

THE INTEGRATION GAME: *The path to a single platform*

Physical energy traders often struggle to understand the profitability of transactions because they lack integrated trading tools. Clarity of understanding is also undermined by the inefficiency of existing business processes. *Akhil Sehgal* charts a path to a clearer picture of profitability.

Introduction

Trading physical energy is a challenging undertaking involving complex business processes, large volumes of data and a requirement for both front and back office staff to analyze and understand that data. Yet companies often employ non-integrated trading tools which hamper communication and create operational risk issues. Companies often build one set of analytical tools for front office personnel and a separate set of scheduling systems for operations staff. This approach makes it difficult for front and back office staff to exchange information. Adding to this problem, many forms of important data are held exclusively in spreadsheets and emails, making it difficult for firms to have a consolidated, timely and relevant set of data needed for trading decisions. In the previous article we discussed the need for an accurate PNL Explain. In this article we explore further why back office inaccuracies occur and how a system can be built to reduce these errors.

What just happened?

One of the most significant consequences of the lack of integration between energy trading tools is that companies are unable to understand the true profitability of a trade until well after the transaction has occurred. Sometimes firms can only establish accurate profit and loss numbers 30 to 45 days after a deal has been made, when the firm is invoiced and accountants are able to start breaking down costs. As a result of limited integration between front and back office systems, traders may not have the centralized, real-time data necessary to understand the financial impact of aspects of a trade, such as congestion fees in power trading, or pipeline charges in gas and oil trading. Traders frequently discover that what were supposed to be profitable deals turn out to be loss-making ones. People making calculations in spreadsheets can easily input figures incorrectly and as a result, front and

back office calculations can fail to reconcile. Poor or non-existent integration between front and back office systems can also mean that firms struggle with the modeling of complex physical contracts or assets, making companies potentially vulnerable to incurring unforeseen industry penalties. For example, if a gas storage contract is modeled correctly, a company is able to capture any constraint that affects the deal, such as an agreement that only a certain volume of gas may be drawn over the time of the contract. If the agreement is modeled incorrectly and is not captured as a single deal but as multiple separate transactions, it is possible that the company will fail to pick up on the restriction. Traders may then go on to draw more than the agreed volume, as they are ignorant of the constraints embedded in the contract and hence the business may incur financial penalties.

This lack of integration between systems may also make it difficult for organizations to expand their trading operations. Indeed, some companies have been prevented from scaling up their volume by risk committees fearful that poor communication between systems may lead to bad decisions and exposure to unnecessary risk.

Pedigree matters

Investment banks, which typically enter energy markets with financial trading and later diversify into physical trading, often suffer from their financial-only legacy. This is a result of the temptation for firms to try and support physical trading activities using the same business processes and systems put in place for financial trading.

But investment banks moving into physical energy trading are not the only firms affected by weaknesses relating to systems and processes. Traditional physical players suffer, too. Even firms that are owner-operators, with a deep understanding of the market, plus all the data necessary to perform accurate calculations, may

face difficulties. Although those firms possess valuable trading data, information is often held in departmental silos, preventing firms from gaining critical insights into individual trade profitability, charges, service contract performance, transportation and storage costs.

Tackling all the weaknesses caused by non-integrated trading tools cannot simply be achieved through the installation of a single off the shelf software package. Creating a front to back platform generally involves both the use of third party vendor systems and bespoke development work, although the exact nature of that mix will depend on a firm's individual requirements. Careful research is needed for firms looking to develop an appropriate solution.

Creating an integrated platform

Developing a fully integrated front to back office platform is no simple task, and is best achieved by taking a phased approach. In the initial phase of the project, the firm must collect all the necessary data and combine it into a single model. Typically gas trading companies will require service contract information, which include storage costs such as inventory, injection, withdrawal, demand and fuel loss. Contracts also include information on transport, park and loan, market data for each trading hub and location, and pipeline rates. For power companies, pricing, market data and congestion rates

for all trading hubs will be necessary, whereas oil companies require freight rates and duty charges.

