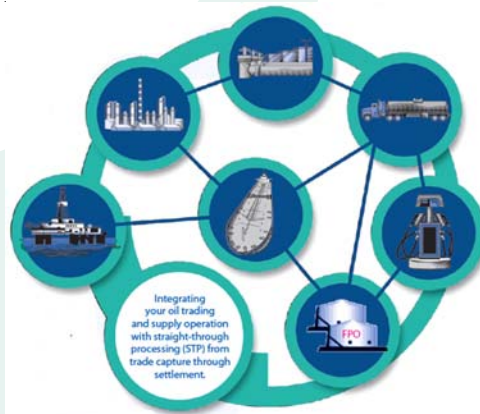


The Cloud & The Importance Of
Physical Operations In Oil Trading.
Why Today's Trading Companies Need Operational
As Well As Transactional Solutions.



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The Cloud & The Importance Of Physical Operations In Oil Trading.

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Today's Trading Companies Need Operational As Well As Transactional Solutions.



“Cloud-based applications — aka Software as a Service (SaaS) — have seen steady growth over the past few years and will continue to grow.”

Gartner Research

Aspect is the leading global provider of Cloud commodity trading, risk management and data management applications for front, middle and back-office professionals. It's the only integrated, all-in-one platform delivered in the Cloud which enables rapid deployment, controlled costs and immediate ROI. Our trusted solutions support over USD \$10Bn in transactions daily. AspectCTRM is Aspect's flagship commodity trading and risk management application relied on by trading, wholesalers and supply companies globally.

Overview

Trading oil used to mostly take place in the virtual world. Oil futures were bought and sold on paper only, with relatively few physical movements of oil taking place. Meanwhile, millions of barrels of oil remained in storage, being traded on multiple times as its value increased.

But in today's financial climate, the market has changed. There is more money to be made by selling oil almost immediately after it has been bought. Contracts that once would have been renegotiated or unwound before deliveries fell due are instead being allowed to run to completion. Cargos of oil are spending less time in long-term storage and more time on the move.

For today's physical trading companies, and those companies more accustomed to dealing with on-paper trades only, it presents key challenges. This white paper examines those challenges and details how they can be met, with the emphasis on arguably the most important element in the mix - storage.

The Physical Operations Challenge

Market forces now mean it is more profitable to trade oil in the physical world than in the virtual, paper world. As a consequence, more and more companies - among them storage operators, hedge funds and big banks - are moving into the business of storage and transportation alongside established trading desk and back-office operations.

But they are very quickly learning that the area of storage and transportation, commonly known as logistics, is fraught with problems: not least market price volatility, managing risk in physical markets, the availability of storage, getting real-time inventory and storage data, and the particular operational difficulties associated with markets that can change unexpectedly and very quickly - a case in point being the biofuels market.

To mitigate these issues, companies trading oil, and those moving into the business of trading physical oil need to address five headline challenges:

Reducing Costs

Storage and transportation costs are of little concern to on-paper trading companies. They are generally someone else's problem. But move the business into the physical world and suddenly they take on a new significance.

That said, when oil was being traded at \$140 a barrel, average storage and transportation costs of \$6 a barrel were a small percentage of total value and tended to be accepted. But with oil trading at \$90 a barrel or less \$6, becomes a significant factor in the profitability of trades.

Minimizing Risk

For paper trading companies, risk is an everyday factor. But by employing the right trade risk management systems they successfully keep it under control and minimize its impact on the business. Move to the world of trading physical oil and risk takes on an entirely new dimension.

Take delivery schedules. Miss a contracted delivery date for a consignment of oil and the cost repercussions can be enormous. First of all, the customer may impose contract penalty clauses with payments due in the event of delivery slippage. Then there may be demurrage charges for ships docked in port beyond their specified time. And there could be additional storage charges levied at either end of the supply chain when schedules are disrupted.

There are more direct financial implications, too. A failure to deliver on time inevitably means a delay in the trading company receiving its profit on the trade, which can in turn limit future trades.

A failure to fully appreciate different prices for products, storage or transportation in different parts of the world can also have a bearing. Such information must be readily available to anyone who needs it

All this can impact deeply the profitability of traders and serve to increase considerably risk and exposure.

