

The Challenge to Be Compliant

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The end of this year marks a looming deadline for corporate America to meet new compliance laws. The Sarbanes-Oxley Act may represent the most significant and broadest change to accounting requirements and securities laws since the 1930s. The legislation was passed by Congress in an attempt to counter the perceived meltdown in the capital markets stemming from massive earnings restatements by a few large global corporations. Without some reforms to protect investors, it was believed that the market would further weaken, with potentially devastating consequences for the U.S. economy.

With extensive trading scandals in the North American gas and power businesses in recent years, the credibility of the energy market in general has suffered immensely. Several companies have admitted that employees lied about gas-trading activity and attempted to manipulate prices. Traders from a parade of energy companies had engaged in so-called "round-trip" trades, where the same amount of gas was bought and sold at the same price with a single party. Admissions of incorrect and false price reports were also uncovered. Companies that admitted the wrongdoing said the trades were designed to boost volume and bragging rights, not to make money. Regardless of that claim, it is fairly clear that the rigging of the California power markets, to cite one example, cost consumers millions unnecessarily.

The Sarbanes-Oxley Act sets some of the toughest corporate governance standards in the world, and corporations will be challenged to comply starting this year. With companies being required to report on the reliability of their financial controls, chief executive officers (CEOs), chief financial officers (CFOs) and chief risk officers (CROs) are being asked to put themselves on the line and acknowledge responsibility for the controls, verifying their effectiveness.

Most companies are focused on demonstrating compliance with Sections 302 and 404 of Sarbanes-Oxley. Section 302 requires executive representations by certifying officers via statements as to the "appropriateness of the financial statements and disclosures contained in the periodic report, and that those financial statements and disclosures fairly present, in all material respects,

the operations and financial condition of the issuer." A violation of this section must be knowing and intentional to give rise to liability. Section 404 requires an annual assessment of the effectiveness of internal control over financial reporting. The company officers now will have personal responsibility, with true penalties associated with violations.

The majority of U.S.-based merchant energy organizations are in various stages of Sarbanes-Oxley projects in an effort to avoid any potential liability. For energy companies, probably the most challenging area in which to reach compliance is energy transaction and risk management. This area is most definitely the sore spot brought on by the events in recent years.



Guidelines

The Committee of Chief Risk Officers (CCRO) has published multiple white papers that provide guidelines to the energy industry on relevant topics, including valuation and risk metrics, credit risk management and price index reporting. The guidelines formulate best practices for energy-commodity transaction processing.

Some key principles outlined are for the companies to maintain accountability, integrity, independence and objectivity while maintaining proper records for auditing. Those with an economic interest in the outcome of transactions should not be involved in gathering and provisioning the basis pricing. Independent departments should be responsible and accountable for the completeness and the accuracy of the data. Safeguards should be instituted that guard against the possibility of manipulation of transaction data, and all transaction data should be traceable and verifiable.

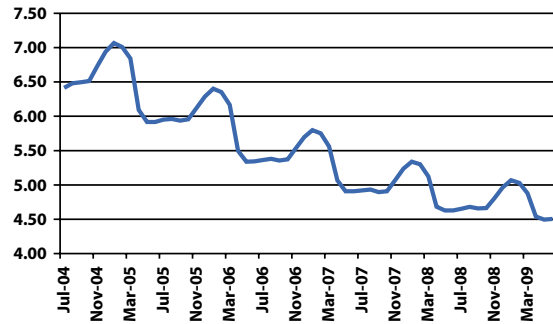
The major challenge that risk officers face in achieving Sarbanes-Oxley compliance is ensuring an accurate valuation of their trade book. One tool that can help in this process is a reliable value-at-risk forecasting procedure. This procedure can best be formulated from a basis of comprehensive transactional data that is not generated internally. A fundamental aspect of determining valuation is to plot and build forward curves based upon current and historical pricing data. What these companies seek are wide-ranging market indicators that they can use both for valuation purposes to meet the compliance requirements and for purposes of crafting a trading strategy to remain competitive.

Forward Curves

Forward price curves, simply defined, are prices for a particular commodity that are set today for a series of future delivery dates. The creation of this pricing model is mission-critical for participants in today's energy markets. Determining the forward curve can be difficult and challenging as there is often only a limited picture of the theoretical continuous forward price curve data available. The term structure that can be observed at any given point in time will be based on a limited number of product prices and it is a function of liquidity in the market and any participant's ability to access comprehensive market data.

There will often be cases where the product one needs to price is not actively traded in the market. There also may well be a need to estimate prices for delivery dates that are further out than those that are being traded in the market. Generally, where there is insufficient data available to develop a meaningful curve, some method of interpolation or regression analysis is used.

