



The Future of Global Oil & Gas Supply Chain Logistics

Sense and Respond Inventory Management

Evolution of the Logistics Model

The dynamics surrounding the global petroleum supply chain require adaptive, extended enterprises that are very fleet-of-foot. This is an era of discontinuous change and all the old (often linear) rules no longer apply-rather, all the old process assumptions should be reassessed.

Historically, inventory was stocked with an "x" day supply mentality. The construct evolved over time and has its roots in information inventory management systems that were laborious and slow. This concept was succeeded by just-in-time (JIT) inventory management which works well, except when it does not.

The sense and respond (SR) supply chain process is a paradigm shift from JIT processes that attempt to predict future demand. SR identifies changing requirements and business challenges as they occur, quickly adapting and responding before further change morphs the newly created opportunity once again.

Business failures, regional political and/or civil unrest requires fast and adaptive behavior to insure there are no disruptions in production. In today's environment, JIT might not be as successful as it has been over the last two decades.

Sense and Respond

Logistics models are adapting to changing environments. This is the essence of the SR-a responsive, robust systemic approach that is distributed across global operations. Today, the current mature level of sophisticated and powerful information and communications technologies enable the implementation of the SR business model.

The advent of SR logistics solutions continues the march towards the Lean Energy business model, which is similar to the manufacturing processes used by successful automobile and aerospace manufacturers. The SR logistics solution integrates three primary enabling technologies: material and equipment identification, fit-for-purpose global communications, and a single instance of the inventory data store.

Implementing the Solution

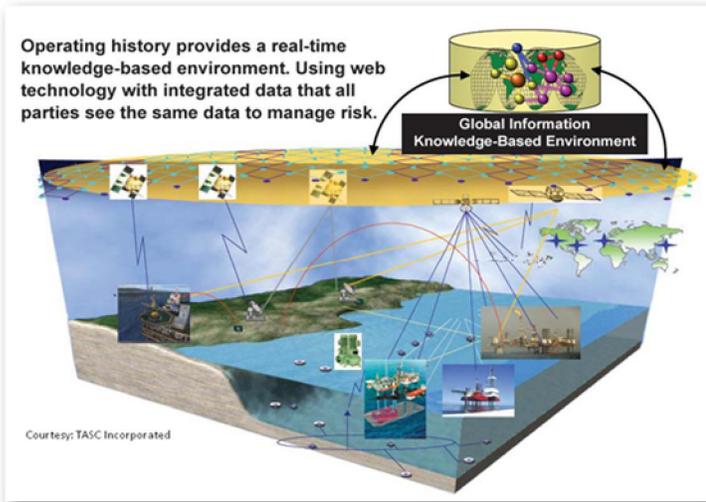
Items in the supply chain must be identified. Historically, retailers and others have used barcodes and lately, inexpensive radio frequency identification (RFID) tags have been attached to more expensive items such as electronic goods. Secure, fit-for-purpose communications is readily available throughout



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most parts of the world. SR logistics solutions can take advantage of land line, spread spectrum radio, cellular, or satellite networks or combinations thereof. Users no longer require a private network, but can lease protected bandwidth from a number of suppliers as required.

A single instance of the inventory data store combined with appropriate inventory management software to manage the physical and logical database(s) enable all authorized users to see the available inventory as well as its current location. This can be accomplished through the use of a web-based Logistics Data Management System (LDMS). Additional value is derived when the SR inventory management system is integrated with a similarly structured Field Operations (FO) system. These systems provide field personnel and their supplier personnel with secure online access to all the known information about a piece of equipment (i.e., compliance reports, maintenance history, engineering revisions, CAD drawings, etc.).

These types of FO solutions enable collaborative, concurrent engineering as well as construction auditing. Moreover, the RFID tag critical to the inventory system is also the identifier for Maintenance, Repair and Operation (MRO). When integrated with the SR logistics capability, a dramatic reduction on direct costs and significant improvements in field operational process cycle times are attained.

Our Success is Measured by Your Success

Our team employs professionals with the logistics experience, technical knowledge and industry background required to support our clients with the implementation and management of technologies that enable efficient operations through greater asset and operations visibility.

We help establish standardized asset identification methods and effective business processes supported by a robust web-based LDMS to provide relevant real-time knowledge to the appropriate personnel.

Knowledge Ops Incorporated is working with TASC Incorporated and their partner Avantix, LLC, to integrate the Catalog Ordering Logistic Tracking System (COLTS) with Knowledge Ops, FO solution that reduces direct costs, saves process time, and optimizes field operations.

COLTS has been deployed in numerous U.S. Department of Defense Installations and Navy vessels around the world, providing total asset visibility across global depot operations, including the use of field proven RFID. Implementing this Rapid Response Management (RRM) integrated solution enables oil and gas companies and their supply chain partners to become dramatically more efficient with their resources.

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