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## OPTIMIZING TRANSACTIONAL DECISIONS — AN INTEGRATED & PROFESSIONAL APPROACH TO FUEL MANAGEMENT

If you were aboard NASA's space shuttle looking down on planet Earth, you would see a lot of ships moving from China to India, from Europe to the United States, along with a huge amount of domestic truck and rail activity, together with extremely active air and cargo movement to support the burgeoning volume of international trade. A complicated matrix that reflects the easing of international trade barriers, an increase in global trade, and significant advancements in the ability to manage large volumes of data have led to a revolution of sorts in information management technologies that support critical fuel procurement decisions in the global transportation industry.

The formidable challenges and opportunities facing the likes of jet, marine and diesel fuel procurement departments exist throughout the supply chain. Volatile crude prices, supply/demand balancing, port and storage infrastructure and distribution, scheduling and logistics considerations and environmental mandates are just some of the business issues that fuel supply departments are fretting over these days.

Since the U.S. airline industry was deregulated in 1978, airline profitability and survival have depended on controlling costs. After labor, jet fuel is the second largest operating expense for all U.S. airlines, constituting 10 to 25 percent of an airline's annual operating costs. According to the Air Transport Association (ATA), at a consumption rate of 19.5 billion gallons per year, every penny increase in the price of a gallon of jet fuel results in an additional \$195 million in annual fuel costs for the U.S. airline industry. In 2005 alone, the spot price of a gallon of jet fuel increased from \$1.33 in January to \$1.72 in December. Economists at the International Air Transport Association (IATA) expect fuel bills to account for 26% of operating expenses in 2006 and 2007, double the 13% share in 2001. Industry fuel bills are expected to total \$115 billion this year, up from \$46 billion in 2000.

Technology is one of the main pillars that support the burgeoning supply chain in the transportation industry. Through automation, fuel procurement departments can operate more efficiently and profitably by tackling common fuel supply/demand issues. The fuel procurement supply chain is essentially a network consisting of suppliers, distributors and customers. The network supports three types of flows that require close coordination: 1) material flows, which represent physical product flows from suppliers to customers; 2) information flows, which represent

order transmission and order tracking, and which coordinate the physical flows; and 3) financial flows, which represent credit terms and payment schedules. These flows are sometimes referred to as the '3Bs' of supply chain management— boxes, bytes and bucks.

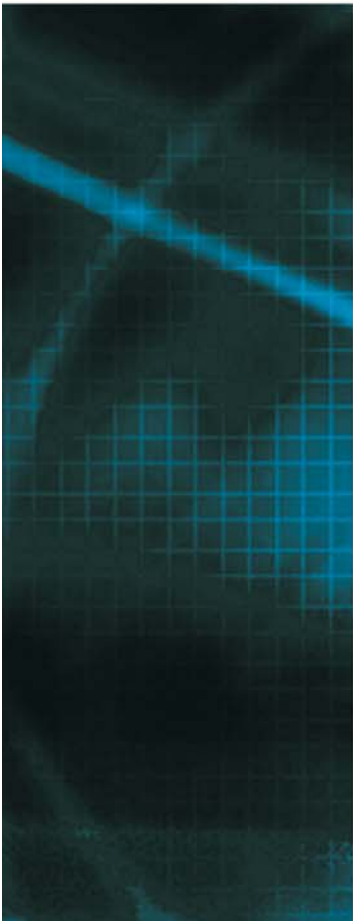
The coordination of these three flows within the supply chain is supported by three pillars: processes, structures, and enabling technologies, encompassing both process and information technologies. When applied correctly, technology has helped businesses conquer arguably the central problem in supply chain management — efficient coordination of supply and demand.

### FUEL INVENTORY MANAGEMENT

One of the best ways in which airlines and other transportation providers can optimize inventory positions and reduce working capital requirements and costs is through real-time transparency of inventory positions across the entire network. Volatility and the high price of fuel prescribe that keeping the lowest inventory levels possible is a prudent course of action. In order to optimize fuel levels, airlines have turned to information technologies with sophisticated forecasting and auto replenishment capabilities. These tools take into account usage, inventory and deliveries to determine optimal reorder points by striving to achieve a target level of inventory. This "target level" minimizes inventory while avoiding "run outs" or fuel outages.