NYMEX Natural Gas - 5 Year Forward Curve

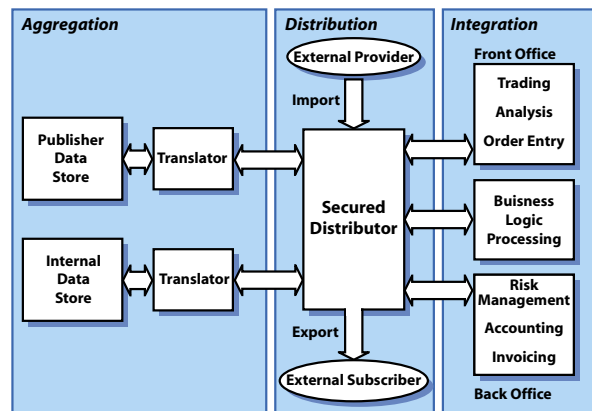


The NYMEX Natural Gas Forward Curve shows current market sentiment that further out delivery carries lower valuation.

Bottom line: If an energy merchant is determining its own forward price curves from internal data sources or from survey-driven, non-transactional sources, and if its available data is limited, the company may encounter serious hurdles in demonstrating transparency and audit compliance. This makes a strong argument for the creation and use of independently developed forward-curve data derived from a database of actual transactional data.

Price Indices

One of the elements of the basis data historically required for the energy trading company has been reliable market price indices. Market indices were designed to provide a confident level of price transparency. Regional natural-gas pricing indexes have developed into the standard benchmarks used nationwide to value gas trades worth billions each year. Producers often sign contracts to sell their natural gas or power to a buyer for the price of a specific nearby index. Sometimes these contracts combine different publications or locations, adding or subtracting a fixed amount to arrive at a price. Buyers do the same, with the result that on long-term contracts



A Data Framework to manage real-time data flow.

lasting months or years, the actual price paid for the commodity floats up and down in relation to the regional index movement.

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But trading irregularities and outright index manipulation in the last few years severely damaged the credibility of the voluntary price reporting fundamental to the creation of indices. The industry as a whole relies on this index pricing, and it simply cannot afford any perception that the underlying information is not reliable. Index publishers have scrambled to make changes to their information-gathering processes and have begun to emerge from under this dark cloud of suspicion by following recommendations put forth by the Federal Energy Regulatory Commission (FERC) and the CCRO.



Nonetheless, there are still those in the industry who feel that the status quo has served their needs in the past and will continue to do so in the future. Unfortunately, the forces of change are being brought to bear by regulatory oversight, and the industry must act quickly in order to avoid the possibility of further government mandates that may drastically affect how they do business. For example, nearly every draft of the yet-to-be passed U.S. Energy Bill that has been debated in Congress requires FERC to mandate price reporting. What is left unexplained is how FERC would conduct such price gathering.

Independent Data

The most complete solution to meet the complex data requirements can be attained by the capture of independently produced transactional data and forward curves. In the U.S. natural gas and electricity marketplace, the vast majority of the brokered transactions are currently handled by only a handful of brokers. According to recent estimates, market leaders such as Amerex Energy, Prebon and ICAP account for a substantial portion of the transactional volume. If risk officers could combine the transactional data from just those three brokers, they would have a very clear view of the actual value of voice-brokered over-the-counter (OTC) physical and financial assets across North America.

These three leading brokers each act as an independent data source, and they produce a vast array of prices and information covering the North American energy markets. The firms distribute their information mainly through professional data vendors and service providers. The data delivery methods may vary and can include real-time transaction prices, snapshot prices, market indices and forward curves along with deep historical data going back, in some cases, as far as the market trading activity occurred.

Utilizing the data available from these sources can bring much-needed transparency, liquidity and credibility to energy transactions and valuations, and it would be a significant first step down the road to the creation of the Energy Data Hub concept that has been proposed recently. Adding other brokers' information, direct counter-party trade information and the transactional data from electronic exchanges would bring additional value and depth to this data set.

Approaches

Compliance with Sarbanes-Oxley requires focus on both processes and business fundamentals. To be effective, both top-down and bottom-up approaches must be taken

to meet compliance. The top-down edicts seem straightforward and can be based on conventional business practices. The bottom-up methods give rise to significant challenges that require better-crafted solutions than have previously been attempted. This is where comprehensive technology can make a significant impact. The positive aspect is that in striving to meet Sarbanes-Oxley, companies have an opportunity to communicate information more effectively and strengthen controls while improving efficiency levels.

As the plans for meeting the business needs for compliance are met, it is likely that information systems will evolve to support these improved processes. The electronic collection, warehousing and reporting of underlying information will be critical to meeting these needs. To achieve the level of confidence in the underpinning data required for corporate officer verification, the data integrity must be defensible to the utmost degree.

