
The Modern Logistics Service Provider

A case for expanding the scope of your warehouse operations and connecting to the rest of the world

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This paper discusses a broad range of important topics for third-party logistics (3PL) service providers. It identifies new technologies that are available to enable activities such as warehouse operations control, web-based order entry and information delivery, call-center order entry, voice-enabled data access, activity billing and transportation management.

Your warehouse is the center of your universe. Every day you receive products, put them away, count them, pick them, and ship them out the door. After that you review what happened, report to clients, bill them, and get paid.

You work behind the scenes on behalf of your clients to make things happen so that their customers are supplied with the right products in the right quantities at the right time. Then, and only then, your client is happy.

Each of your clients has a unique set of requirements because their customers may have different order processing, shipping and service demands. As you grow with more clients and more of their customers, your *supporting cast* cannot possibly remember every rule for every customer. You do not have a cast of thousands, nor the budget to support such a cast. However, your clients expect you to deliver new services when they need them. Your client hired you because you have a special talent to get hundreds of tasks handled efficiently and reliably.

Since you have done a good job in the past, chances are your clients will ask for additional services. Managing the receiving, putaway, inventory counting and picking processes will not be enough. You will be asked to take orders, communicate with vendors electronically, provide custom web interfaces, evaluate inventory flow, select the lowest cost carriers, ship with compliant labeling and many other tasks of increasing complexity.

Your sales team will continue to find new opportunities for you to grow your business and make more money. However, you will only be able to take advantage of these opportunities if you have the systems and technology to satisfy the increasing demands of your customer base.

The Expanding Role of Third-Party Logistics

The modern information management systems available today to logistics businesses of all sizes generate measurable improvements in warehouse operational efficiency. These systems impact floor operations, administrative operations, transportation systems and billing processes. They reflect a new set of realities that make advanced information systems a requirement for short- and long-term success. Traditional Warehouse Management Systems (WMS) were stand-alone products primarily focused on inventory control and the creation of certain routine documents. There was little or no operational knowledge built into these systems. As long as the inventory balanced against the activity, everyone was happy with the results. In the 3PL arena, these systems were somewhat enhanced by activity billing features, but these were usually implemented as an afterthought and not truly integrated to the process. Therefore, these traditional WMS products left operational management completely in the hands of the warehouse personnel and their supervisors.

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| Warehouse Management <ul style="list-style-type: none"> ▪ Receiving ▪ Putaway ▪ Replenishment ▪ Kitting ▪ Cycle Counting ▪ Picking/Order Management ▪ Packing ▪ Reporting ▪ Inbound Scheduling, Reporting and Door Control | Order Management <ul style="list-style-type: none"> ▪ Order Entry (call center, customer service) ▪ Web Storefront ▪ Product Catalogs ▪ Voice Data Access ▪ Online, Web-Based Order Status for Clients and Customers | Activity Billing <ul style="list-style-type: none"> ▪ Customer Service Agreements (Contracts) ▪ Rate Change Automation ▪ Flexible Accounting ▪ Accessorial Charges ▪ Billing Reports |
| Transportation Management <ul style="list-style-type: none"> ▪ Manifest/Labeling ▪ Rating/Routing ▪ Carrier Scheduling ▪ Carrier Settlement ▪ Dispatch and Equipment Control | Customer Relationship Management <ul style="list-style-type: none"> ▪ Customer Contact Information Management ▪ Purchasing History ▪ Sales Management ▪ Event Management ▪ Recall and Hold Processes and Notification | Accounting <ul style="list-style-type: none"> ▪ General Ledger ▪ Accounts Receivable ▪ Accounts Payable ▪ Bank/Cash Management |
| Human Resources Management <ul style="list-style-type: none"> ▪ Payroll ▪ Time Management ▪ Regulatory ▪ Benefit Management | Productivity Management <ul style="list-style-type: none"> ▪ Labor Tracking ▪ Productivity Measuring | Business Intelligence <ul style="list-style-type: none"> ▪ Inventory Forecasting ▪ ABC Analysis ▪ Dead Inventory Alert ▪ Financial Reporting ▪ Performance Tracking |

Table 1. 3PL Functions

The effective range of responsibilities of a 3PL now extends beyond the four walls of your warehouse. Clients are now commonly asking you to manage everything from the front-end where orders are captured, all the way through the warehouse, shipping dock, and to the customer's location where delivery is made. Table 1 shows the possible systems you may need if the work you are being asked to handle extends beyond your walls.