At first glimpse it appears that solving the inventory problem is merely a product of minimizing inventory levels; however, when volatility is added to the equation it becomes clear that keeping inventory levels as close to just in time (JIT) as possible is not sufficient - one must also know when to buy, so as to take advantage of momentary drops in price. The timing of each purchase requires a new set of data to make the most informed decision and consequently a new set of technology tools to aid the fuel procurement team. Factoring in historical trends, tracking contracted supply and evaluating spot purchase options in one location is essential to determining when to buy and from where and whom to buy.

Since it is difficult to know exactly when to buy, it is important to have as much information available, in a simple, accessible format, in order to make the most informed decision. Airlines pipe in most of their fuels, and therefore cannot always leverage



the full complement of options that are available to other participants in the supply chain, who can source from a wider array of options. This places greater emphasis on the ability to contract at the best rates possible. The more creative and complex the contracts and pricing scenarios are, the greater the requirement for more robust technology to support the productivity of the procurement and accounting departments.

#### AUTOMATING TRANSACTION PROCESSING, ACCOUNTING AND TAX FILING COSTS

New technologies involving collaboration from all supply chain partners allow transportation companies to automate fuel transaction accounting and ensure accuracy of billing and taxation. To enable this process, information technology must take invoices from suppliers, readings from meters, and data input from fuel transporters. Coupling those inputs with configuration to auto match and auto approve payment and processing for invoices that are within certain tolerances, are the makings for tangible savings.

Now more than ever, transportation providers need to maximize productivity from their staff. Automatic approval of and scheduling of payments on the large number of fuel invoices that are correct frees up valuable time of accounting personnel, enabling them to focus on the exceptions, incorrect invoices and to analyze strategic opportunities. This additional time is essential if airlines are to leverage this latest round of global expansion and scale their enterprises. As airlines add more flight destinations, they need to add new fuel suppliers and handle increased fuel transaction volumes at these locations without increasing overhead.

Once fuel transaction processing is automated and optimized, there still remains the challenge of optimizing tax determination and tax filing. This can be both an administrative burden and a source of corporate liability that must be closely managed. Fuel taxes are especially complex to calculate. Unlike applying a simple percentage to a transaction, such as the simple computation of sales tax with which most of us are familiar, fuel excise and use taxes are driven by a complex matrix of licenses, jurisdictions, products and transaction types. Automating tax determination for each transaction conducted ensures accuracy of tax payment computations as well as proper accrual of tax liabilities, and improves controls, while reducing the labor costs and the uncertainty associated with maintaining numerous tax tables in an accounting system that was not designed to handle the challenges associated with global tax determination for fuels.

Once fuel taxes are properly determined and accrued, there still remains the responsibility for filing or paying the taxes

to each jurisdiction in which one operates. Adding new routes and destinations brings with them new jurisdictions. Airlines are faced with increasingly complicated electronic filing requirements, and varied filing forms and deadlines, all of which must be managed efficiently in order to avoid increasing administrative costs.

A new twist in the ever growing web of tax regimes that must be dealt with is the tracking and filing of terminal operator reports. Filing the Excise Summary Terminal Activity Reporting System (ExStars) with the Federal government requires detailed and accurate tracking and reporting of all terminal receipts and disbursements at a transactional level, which can mean thousands of transactions a month. Here again, automating this tracking and filing process is the key to reducing administrative costs. ExSTARS is part of a larger IRS system designed to track movement of fuel to and from terminals, so leveraging lessons learned and automation previously employed in the oil industry can yield quick wins. Since oil companies have had to address these issues for very large networks of terminals located in nearly every jurisdiction, building upon their automation practices and using software systems already deployed to handle hundreds of terminals can allow airlines and transportation companies to lower administrative costs in these areas.

#### OPTIMIZING TRANSACTIONAL DECISIONS

The inherent price volatility of fuels and the supply manager's ability to better control and manage fuel costs in this very volatile marketplace can lead to improved efficiencies in the fuel management process. Virtually nonexistent a decade ago, fuel transaction management systems affect numerous processes, ranging from purchasing, scheduling orders and controlling inventory to invoicing and tax management. Fuel transaction management system vendors have worked to create technological and software solutions that are designed to help not only to automate many of the antiquated back-office procedures that are inefficient and costly but also to improve a fuel procurement department's financial returns.

For more information about FuelQuest's software and services please call 1.866.857.3835 or email [info@fuelquest.com](mailto:info@fuelquest.com)

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