



GISB Standards Impact The Real World

By Eldon Moreland

HOUSTON—April 1 ushered in the first round of implementation for the 140 business practices commonly referred to as the Gas Industry Standards Board standards. While the early going has been rocky, there is still a great deal of optimism that these standards can improve the efficiency of the natural gas industry.

To understand the reasons for this optimism, one must look at not only today's issues, but also historical trends and probable developments in tomorrow's gas industry.

In the late 1980s, pipeline companies were buried in paper from the hundreds of faxes that poured in each day for gas nominations. To eliminate this flood of paper brought on by open access, several innovative pipelines decided to simplify their lives by using computers to manage these transactions. Consequently, they created electronic bulletin boards (EBBs) that shippers could use to enter information directly into the pipelines' computer systems. This strategy generally worked well for the pipelines, because it reduced not only the paper, but the associated costs of data entry.

Unfortunately, as more pipelines followed suit and EBBs proliferated, they did not bring the same efficiency to the rest of the industry. Shippers that had their own computer systems were now required to enter their information twice—once in their own systems and once in the pipelines' systems. To make matters worse, there were no standards, so each company designed its own EBB without regard for what others had done. Some were good; some were bad. Most importantly however, they were all different.

This created a new skill set for shippers. It was no longer enough for commercial personnel to be experts in their designated areas, they now had to master a different computer system for each pipeline they worked with. This raised costs for shippers when they had to purchase custom hardware, spend more time learning computer systems, and increase investments in cross training.

The industry recognized the problem, and several companies and trade associations began to work together to resolve it. The Interstate Natural Gas Association of America, the Council of Petroleum Accounting Societies, and the American Gas Association co-sponsored a cross-industry task force to tackle the problem. This

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task force eventually produced a document that was issued as COPAS Bulletin 28. It recommended numerous changes in business practices, one of which was the implementation of standardized electronic data interchange (EDI).

In 1990, 10 companies joined to form a pilot group to test EDI for the gas industry. The pilot revealed several issues. First, the participants discovered that when it came to managing gas transactions, there were nominations, and then there was everything else.

Next, they learned that the various segments of the gas industry did not really understand one another's business. As a result of that lack of understanding, or perhaps because of historical differences, the industry segments did not trust one another. Pilot group participants also learned that they did not truly understand electronic commerce. However, they did agree that EDI was a good idea, and overcame enough of their differences to make the pilot a success.

Glimpse Of The Future

One story from the pilot illustrates the tremendous potential of EDI. A key objective was to demonstrate a successful chain of transactions from the wellhead to the burner tip. A producer would nominate gas on a pipeline and sell it to a marketer. The marketer would take title to the gas, ship it through a second pipeline to show pipe-to-pipe transfers, and then sell it to a local distribution company. The LDC would pick up the gas at the California border, and ship the commodity to its own distribution system.

As fate would have it, one of the participants could not get its system to work in time to complete the test. After searching for an alternate transmission route that

would still prove the original test case, the pilot team finally found one that could work if one additional leg were inserted into the path.

The new path required NGC to send EDI nominations to Transwestern Pipeline. Both been part of the original path, but they had not tested with each other. Because both companies shared the same standard transaction maps and incentives they were able to quickly bring new transactions on-line and successfully complete the pilot.

More importantly, they demonstrated that dedicated trading partners working with a true standard could implement EDI nominations in 48 hours. The process worked so well, it stayed in production for more than a year.

Sadly, this may still be the industry's best EDI success story. If it were repeatable, a shipper could automate its nominations to every interstate pipeline in the country in about 170 days! That would be a huge gain in efficiency for the entire industry, and would make gas a more desirable commodity.

Instead, recent experience shows that it takes from two to eight weeks for experienced trading partners to implement a successful EDI nomination process on a single pipeline. A large part of this extra time is used to accommodate differing interpretations and deviations from the GISB standards.

Proliferating Systems

Even though the industry has not yet mastered the standard transaction, it has begun to reap benefits from standardization. Five years ago, it was not uncommon for gas schedulers to have two kinds of modems on their desks to nominate to two different pipelines. In fact, I am familiar with one situation where a gas scheduler had three modems stacked under his desk. As he worked on different pipelines throughout the day, he would turn off his computer, crawl under his desk, unplug one modem and plug another one in before turning his computer back on and getting back to work.

Fortunately, a communication standard was one of the first issues addressed by the Federal Energy Regulatory Commission EBB working groups in 1994. The issue was put to rest when the Commission adopted a standard communication protocol in Order 587. Today, all gas schedulers at NGC are able to use the same type of modem and communications protocol.