It is crucial that the base data be rock-solid to provide a basis for reporting that will help meet the new compliance standards. A complete framework for control and understanding of the data and its sources is required. This framework must include data sources, data delivery methods, technical modeling approaches, valuation and pricing analyses. One of the primary functions of the base data is to provide a basis for future-oriented contracts that is beyond reproach. It is essential that energy companies are positioned with defensible valuations of their books.

Two key characteristics of the data framework contribute to providing safe harbor to the merchant energy companies:

1. Using an independent and verifiable data source for mark-to-market pricing of long term contracts
2. Contributing transaction data to index publishers for the purpose of creating market transparency

The data framework must be designed and implemented in order to synchronize the business processes with the technology. Automating the data flow into and out of each company's middle- and back-office systems helps reduce the number of errors, eliminates human intervention and ensures that there is less possibility of manipulation. Additional benefits are attained by strengthening the data framework. These benefits can include streamlining processes to gain efficiencies in both operations and technology. This can yield the realization of substantial cost savings in both technology and manpower.

The Solution

A comprehensive data framework system allows people to access and manage real-time information and transaction processes across an entire organization, increasing process efficiency, cutting operating costs and enabling better, faster decisions. It is also a vehicle that should help to eliminate or minimize the need for time-consuming manual entry and data transfer between disparate systems, reducing costly errors and allowing firms to redeploy their resources to revenue-generating tasks. The framework includes both the platforms and the software that handle the key functions of aggregating, storing and distributing the required data.

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Most critical to the framework, the engine needs a layer of software that automates the flow of real-time, historical and proprietary information to disparate systems throughout the organization. This software will facilitate connectivity between front-, middle- and back-office applications to ensure that all users will have instant access to consistent and accurate information.

A successful and complete data framework implementation should have these essential ingredients:

Aggregate Data. The most challenging aspect of establishing reliable basis data is the collection process of the wide-ranging sets of data. By definition, there are countless data sets that are required and a myriad of formats and delivery methods to contend with. Sources can include professional data suppliers with proprietary formats; data files that are delivered via Web sites, e-mail and other means; data flows between electronic systems; manual data entry and an unlimited number of other possibilities. To further increase the challenge, the data sets are not static but are, in fact, extremely dynamic. The addition of new data points to the mix and changes to data specifications occur on a daily basis, sometimes even multiple times per day.

Critical to handling the data as it is collected is the additional task of determining the relevant data fields and the identification of the data series that will be stored. Challenges include lining up similar data from separate sources that use completely different naming conventions while handling the cyclical lives of the

data points due to the future nature of the data sets. There is also the problem of handling changes or corrections to previously submitted values that occur on a regular basis.

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It makes little sense for an energy company to embark on the mission of creating and maintaining the technology of gathering the many data sets that it requires. The company is better off looking to professionals that make a business of managing the extensive data sets to provide the technology. This approach serves to benefit from existing technological developments and economies of scale, lessens execution risk of building systems from scratch and allows the industry to focus on its core business issues.

Unified Source. It is important to present a unified data source to the applications and services that require data. First, the data repository (or warehouse) should represent a logical view as a single source. Even if there are multiple database servers and platforms that store data, the access needs to appear as a single source. Second, the data source needs to handle a large variety of data types and frequencies. The data type can include exchange-traded futures and options, spot prices, indices, foreign exchange rates and even non-price related data such as weather information. The variety of data frequencies ranges from real-time trade-by-trade exchanges with daily summaries to hourly, daily, weekly or even monthly reported values.

A data manager function can serve as a buffer that both accesses the multiple data servers and brings the potentially differing data schemas together into a homogenous data model. Then, the access methodology can be consistent and new data storage platforms can be introduced without impacting the applications and services that are accessing the data.

Data Flow. The key to the data flow is utilizing a common data messaging and transport scheme that allows for the diversity of data types while encapsulating the data in a compact fashion. With this, easily understood interface methods can be used to access the data in a mixture of ways. The flexibility of the interface needs to provide direct ad-hoc data queries as well as dynamic

data subscriptions. This provides a platform for many applications and services to access the data in the specific manner that meets users' individual needs. Regardless of the data access client, the interface should be consistent.

Integration. It is essential that the data framework provide connection and streaming data distribution facilities for large-scale audiences using the local- and wide-area networks and even the Internet. An open, extendable framework can meet the growing demands of the enterprise. This technology must allow for the connection of additional applications and data servers to serve as the data flow hub. These applications can include trade matching engines, risk management systems and additional database servers.

The data flow between client and server should be in two directions to allow for data publishing, broadcast messaging, transaction information and confirmation messages in addition to real-time market information updates. The framework provides an open architecture platform that permits both import and export of price data to and from the unified data store.

One particularly valuable use of the export data flow is the ability to transfer or export certain data sets to external systems. This can be used in the important process of sharing transaction data with trading partners and professional index publishers.