Managing Complexity

Oil trading is already a highly complex practice working across multiple markets, instruments, assets, currencies and time zones. Add in the additional complexities involved in trading physical oil, for example different modes of transport, supply/demand imbalances and even weather conditions at point of delivery, and the overall scale of the challenge can be overwhelming.

For trading companies more accustomed to doing business in the virtual world of paper, it can be a process management nightmare involving multiple new disciplines, procedures, rules and regulations.

With all this, too, comes new legal and administrative responsibilities ranging from certifications, tank cleaning schedules and product losses, to dealing with port authorities, shipping agents, third-party storage providers and safety inspectors. On top of all this is the essential documentation and record keeping associated with these activities.

Integrating Processes

Companies that attempt to run and manage the physical operations side of their business separately from the front-office and back-office run the risk of a serious disconnect in business process.

The aim should be for straight-through processing (STP) where every step of the trade life cycle takes place in one common system accessed by all staff and handling everything from deal capture to final settlement, including the all-important physical operations and logistics functions. Even integrating systems into a main platform is acceptable, so long as all departments are using one source of data that flows through it, and multiple data entry points do not exist.

Only in this way can users and managers see a proper real-time overview of the business, keeping track of positions, optimizing efficiencies and avoiding any unforeseen problems or financial penalties.

Eliminating Errors

As already discussed, some companies are opting to use spreadsheets to manage the complex processes around their storage and transportation operations. Yet spreadsheets can be notoriously unreliable and error prone when they are trusted to handle such challenging business functions. The anecdotal evidence is legion.

Among the business failings attributed to spreadsheets is Fanny Mae's upping of unrealized gains, in 2003, by a massive \$1.2Bn following what was said to be "honest mistakes made in a spreadsheet used in the implementation of a new accounting standard."

An oil and gas company in Dallas, Texas lost millions of dollars in an acquisition deal, and several executives were fired. The root of the problem: a spreadsheet model contained an error. The executives had based their actions on inaccurate spreadsheet data.

The documentary evidence is even more compelling. In no less than seven separate studies conducted over a 13-year period, errors were revealed, more than 90% of the spreadsheets examined.

For companies seeking new lines of credit, or wishing to meet their corporate governance obligations, it is not hard to see why spreadsheets are no longer an acceptable alternative.

Why Traditional Software Solutions Are Not Enough

The area of ETRM/CTRM and allied solutions has long been one characterized by the traditional big-budget software delivery model. That is to say hardware acquisition, resource allocation, software licensing, on-site implementation and service callout support and maintenance. Any post-installation configuration changes, upgrades, additions of new seats or integration work would then be carried out on-site by the chosen supplier at extra cost.

Historically such traditional solutions, whether off-the-shelf or bespoke - have been the only way to meet the scale and complexity of the task required of them. Generally modular in nature, they have tended to grow iteratively and have normally required a lot of customization and configuration to suit a user organization's particular business processes.

Solutions built like this are costly to buy and own, limiting their use to only the larger trading firms. As well as software charges they require capital investment in hardware, network and staff resources and can take typically nine months or longer from contract before they go live, during which time markets and user requirements can change.

Even then such solutions have typically only met 80% or less of the original requirement. Other solutions, often error-prone spreadsheets, have been drafted in to fill the functionality gaps.

An Alternative Software Model -- That's Proven

As smaller trading houses began to appear, and more recently as the overarching financial climate has impacted IT budgets, a credible alternative to traditional software has emerged and over the last few years has gained traction with both small and large organizations.



AspectCTRM is the only multi commodity trading and risk solution in the Cloud. It's used by traders and suppliers across industries, including oil, refined products, metals, steel, coal and emissions markets. It's a powerful solution suite providing real-time profit and loss visibility, financial settlements, market exposure and real time management reports available on demand.

Research by Gartner supports this – as new entrants into energy markets will typically be smaller in size and more receptive to the idea of SaaS and outsourcing over traditional deployments.

- A Gartner survey reveals that energy and utility CIOs estimate that 50% of their transaction management will move to a Cloud computing infrastructure and SaaS-based applications in the next five years. In the context of ETRM, IT departments must tackle the complex nature of legacy deployments first.
- Sharp increase in the volume of transactions managed in Cloud computing environments and under Software-as-a-Service (SaaS)-based applications between 2011 and 2015.
- For larger energy companies and utilities, the penetration of SaaS ETRM deployments, Cloud computing-based or otherwise, will grow incrementally as common processes are increasingly standardized (for example, settlements).