TABLE 1

Summary Statistics

	Feb. 93	Aug. 95	GISB 97
Data Formats	16	17	3
Electronic Nomination Systems	12	12	?
Pipes Without An Electronic Nomination System	3	2	0
Communication Protocols	5	1	1
Communications Programs Required	5	8	0
Pipelines Supporting Voluntary Standards	1	1	80+

Similar opportunities abound for GISB standards.

In February 1993, NGC conducted a survey of nomination processes on 18 large interstate pipelines on which NGC was a significant shipper. Because of variations among the 18 pipelines, NGC had to maintain 16 data formats (Table 1). This means NGC had to write and maintain 16 computer programs just to print the nomination letters on those pipelines.

In addition, 15 of the pipelines had electronic nomination systems. This required at least 12 additional programs to create electronic files to send to the pipelines. To add to the confusion, five communications programs using five different protocols, which required at least five new interface programs, were necessary to transmit the information to the pipelines. It is not difficult to understand why shippers were frustrated.

Two and one-half years later, NGC conducted the survey again. It showed a classic example of one step forward and two steps back for the sample group. The communications standard mentioned helped tremendously. However, one previously unautomated pipeline purchased an existing nomination system. This appeared to be a benefit until that pipe introduced another unique data format into the equation.

In the meantime, three pipelines changed their "recommended" communications programs for shippers, upping the ante to eight for NGC's sample group.

Contrast these horror stories with the third column of Table 1. This column represents the GISB standards now being implemented. If the standards are strictly enforced, shippers will be required to master only three data formats and one communication protocol to efficiently and effectively communicate nominations to all interstate pipelines.

The same types of issues exist on the data side of electronic commerce. In February 1993, the 18 pipelines NGC surveyed used 80 data elements in their nomination processes. In August 1995, they used 81, which seems to be a minor change. However, closer examination of the data showed there were actually 15 changes. Seven items were deleted and eight new ones were added.

One of the worst examples is the descriptive names pipelines use to identify various points on their systems. In Feb-

ruary 1993, NGC's sample group used 15 different methods to name their points. One pipeline required three descriptions for a single point on its electronic nomination form. (Fortunately this pipeline modified its business practices, and the number of point descriptors fell to 12).

But with implementation of the GISB standards, natural gas shippers are now able to use a single description called a "data reference number" to identify points on any pipeline. While the data reference number system is not yet perfect, it is universal and available for free.

Key Standards

Among the 140 GISB standards, there are four that stand out as having the greatest impact on shippers. One is generally referred as the EDM. This stands for electronic delivery mechanism, and refers to the use of electronic data interchange (EDI) and the Internet. It requires a very technical discussion that is beyond the scope of this article.

Two others incorporate the use of common codes. For the purposes of electronic commerce, all companies will be identified by their "DUNS" number issued by Dun & Bradstreet, and all points will be identified by a standard data reference number issued by Dwight's Energy Data.

The fourth GISB standard with great impact is the one that creates a national 11:30 a.m. nomination deadline. For a small shipper who moves gas on only one or two pipelines, this is not a big issue. However, for medium to large shippers it is huge.

Work that used to be spread throughout the day with staggered nomination deadlines will now be concentrated into a single hour. This will cause shippers to either hire more people, send their nominations in earlier, or become more efficient.

Those companies engaged in electronic commerce will have a two-fold competitive advantage. First, they will lower their cost structures by utilizing their personnel more efficiently. Second, their efficiency will allow them to trade closer to nomination deadlines, thereby picking up deals other companies cannot because of timing considerations.

Emerging Issues

With the implementation of GISB stan-

dards, the natural gas industry is working diligently to put the EBB genie back in the bottle. When the power industry began its march toward electronic commerce, it recognized the gas industry's EBB problem. Individual companies also saw that after years of spending millions of dollars, no pipeline EBB system provided a competitive advantage.

Rather than creating custom EBBs, the power companies chose to develop standards first, and then share the cost of development. Progress thus far has been rapid (in terms of moving an industry), and the process is much more efficient and effective than early gas industry efforts.

However, the gas industry does not seem ready to adopt the cooperative model. Pipeline companies are racing to develop customized web sites to support GISB requirements. Some LDCs have already begun developing custom web sites, and others are in the planning stages. Meanwhile, state regulators are studying ways to share required information on an issue-by-issue basis.

While the web sites and EBBs are good concepts, custom developing unique solutions is not. Without guiding standards, individual companies will optimize on a micro level—doing what is most efficient for themselves. If we do not react quickly, this process will recreate the EBB problem on the Internet, and then repeat itself at the state and local levels as deregulation moves downstream.