Security. The data framework must also provide the fundamental security services that are needed to meet both internal and externally imposed requirements. The data must be protected against unauthorized access and modifications. When entitlements are built into the framework, control can be gained through a centralized system that allows individual users to be entitled at a highly granular level. Separate read and write permission can be granted to each user for each segregated data set.

This level of security accomplishes accountability aspects for control of internally generated data as well as control of data sets per third-party agreements. Managing the distribution of externally provided data within the enterprise can also result in cost savings that may not have been previously attainable.

Other Features. Additional features can complement a solid data framework. As the function of the framework is mission-critical, fault tolerance should be designed into all aspects. Acting as the central data source for numerous application purposes will heighten the need for system resiliency. As the number of data sets, applications and end users grows, the framework must be scaleable to

accommodate growth. The software functions must be capable of scaling by adding hardware and splitting functions across multiple systems.

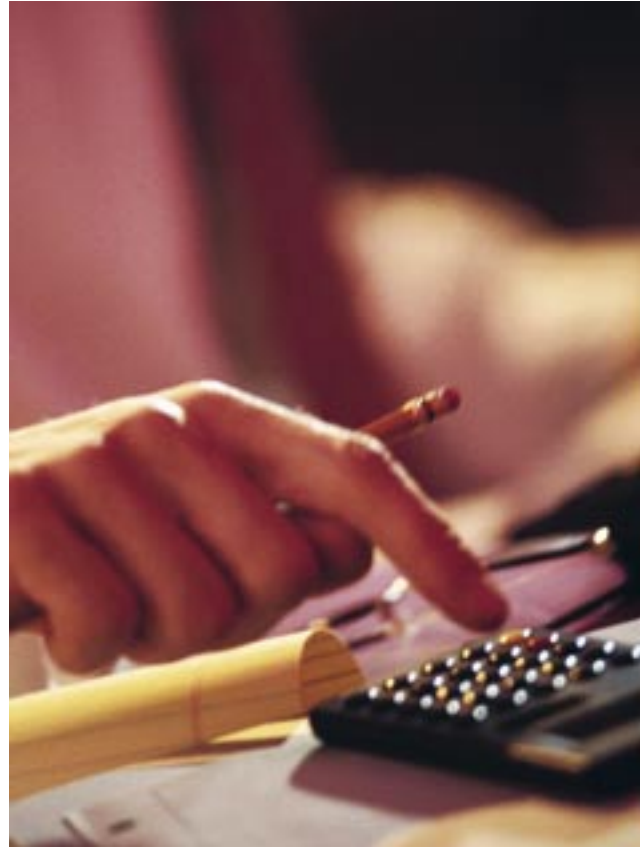
Traditionally, distributing live prices and news required substantial investment in a costly and complex networked trading system and its management. The goal of the modern data framework is to reduce overall costs by simplifying the technology and relieving the amount of manpower required to develop, maintain and administer it.

Meeting the Challenge

Time is running short for the CEOs, CFOs and CROs to institute the changes required for their corporations to be in compliance. For the merchant energy concerns, transaction reporting and valuations are vital to crafting conforming business processes and systems. The implementation of a solid data framework by an independent, industry-governed entity can lay the foundation that will position companies to best achieve three of their paramount goals: Sarbanes-Oxley compliance and the realization of operational and cost efficiencies.

Creating that framework should include both independently published price data that yields a strong position regarding compliance and the technology to aggregate the many data sets required into a unified system that can deliver the data to any and all constituents that require it. What could be more defensible in the eyes of regulators than marking one's books to a forward curve that is a reflection of nearly all of the available transaction data for the deals actually done for those particular assets? Piecework approaches can easily cause many problems with accompanying costs and increase the risk of suspect data and practices. Understanding the core goals of the framework and its numerous requirements highlights the many benefits and elegance of a cohesive and integrated system methodology. ■

Jon B. Olson, vice chairman and CEO of GlobalView Software Inc. is responsible for GlobalView's overall strategic vision, strategic alliances, capital formation and sales and marketing. He has over 13 years of experience in the market data and software industry. He led the purchase of MarketView Software Inc. and the company's transition to its current business and, in the process, renamed the company GlobalView Software Inc. This name change reflected the company's expansion into international markets and its product transition to the Microsoft Windows platform.



Mr. Olson's previous experience includes investment banking, venture capital and securities brokerage at Drexel Burnham Lambert, Bacon Whipple and William Blair & Co. Mr. Olson studied law and business in the joint J.D./M.B.A. doctoral program at Northwestern University in Chicago. He holds a B.A. in political economy from Colorado College, Colorado Springs.

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Mr. Fishhaut attended the master's program at the University of Minnesota Graduate School for Architecture and graduated from Colorado College in 1980 with a B.A. in mathematics and computers.