

# Leading the way

Mark Walker, senior vice-president of Energy Development at SunGard Trading and Risk Systems, explains why Panorama leads the way for energy risk management systems

**Providing a market-leading** risk management system for financial institutions is not necessarily a qualification for doing the same for those involved in the energy markets, due to the sector's specific and often more complex requirements. However, thanks to SunGard Trading and Risk System's expertise and commitment to the energy market, and its risk management system's unrivalled flexibility, Panorama is in fact a system frontrunner in energy too.

Panorama was originally developed in the mid-1990s as a system for interest rate risk management before being expanded to cover other financial asset classes. By the time the system began to be developed for use by energy firms in 1999, it was already in use at more than 100 of the world's leading banks. Today, Panorama for energy benefits from an equal amount of development work as its financial counterpart.

One area where synergy exists between Panorama's financial history and the energy world is credit. In the post-Enron world of today solid credit risk management and analytics is now viewed as a critical success factor. In many cases the methodologies employed by the banking industry are more mature than those in use for energy and this allows energy users of Panorama to make this leap much more easily. In fact, this is now viewed as so important that SunGard is offering a separate credit management system with Panorama as its core component to quickly improve energy credit management.

The purpose of this article is not to list Panorama's extensive capabilities as a risk management system. The fact that it does very well at all the standard risk management functions, such as capturing deals, calculating value-at-risk and so on, is already well-documented elsewhere. Instead, the focus here is on its specific benefits for the energy markets, thanks to the fact that Panorama is designed as a framework as well as an application.

Panorama's framework allows the system's users to incorporate into it any new kind of functionality they wish. This 'extensibility', as we call it, is a key design feature that anticipates that users, as well as SunGard, will wish to add new functionality over time.

Through the use of Microsoft COM interfaces, anyone involved with the system, either clients or SunGard, is able to add new models and deal types easily. Thanks to the inherent flexibility of the system, clients' additions to it are able to remain proprietary if they so wish, while developments made by SunGard can become part of the core product and benefit all system users.

Any such new functionality incorporated into the system is version safe to ensure that when a client or developer uses this extensibility function it will not be rendered obsolete by any subsequent releases of Panorama. Moreover, once the new functionality is added, it appears to be part of the original Panorama product. As a consequence, the system remains seamless and no additional processes or training for users are necessary.

This extensibility is the cornerstone of Panorama's success in the energy markets, where such a capability is vital. In financial markets, which are now very mature, it is unusual for completely new instruments or approaches to be introduced, but in the energy business, particularly in the power arena, that is far from true.

Energy markets are still evolving and there are many new risk management approaches coming to the forefront. Having a system capable of effortlessly incorporating new developments to efficiently manage a firm's risk is critical. Four examples of such new approaches highlighted by SunGard clients as vital for any true energy risk management system, as opposed to an adapted financial risk management system, are summarised below.

The first is known as load following, whereby in its normal course of business a company would go to a utility or other energy marketers and buy a part of their forward demand for a specific user group and time period. While this is a relatively straightforward part of the energy business, managing the risk it creates is far from being so. Unlike a financial instrument where, at the outset, the notional value of a forward contract is known, future energy demand is not fixed, because the contract is entirely dependent on how much energy the relevant customers use during the specified time period. Consequently, a risk management system must have the capability to incorporate the complex mathematical models needed to estimate the relevant

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power usage. Furthermore, those models have to be altered in accordance with many factors such as short-term weather forecasts, where, for example, if it is hotter than normal in the area covered, then the models have to be re-estimated on a daily and sometimes hourly basis.

Second, and part of the same equation, is the requirement to incorporate generation models. In order to satisfy energy demand, power generators themselves require fuel, and the risks of having too much or too little also need to be managed. Here too, because firms need to model the way a generating plant needs to respond to demand that is not actually known until the last moment, large complex mathematical models are necessary, but are based on a different physical requirement and market.