The Need for Flexible Connectivity

In addition to the vast scope of operational requirements, your warehouse, the center of your universe, must be able to communicate effectively with the outside world in many different ways. You receive products from your clients and their suppliers, sometimes with advance notification. Your clients and their customers send you orders from a variety of information systems, such as their website, various order entry and ERP systems, via fax and e-mail and so on. You organize the products and the orders and then ship them via parcel carrier systems, LTL carriers and possibly your own fleet. The most important inter-system communication channel is the Internet; followed closely behind by interfaces to other companies' systems via EDI or XML (EDI, Electronic Data Interchange, and XML, EXtensible Markup Language, are both industry standards for the creation and sharing of documents between computer programs).

Web access is a requirement for progressive 3PL service providers. Your clients want web access to customer information (their accounts), inventory availability (their products) and order management (their business). They also need to provide access to their customers so that they can place orders, maintain their own contact information and check order status. Web access needs to be secure and have dynamic, customer-specific information. Web access needs to segregate clients from each other and allow customers to see only the information (product catalogs, orders and inventory) that your clients want them to see.

If your clients want to use their own order entry system or web storefront, then you need to be prepared to receive information from their systems either via custom file transfer, EDI or XML. Electronic connectivity is a requirement for communicating with suppliers who send Advance Shipment Notifications and other electronic documents. This applies to all facets of warehouse activity, including receiving,

shipping, inventory control, live status information, product on hold, shorted ships and many others.

Your Dilemma

Given the growing demands on 3PL service providers, your business may well possibly need a wider range of technical capabilities. Your immediate questions probably are: *Which systems do I need to buy? How can I get them all to work together? How much is this going to cost me?*

Many logistics service providers find themselves facing the situation that to acquire and service more clients, they need advanced information systems; however, to acquire this technology, they need the business in place to pay for it! An answer to this dilemma is to choose technology that is affordable and flexible, that expands and contracts with your business, and that has a front-end acquisition and implementation cost that you can afford.

Most 3PLs use some level of technology. But most of these systems are limited and struggle to effectively keep up with the new demands of the modern supply chain execution. Many legacy systems only handle certain discrete components of the logistics operation, such as receiving, or location management. Many companies operate with paper-based systems, spreadsheets and human memory. When your clients ask you to do more, the answer cannot always be to add more people or more paper. Also, plugging in additional sub-systems to older, limited systems is expensive, time consuming and does not optimize the operation of your business. Finally, having your client's business rules reside in the minds of your employees is a big risk to your operation.

The answer is better technology. The challenge is how to sort through the growing list of systems vendors who all have nothing but glowing things to say about their systems. It is a daunting task to identify their real capabilities from pure vapor and cosmetic bells and whistles.

The Warehouse-Centric Approach

The following is a quote from the article **What's Wrong With Application Software? Business Processes Cross Application Boundaries**, published online by TechnologyEvaluation.com, an impartial software evaluator:

"...every company would like to have a single, integrated enterprise application that meets all of their needs. Business processes would be seamlessly supported because they would be contained within a single application. Users would never have to leave the comfort of their favorite application."

A warehouse-centric approach allows for the seamless integration of the systems that you need as a modern 3PL service provider. In a warehouse-centric system, each function and process is tightly coupled with all others. New features and sub-systems are added as needed without complicated integration work. This approach is very different from the traditional, painstaking process of forcing separate standalone systems to work together in a coordinated environment.

A warehouse-centric WMS system is expandable to include information about customers, ship-to addresses, pricing, and other useful information. Customers can be matched to products and catalogs. Orders can be placed directly from the warehouse system by your clients or by their customers.

A warehouse-centric WMS uses a unified database that can capture events (receipts, picks, putaways), process accessorial charges (such as storage), and generate activity billing reports

A warehouse-centric WMS can be easily extended with an integrated Transportation Management System (TMS) so that when orders are entered to a specific ship-to address, this information is matched to the order for labeling, shipment scheduling, and carrier selection. This and other useful extensions provide your business with the benefit to take orders, fulfill orders, package them and ship as a single series of automatically coordinated events, rather than a sequence of individual processes handled by separate applications.

