to level the playing field for smaller players, who previously did not have the staff to devote to learning each pipeline's way of doing business, as well as to improve efficiency for larger firms.

The current movement toward the Internet is destined to continue these trends. FERC has mandated that pipeline Web sites have a "common look and feel," further increasing their ease of use. Security concerns are being addressed at the same time the Internet standards are being developed. The U.S. Department of Energy (DOE) was one of GISB's first members, and its close relationship with DOE has enabled GISB to work with the Sandia and Lawrence Livermore National Laboratories to ensure that the Internet remains a secure and reliable communications medium for the gas industry.

The transformation of the gas market from its traditional way of doing business—with its mounds of paper and faxes and countless phone calls—to an almost instantaneous Web-based process has happened in a relatively short period of time, and naturally it has not been easy for all market participants. Smaller companies in particular have had difficulty finding sufficient in-house resources to prepare to buy and sell gas on the Internet. But as so frequently happens when industries undergo major changes, some companies' problems become other companies' opportunities. Dozens of firms, some of them startups and others veteran players in the business of electronic commerce, have emerged to offer products and services to help small—and large—gas companies meet GISB's standards and FERC's deadlines.

Both Need and Speed

It's possible that this gas market evolution would have taken place if GISB had never been created, but I think the chances are very small. FERC would certainly have tried to write electronic standards on its own, but the historical divisions in the gas industry would in all likelihood have reasserted themselves. Without GISB's ability to function as a forum for working out differences before standards are even proposed, the commission's rulemakings would have been greeted with objections, rehearing petitions, and lawsuits by companies and trade associations that felt they had been disadvantaged by the proposed rules.

Eventually, some standards might have made it through the legal process and achieved implementation. But they would likely have been too little and too late for the gas industry to take advantage of an expanding economy and a growing need for new electric generation capacity. Competing fuels like coal, unconstrained by regulation, would undoubtedly have moved to take away many promising markets. Because some of the FERC-imposed standards would have been diluted because of the need for compromises either at the regulatory or judicial level, there are no assurances that the standards would have functioned properly once they were imposed. And because the prospects for future new electronic standards or changes in existing standards would have been cloudy at best, many companies that had been poised to serve the new natural gas market would have decided that the risks were just too great. The industry would have been left with fewer choices, and far less satisfactory ones.

My argument in this paper is that, far from harming the natural gas industry by causing delays in the development of needed standards, GISB has pushed the industry toward a highly competitive and highly efficient future. It has, in fact, gone faster than some market participants would prefer, but by setting a level of expectation that is reasonably congruent with the state of available technology, it has shown companies what it takes to compete successfully in the new natural gas industry. And by stressing that its standards only represent minimum levels of performance, it has allowed truly innovative companies to take full advantage of their creativity.

And creativity, despite what many people would argue, is by no means incompatible with standards. Standards can, in fact, *enhance* the creative process. Undoubtedly there are grade-school students—and perhaps even some teachers—who would argue that standardized spelling stifles attempts at creative writing. Having to make frequent trips to the dictionary, after all, can

distract the imagination. But most professional writers would strenuously disagree. Words, they would say, are the building blocks of writing. Having standards on how words are spelled in fact frees one from having to make thousands of inessential decisions and allows creativity where it really counts: in prose style, plotting, character development, and all the other elements of fine, creative writing.

It's possible that because GISB is developing standards for an industry that is still in the process of transformation, it has an advantage over standards-setting organizations that must deal with more mature businesses. But I'm convinced that GISB's success is attributable far more to its carefully balanced structure, with its complex but highly effective voting procedure, its two distinct governing boards, and its other attempts to ensure that the interests of all market participants are given the proper weight. GISB's record shows that standards organizations, properly constituted, not only can find a balance between innovation and standardization but also can serve as the very catalyst for competitive transformation.

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