Companies must then improve the modeling of service contracts. This requires a detailed understanding of the constraints, dependencies and costs associated with each contract, such as commodity charges, fuel loss, freight charges and other fees. Firms will need to build a position management framework to monitor service contracts. Physical contracts are complex and specific so most generic off the shelf solutions are unable to capture all their details. A framework will enable service contract managers to analyze all the activity performed against a particular contract. This stage of development is critical. Once a firm understands the costs associated with fulfilling its contracts it will have a much clearer idea of the profitability of each deal.

The next stage of the integration project involves bringing together all trading data into a single view. Energy trading firms' systems are usually set up so traders and schedulers have separate views of positions. Information that can be viewed by schedulers, such as a report relating to a problem with a pipeline, may not be accessible to traders. In addition, data is generally exchanged between departments via spreadsheets. Firms should aim to provide traders, schedulers and settlement staff with a single point to access all position information. This

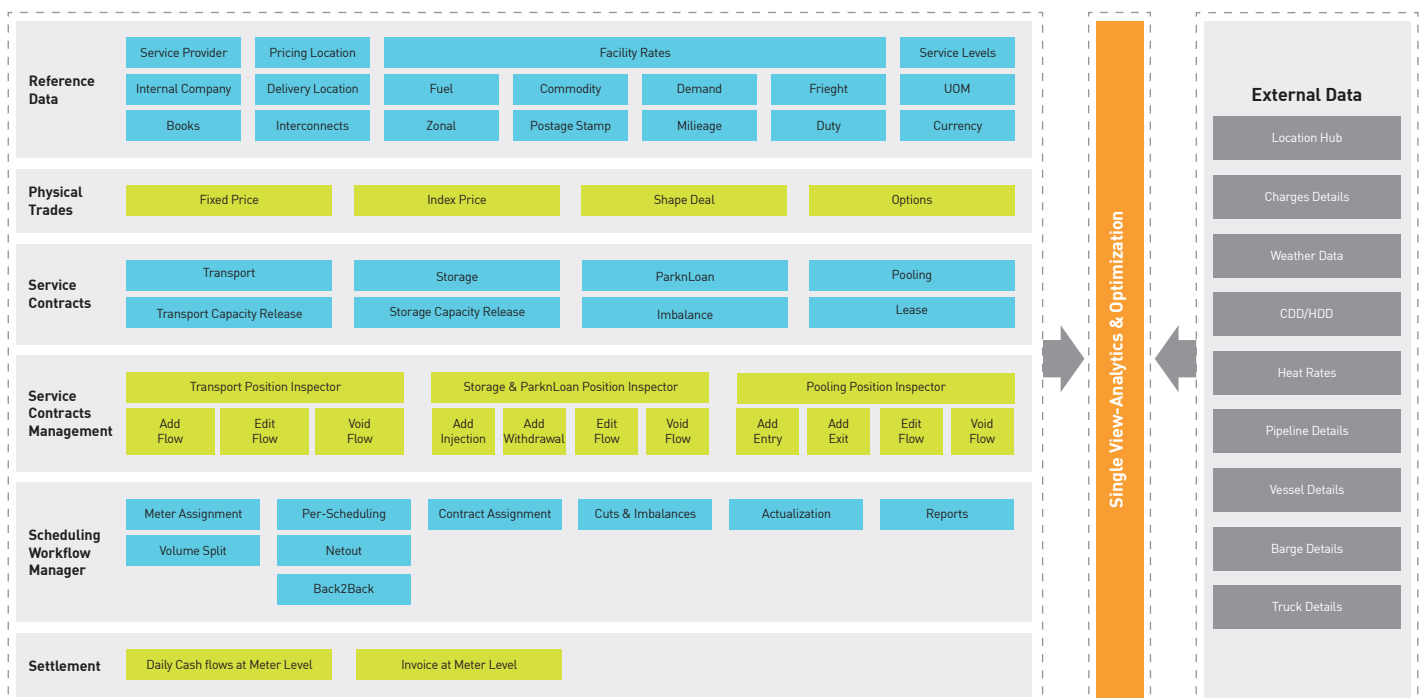


Figure 1: Some of the core data components needed for a commodities system

should include physical and financial contracts, service contracts, assets, and tools for analyzing profit and loss across forecast, scheduled and actual positions. Once a uniform view has been achieved, any changes affecting positions need to be reflected in real time on the system so the impact of trading can be seen immediately by all front, middle and back office staff. This allows the organization to act quickly and to take corrective action if errors have been made.

