CREATING A PERFECT INI

Ryder is committed to perfecting knowledge of a part's movement from Tier One to assembly.

by Tom Jones

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The automotive industry is the largest sector served by Ryder. We specialize in providing precise, inbound logistics for OEM (original equipment manufacturers) and Tier One assembly (the first or primary supplier in the chain). Last year, we managed the inbound flow of more than 30 billion parts, providing service to OEMs at 56 assembly plants and to dozens of Tier Ones at more than 300 plants.

Supporting this inbound material flow, Ryder maintains a detailed parts database of more than 1.5 million unique parts and a proprietary technology. Processes are used to combine the execution of physical part movement with real-time information about the movement. This electronic execution system processed more than five million automotive shipments last year—double the shipment volume of a typical North American OEM.

A large public firm and component of the Dow Transportation index, Ryder has been in business for 75 years and has served the automotive industry for at least 50. The company is investing to improve its leading automotive position.

Ryder

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Because part movement is an integral component of the automotive supply chain, this article will focus on our commitment to providing perfect information about a part. Particularly, we are perfecting knowledge of part status during movement from Tier One to assembly. At Ryder, we view this as synchronizing the physical and virtual supply chains.

The physical flow begins with a virtual activity—the creation of the Plan for Every Part (PFEP) data record. The use of PFEP is well known throughout the industry. Ryder has added the logistics attributes of a part to create what we call the Logistics Plan for Every Part.

The plan includes all the classical data elements of PFEP coupled with the distinct plan for moving a unique part according to a unique production release.

Ryder's logistics PFEP provides the framework for the continued matching of events that occur during the physical movement of a part and the corresponding electronic update.

If we compare our process to the airline industry, our part plan is now analogous to the flight plan that must be filed by a pilot prior to takeoff. Our logistics plan functions as the flight plan for a truck, for a pallet, for a container. This plan is created prior to movement, and then all events of the subsequent movement are controlled by this plan.

Then these movements—"flight plans"—are monitored continually by "control towers." Whereas the physical movement requires cross docks, terminals, and sequence centers, the virtual movements have created a new facility, a control tower.

Ryder's first such control tower was actually 100 square feet in a part room above our shop on Fort Street in downtown Detroit, which opened in 1997. This fall, Ryder broke ground on a 120,000-square-foot facility in Novi, Michigan, that will house our automotive material flow operations center—a center controlling five million part shipments.

Underpinning our control towers is our proprietary technology, which helps us solve the part movement puzzle each day. The foundation of our technology is a part database that cascades any change to a part attribute across the entire database, in real time. Our backbone provides visibility: a change in part quantity, time window, or packaging is instantaneously seen by all parties—OEM, Tier One, and carrier.

Part Data Elements: Database Building Blocks

We capture more than 40 logistics attributes of a part—for example, part weight, hazardous material class, and loading instructions—that are critical to perfect part flow. Each attribute is classified according to its unique utility for each stakeholder in a part movement.

Each of the three major players in a part movement—OEM, Tier One, and carrier—will

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care about different data. An OEM will be interested in the scheduled arrival time and dock door arrival schedule. A Tier One will be interested in the scheduled loading-time window and equipment type. Both will be interested in carrier assignment and release record. A carrier will be interested in truck and trailer numbers, while OEM and Tier One will be interested in the location of a specific part or purchase order number.

We consider each data element of PFEP critical, and from these data elements we create building blocks for our information management systems. Picture each side of one of these building blocks as an attribute uniquely of interest to one stakeholder in the part movement.

Solving the Puzzle: Real-Time Information Utility

We have created an information utility for all stakeholders to manage perfection into parts movement. We do this by solving the minute-by-minute puzzle of status change. The key to our approach is presenting the unique data of interest to each stakeholder while maintaining simultaneous changes in the database for all stakeholders. We compare this to solving a Rubik's cube tens of thousands of times per day: the data building blocks are the foundation of this system, each side of each block capturing data of interest to one of the three major participants—OEM, Tier One, or carrier.

Just as the puzzle is solved, we need to react and re-solve as the part progresses through the stages of movement from release, shipment configuration, loading, and carrier assignment to real-time track-and-trace and event management. Ryder's shipment volume is about 100,000 automotive inbound shipments each week, and each shipment requires 10 updates during its movement. Therefore, we solve this puzzle about 200,000 times per day.

In our systems, any participant can view data on any part. As we solve this puzzle again and again, *any change* in any data element instantaneously *changes all* data elements.

Ryder's Logistics Releasing System: An Information Utility

Finally, our information systems have created a new utility, which we call the logistics release. This represents the synchronization of production-releasing information with supply-chain information.

Formerly, the matching of material release data with supply-chain data occurred only well after a shipment moved. To match data often required hundreds of man-hours combing

through many different sources of information, often a manual process that duplicated effort.

Now, as soon as we receive the release, all information is synchronized, and this synchrony can be extended to payment systems. For one of our OEMs, our system is linked to electronic freight payment systems that can authorize payment for movements that follow the plan.

Supply Chain Control Towers

The ability to synchronize the physical and virtual supply chains is relatively new in the logistics industry. It is the fastest-growing segment of Ryder's supply chain management business in terms of volume. In 2002 we operated two control tower facilities, in Farmington Hills, Michigan, and Ft. Worth, Texas. In 2007 we had six: four multiclient facilities and two dedicated to one client. In 2002 we managed only U.S. shipments; in 2007 about 30 percent of our shipments were beyond U.S. borders.

We have now progressed with Web-native technologies so that any broadband connection can be the basis of a control tower location. We can walk into any Starbucks, log into our secure VPN on a laptop, and view any customer's inbound networks, live in real time, without limitation of the scale of the network involved.

For the Future: Accepting the Challenge to Pursue Perfection

Ryder will continue to align expertise, resources, and technology to better and more effectively support the needs of the company's substantial global customer base.

- **People.** Investing in our people, we have added 1,200 jobs in Michigan since January 2005 to serve the automotive industry.
- **Technology.** We are investing to achieve perfection. One of these investments is in telematics to provide seamless electronic truck communication in real time, fed into our material-flow system. The first of these applications is with our customer Toyota, supporting the new San Antonio assembly plant. We are further investing in RFID (radio-frequency identification) and the creation of a global supply-chain dial tone. The first instance of this dial tone is occurring with a Tier One, providing information between Europe and North American movements, and for a telecom firm, providing information between China and North America.
- **Globally.** We have increased our Asian presence dramatically, and Asia Pacific is our prime region for investment. ■

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