The standards do not necessarily have to include a common look and feel, which many GISB members fear. Many shippers would be satisfied with more basic standards that merely allowed users to transfer their knowledge and usage skills from one system to the next. This would require standards for content, structure, and the basics of a user interface.

The Trend

The energy industry has a different structure than many of the classic electronic commerce success stories. Often an industry has a few dominant players who decide to implement electronic commerce for their own benefit. They then push it down the supply chain, and eventually make it a requirement for conducting business. Though not always a pleasant experience, the process dramatically improves the efficiency and competitive position of those who embrace it.

The retail industry has seen this development with Wal-Mart and Sears taking the lead. In the automotive industry it was Ford, GM and Chrysler. However, the energy business, even though it is dominated by some very large pipeline and utility families, does not have the same kind of 500-pound gorillas with the power and incentive to move the industry to national standards.



FERC watched the early efforts of voluntary standards in the gas industry, and recognized the lack of concerted market forces. The Commission then began pushing the gas industry toward the critical mass necessary for effective electronic commerce. FERC began issuing orders involving electronic commerce for the gas industry 10 years ago with Order No. 497.

When it began the process of restructuring the natural gas industry, the Commission thoroughly investigated the potential of electronic commerce, and decided it would enhance efficiency for the industry as a whole. Since then, the Commission has encouraged the industry to develop electronic commerce standards, and then the agency adopted the standards as regulations.

Each step has brought wider coverage of business practices and a greater level of acceptance and understanding in the industry. The GISB standards now being implemented cover the 10 business requirements that were deemed "high priority" by industry work groups. How well industry implements these standards will determine whether this is a successful model.

In restructuring the power industry, FERC put electronic commerce front and center from the very beginning. As did natural gas, the power industry convened work groups to define standards which the Commission later issued as a rule. Order 889, which defines the initial electronic commerce requirements and infrastructure, was issued as a companion to Order 888, which redefines the workings of the entire electric power industry.

In both the gas and electric situations, what FERC is doing is forcing regulated companies to put an electronic commerce infrastructure in place. Once the infrastructure is there, capital expenditures are no longer a barrier to standardized electronic commerce, and market forces should take over. The bottom line is that electronic commerce is here to stay for both the gas and power industries. The specifics will evolve over time, but the basic concept of sharing intercompany information in a standardized format will remain.

There are also some issues hidden beneath the surface that will have a profound impact on the growth of electronic commerce in the gas and power industries. As competition and market maturation shrink margins, competitors will cooperate with one another to jointly cut their costs. With the rapid consolidation of the gas and power markets, companies will soon be wanting to share information across energy commodities. No one wants to talk

about these issues yet, but they will certainly make some strange bedfellows as we move forward.

Picture of Success

Key factors to developing successful electronic commerce in the gas industry will include not only implementing standards, but eliminating proprietary pipeline EBBs, limited or no development of proprietary EBBs for LDCs, and a significant number of companies competing for our electronic commerce dollars. The potential for success is here today, since some of these conditions are already developing.

Progressive pipelines are embracing GISB standards, and are moving away from EBBs. Wise LDCs are evaluating the impact of GISB standards before moving forward, and electronic commerce companies are starting to notice the gas industry.

Already two of the titans of electronic commerce are developing specialized gas solutions. General Electric Information Systems, the world's largest provider of electronic commerce services, has already delivered a turnkey EDI solution for nominations, confirmations, and scheduled volumes. GE is working to expand the solu-

tion to cover all GISB standards for both shippers and transporters.

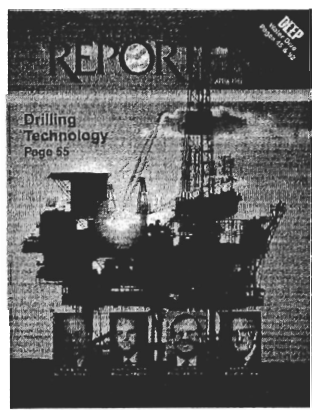
In addition, Saber Decisions Technologies, a branch of the famed airline reservation system company, is planning to deliver a GISB compliant EDI solution for pipelines this summer. Saber will later expand it to include functionality for shippers and a centralized EBB.

The goal of standards and electronic commerce is to improve operational efficiency of the gas industry as a whole. The key to success is widespread implementation, which can lower the cost structure of the entire industry.

If we can make natural gas easier to manage and lower its cost, it will improve our position relative to other energy commodities. Most of the large industry players have already made significant investments, and market forces should soon take over to make standardized electronic commerce a common part of everyone's gas day. □

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