Once these stages have been carried out, firms can develop the ability to track the movements on each contract and to calculate costs in real time. Companies can devise a complete value chain, linking supply and demand with movement and creating the ability to track a position throughout the lifecycle of each individual trade and across service contracts. The resultant new business information will allow organizations to review and optimize service contracts. Companies will be able to forecast the impact of charges and penalties on deal profitability and will have at their disposal the tools to fulfill service contracts at the best possible rates. The detailed historical data accessible via the integrated platform will also enable companies to improve their trading strategies, either by identifying more cost effective ways to purchase, store energy and manage transportation, or by reducing charges and penalties.

In the final stage of the project firms are in a position to fine tune their trading arrangements.

Adapting methodology for your firm

No two companies are alike. Each company is at a different level of sophistication and follows a unique business plan. Hence a company must understand exactly where it should implement changes to best meet business demand. Companies that do not plan their integration thoroughly enough and do not challenge their project plans at regular intervals are likely to fail. In order to identify which project steps are pertinent to it, a company should analyze its business strategy and identify critical success factors, mapping these to the phases outlined above. Once this process is followed, the company is able to focus on the stages most relevant to its requirements, allowing it to derive maximum possible benefit from the project.

The following example based on a trading project at a global investment bank, illustrates the point admirably. The bank managed gas flow and payments across several dozen North American facilities and was keen to overhaul

its systems. There was a heavy reliance on spreadsheets, important scheduling data was exchanged between traders and schedulers over the phone, and positions were only captured at month end. When it realized that its traders had to rely on out of date information, the company decided to devise a customized solution, based on the methodology set out above.

This solution was intended to provide traders, schedulers and back office staff with a single-screen view of the real time data needed to balance physical positions and to track activity on contracts. The firm followed the first four project phases (collecting data, improving the modeling of contracts, combining information into a single view, and developing the ability to assess movements and costs in real time), while opting not to carry out the final two stages (reviewing and optimizing service contracts, and comparing existing trading arrangements with alternative options). The bank chose to focus on deriving maximum possible benefit from its improved capabilities in better access to data rather than implement the final phase.

Integration advantages

Assuming it is well designed and carefully implemented, an integrated platform can provide traders with all the relevant data necessary to examine individual deals, within the context of the company's overall trading strategy, by showing real profit and loss for each trade, on day one of trade execution. The introduction of new business rules, better analytics and more detailed historical data will also enable front office staff to determine the best strategy for each trade and to pinpoint which service contracts are underutilized.

Traders can analyze the whole value chain of the portfolio, allowing them to understand which contracts are performing well and which are underperforming. An integrated platform also makes it easier to pinpoint excess or under-capacity, enabling staff to release and purchase contract capacity, as necessary. Firms can also exploit arbitrage opportunities between different trading hubs.

Operational risk is reduced by the introduction of an integrated platform. Systems can be pre-programmed to evaluate the operational risks of each trade, allowing comparisons to be made between trading opportunities, as well as highlighting the most profitable deals and ensuring firms avoid excessively risky transactions. As a

fully automated solution, the integrated platform allows companies to scale up trading, without fear of increased operational risk, enabling firms to expand business activities.

Finally, an integrated platform can create significant time and cost-savings and improve cash flow. For example, when schedulers and traders use the same information schedulers can spend less time conferring with traders on next-day flow. Better access to data means that back office staff can calculate positions for every day of each deal and reduce the month-end effort in the invoicing process, rather than waiting 30 days to track, nominate and report on energy flow before generating invoices.

Winning market share

As the physical energy trading business grows more complex, the weaknesses of some platforms are becoming increasingly apparent. Firms willing to commit time and money to integrating energy trading tools will gain a competitive advantage in future years. With the aid of superior access to information and streamlined business processes these firms will ultimately outflank their commercial rivals.



Akhil Sehgal

is a Sr. Manager based in New York. He worked as a Senior Consultant at Telesens KSCL before joining Sapien. Akhil has advised leading commodity companies on reducing their cost base while simultaneously reducing their operational risk through technology solutions.

aksehgal@sapien.com