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Third is the weather itself. Weather usually underlies demand, because demand is often a direct function of the weather. Therefore, a risk management system must also be capable of modelling weather derivatives that can be used to hedge weather risk.

The fourth area, then, is emissions, which is currently more of a major issue in the US, but will eventually affect energy firms across the globe. Emissions derivatives have been developed in the US because of rules introduced by the Environmental Protection Agency (EPA), which permit the trading of instruments that allow for balancing and hedging of either sulphur dioxide or nitrogen oxide emissions. It is vital for a risk management system to be able to incorporate models for physical emissions from generation plants and emission derivatives to ensure that a firm is able to understand their position versus the EPA's rules.

Thanks to its extensibility, Panorama can cope with such requirements. Equally important, it is also capable of ensuring that new developments fit in seamlessly with other requirements necessary in a flexible risk management system. This is vital to energy firms that also use more easily quantifiable instruments such as energy futures and over-the-counter swaps to hedge all the various risks they face.

In addition to its pure risk management capabilities, Panorama plays an intrinsic role in enabling a firm to achieve straight-through

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processing (STP), an issue particularly important to energy companies. Essentially, STP affords the ability to integrate all of a firm's systems – and there are more systems to link up for energy companies than for financial firms, because of the scheduling systems required to manage physical energy flows.

To facilitate this, Panorama incorporates what is called a network trade model (NTM). This is a window to the outside world that makes it extremely easy, by using an extended markup language interface, to link Panorama with any other system, from middleware such as Tibco, to a system such as an ISO, or an ECN such as IntercontinentalExchange. NTM also makes it extremely easy to connect Panorama to any sort of input or output system. Extensibility and STP capability by themselves are not sufficient, however; performance, too, is key. Here again, Panorama delivers.

One of the difficulties for energy firms is that, thanks to the typically large size of their portfolios and their inherent complexity as discussed above, the valuation of their books often takes a considerable time to achieve. To ensure proper risk management, energy firms must value their books at least once a day, but with most systems that can take many hours. The result being that risk managers can only begin working on any errors that are generated late in the evening.

Unlike these other systems, Panorama is highly scalable, so computer power can simply be added when necessary. As a result, a firm's

book, no matter how big, can be closed in no more than half an hour. That timescale will be further reduced in the near future, thanks to some technological changes that are currently being developed. In less than a year, Panorama users will be able to value their books in 10 minutes or less. Such speed not only enables risk managers to do their jobs in a more acceptable time frame, it also enables the intra-day, real-time tracking of credit limits, which has become so important to energy firms in the post-Enron environment.

To date, there is no other risk management system available that can so easily incorporate the diverse and ever-changing requirements of the energy business. Nor is there another that does not need a system overhaul or even a re-build in the face of new and, as yet, unforeseen challenges. Not only is Panorama a frontrunner, it is so by some considerable distance. **SF**

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**About SunGard Trading and Risk Systems**

SunGard Trading and Risk Systems provides integrated, enterprise-wide solutions for financial trading, risk management and operations, as well as asset liability management and financial planning and forecasting. Serving more than 500 clients, it offers Web-enabled solutions for achieving straight-through processing, and for managing market, credit and operational risk. Clients include energy companies, banks, broker/dealers, asset managers, hedge funds, corporate and government treasuries of every size, geographical reach and operational complexity. For energy companies, SunGard Trading and Risk Systems provides trading, risk management and commodity scheduling software solutions.

**About SunGard**

SunGard (NYSE: SDS) is a global leader in integrated IT solutions and eProcessing for financial services. SunGard is also the pioneer and a leading provider of high-availability infrastructure for business continuity. With annual revenues in excess of \$1 billion, SunGard serves more than 20,000 clients in over 50 countries, including 47 of the world's 50 largest financial services institutions. Visit SunGard at [www.sungard.com](http://www.sungard.com).

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