SaaS applications delivered entirely in the Cloud are usable from anywhere there is Internet service, and staff need only a Web browser for full access. Meanwhile, it is the application provider that owns and runs the servers, supports the application, and securely hosts the data: no capital investment is required by the user organization. Any subsequent updates or configuration changes only need to be made once by the provider to become immediately available to every user, regardless of location or computing platform/device.

Such applications have proved invaluable to trading houses where there is a need for a fully-fledged system to meet investor or governance requirements. The cost of entry and ownership is lower than for traditional software, with typically a per-month subscription fee only required per user.

Since there is no traditional installation or configuration, deployment times are measured in hours or a few days at most. And as user organization seat count demands change, so the system can readily scale up or down with ease.

Cloud Computing Is Environmentally Friendly

- According to surveys, most computer systems have CPU utilization of approx. 10%. This means that computers are doing nothing while consuming electricity 90% of the time.
- Cloud Computing allows sharing of the same hardware resources between multiple customers and reach 80% - 90% utilization.
- 10 computers in a Cloud typically do the same job as 90 computers in client-server environments
- Users of Cloud Computing have a much lower carbon footprint than their colleagues stuck with older client-server software.

SaaS In The Cloud: How It's Solving The Physical Operations Challenge

A new generation of SaaS ETRM/CTRM solutions delivered in the Cloud is now available to manage physical operations for companies trading oil.

Based on straight-through-processing architecture, such solutions are capable of running the entire trading operation from initial deal capture right through to delivery to the end customer.

They bring together in one place all real-time and historic information about trading and physical operations, supported by functionality that includes supply/demand allocation and inventory management linked directly with trade capture, risk management and financial operations.

For bunkering suppliers, terminal operators and trading companies, such solutions allow logistics, storage and charter managers to view a full range of shipment and storage options and quickly make informed choices about the optimum solution.

Such systems are helping trading firms come to terms with the challenges they face in the world of physical oil:

Cost Reduction

An integrated, consistent and systematic approach right across the trading life cycle means there are no third-party software tools or error-prone spreadsheets involved. Staff maintain full visibility and control every step of the way leaving no opportunities for hidden costs or missed opportunities for savings.

Risk Management

By tightly integrating the processes involved in trading physical oil with those of the trading desk and back-office finance, there is much less chance of mistakes. Trades flow through the system smoothly, schedules can be met more easily, compliance and governance requirements, met more easily.

Coping With Complexity

By bringing together all of the complex processes associated with physical oil into a series of logical GUI screens organized by activity and function, backed up with real-time information on storages and movements, skilled people have everything they need at their fingertips.

Process Integration

True straight-through processing integrates the entire trading, physical operations and fulfillment cycle into one system working with the same real-time information.

Error Control

Errors creep into complex processes when either data is wrong or its manipulation produces the wrong results. A single integrated system and pool of data involving no external processing or software tools, ensures errors are kept to an absolute minimum.

AspectCTRM Physical Operations: Built For Trading In The Physical World

Aspect since 2000, has provided the world's leading commodity trading firms with multi-commodity trading, risk management and data management SaaS applications delivered in the Cloud. They are deployed for many thousands of users at more than 500 organizations in 90 different countries.

Aspect's portfolio includes AspectCTRM Physical Operations, a dedicated physical operations module for oil and physical energy-based companies using the AspectCTRM trading/risk management platform.

It manages in one integrated system the key processes of commodity allocations, inventory management, transportation planning and scheduling, demurrage and operational reporting.

Combined with the core AspectCTRM platform, it delivers fully straight-through processing right from trade capture, the physical operations management to invoicing and settlement. It does so through on-screen workbenches that support the daily activities of schedulers and operators:

FREE Trial

For a free trial, with no risk or obligation, visit the link below. No other vendor offers free trials for ETRM/CTRM solutions.

There's no need for you to spend six figures to find out that the system you purchased may not be right for your trading business.

[Request your FREE Trial on our website](#)

- *Inventory Workbench* which includes planning and actualization of movements into, out of, and between storage locations, stock and ullage projections, stock reconciliations, stock valuation tracking, cost allocations
- *Book-out Workbench* which includes matching of supply to demand for book-outs/net-outs generation. This workbench is especially useful for pipeline operations.
- *Shipments Workbench* which includes identification of mode of transport, transport and inspection nominations, pipeline nominations, events capture and management, issues and resolutions recording, demurrage calculation.
- *Blending Workbench* which includes planning of product blending, calculation of theoretical quality parameters of a blend based on components quality, execution of blending plans by generating appropriate product movements between storages.
- *Operations Workbench* which produces daily (or time fenced) operations lists for transport and storage operational staff.
- *Railcar Editing Tool* which includes capturing railcar logistics information.

Storage Operations

Aimed at AspectCTRM users involved in buying and selling product to and from physical storage, this adds integrated supply/demand allocation and inventory management functionality to AspectCTRM's trade capture, risk management and financial operations.

Defining Physical Storage

The definition of all available storage capacity, its constraints and its costs, including:

- Physical storage details including the actual and usable capacity of the storage, together with details of the product to be stored.
- Current storage contracts in order that the solution can calculate storage costs and allocate those costs to parcels in storage.
- Storage contract extensions in order that extensions to the above contracts can be activated without having to renegotiate contracts.
- Storage rents and extension rents to define the way rental charges are calculated for contract or extension periods.
- Storage usage conditions and excess usage charges in order to define the throughput and volumes that can be held in storage, together with charges for any excess in throughputs or stored volumes.

Planning Receipts and Dispatches

As soon as physical trades are made schedulers need to plan storage receipts and dispatches in order that they can:

- See when the parcels are planned to be received or dispatched
- Ensure receipts or dispatches are feasible so that:
Planned receipts will not overflow storage capacity. Planned dispatches will not make the stock on hand 'go negative'
- Schedule receipts and dispatches, including inter-tank movements.
- If necessary, make adjustments to the plan.

Contact Us

For more information about AspectCTRM and how we can help you model your business and apply professional business planning and risk tools, email moreinfo@aspectenterprise.com

Stock And Capacity Projection

Stock and capacity projection is a key aid to planning receipts and dispatches. In order to meet all planned receipts and dispatches schedulers need to know that enough product and storage capacity is available. They can achieve this by viewing stock and capacity projections:

- For individual tanks.
- For pooled storage.
- By product at each tank or pooled level.

Actualizing Supply and Demand

As soon as planned physical load or discharge occurs, storage staff may record actual quantity of physical operation.

Reconcile and Adjust Stock Levels

It is possible to record inventory level reconciliation result against storage. If actual quantity is different from expected, outturn adjustment is calculated automatically.

Inventory Valuations

Inventory is valued based on transactions using one of the following valuation methods:

- First-in-first-out (FIFO).
- Weighted average.

Storage Reports

A number of additional reports are included:

- Actualization losses for storage and shipment
- Storage or shipment load and discharge transactions.
- List of storage reconciliations.
- Storage throughput by storage.
- Storage reference data, including:
 - Shell capacity.
 - Actual (operational) capacity.
 - Spare capacity.
 - Rent agreement data.

Conclusion

Trading physical oil is a complex process. While discrete software tools can help, they can be prone to errors and introduce disconnects into trading workflow. An integrated system, offering straight-through processing across the entire trade life-cycle, is the lowest risk, most effective solution. But traditional packaged or bespoke software can be prohibitively expensive, take months to implement and even then may not meet all of the business needs.

About Aspect

Aspect is the leading global provider of Web-based commodity trading, risk management and data management applications. We offer the only integrated, all-in-one platform delivered through Cloud Computing, which enables rapid deployment, controlled costs and immediate ROI. All Aspect solutions are accessible via the same online password providing seamless, user-friendly collaboration for global teams. Aspect clients produce, refine, market, ship and trade globally and rely on our expertise in these key physical and financial markets: Oil, Metals, Steel, Coal, Marine Fuels, Biofuels, Freight, Natural Gas, Emissions and Agriculture/Softs.

Other products on the same platform as AspectCTRM include, AspectDSC our decision support center for traders, end users and market watchers offering oil, metals and agricultural market news, prices, futures and analytical tools on desktops and mobile devices including iPhone®, iPad® and BlackBerry®. Aspect PM is our Price Manager solution which provides consolidation and support for the global oil price forecasting process and forward curve management.