This is the essence of the warehouse-centric approach, a technology that because of its flexibility and expandability, it allows you to serve the demands of your clients and their customers. Additional benefits of a warehouse-centric system include:

Ease of use. The need for separate applications to manage events for the same order is eliminated. So is the need to re-enter or transfer the same information to different systems (e.g., customer names, product SKUs, quantities, and addresses). One system executes orders from start to finish.

Consistency of Information. Because the order entry system uses the same data as the warehouse management system, the customer service rep has visibility to all product information quantities in all locations and has confidence that orders can be processed successfully.

Reliability and Consistency of Business Rules. A modern, warehouse-centric system is also rules-based and rules-structured, allowing for consistency in all transactions with your clients and their customers.

Easier Maintenance. With a unified database, the warehouse system and order entry system do not have to continually exchange data related to orders, quantities and SKUs in order to maintain accuracy. There is no need to maintain two separate databases and to continually monitor the interface between the two.

Lower Cost. A warehouse-centric system with integrated order entry, activity billing, and transportation systems eliminates the need for the interfaces required when separate systems are used. Some experts estimate that 70% of the cost of installation and integration of traditional systems is related to the need to build custom interfaces.

The Glass Warehouse

The Glass Warehouse is a metaphor that describes the concept of total visibility and access to the most granular transactions in the lifecycle of an order. A Glass Warehouse allows you to see all inventory and every event as it occurs (orders and operations) making it possible for you to have greater control over the results. It allows you to intervene quicker to resolve issues.

The total visibility of the Glass Warehouse enables you to make decisions and manage your operation in *real-time*. You can monitor changes in inventory levels, locations and demand that take place every time an event occurs such as picking a product, entering an order, receiving inventory, and so on. This information is known to the system *at the very moment it occurs*.

A real-time system tracks products by quantity, location, as well as other attributes such as height, weight and condition, from the time they are received until they are shipped. This includes detailed, total visibility even when products are in motion on a forklift or a tote. When a shipment is received, it is checked into the system while identifying the receiving location, the quantity and other information. The shipment is then putaway in a location according to the business rules established by you. In a real-time system, the availability, condition and location of inventory are known to the system all the time anywhere it is in any process. The benefit is that you can accurately and confidently make commitments to customers for the products they want to order, as well as make detailed real-time plans on how much your clients need to produce to meet their estimated demands.

All of this can only be offered by a system that manages information in real time.

Information Availability

One of the biggest complaints of older systems is the difficulty in accessing information. This is primarily because older systems present huge volumes of data but do not present it as meaningful information.

Several problems exist. First, the standard reports generated by these legacy systems are rarely what management or operations personnel need. Custom reports

are difficult to create because the database typically is not structured for easy data extraction and manipulation; therefore creating custom reports with these systems is expensive and time-consuming. Ad hoc reports are simply not affordable or practical. Second, since reports are created from the available data, a dedicated, single-focus application can only report on what it knows. Combining data from multiple system databases to create a composite report adds even more to the cost of building useful reports. Finally, these reports are typically made from scheduled consolidation of data as it is extracted and delivered on paper. Inquiries by management (order status, business volume) are simply not available unless a defined report is written, scheduled and printed.

In a Glass Warehouse with a modern unified database, information is available continually from multiple viewpoints. Data warehousing and data mining services are routine products of a modern relational database. Variable sets of information can be extracted from both historical records and from current operations data to build flexible *what if* views of activity in the warehouse.

A modern WMS should provide access to current order status, customer information, product availability, inventory levels and other dynamic information via the web and a voice response system (via telephone). Outbound information to report on defined events such a shipment notifications, shortages of inventory, and exception alerts via e-mail, pager, connected PDA and text messaging should be fully supported.

Within the enterprise, managers and operators should be able to query systems from workstations, wireless devices and even voice access. The value of real-time information is higher than the one provided by older, batch methods of reporting. What is happening at any time is available to anyone who needs to know, all the time.

Flexibility, the Key to Future Viability

These days you need to react to many different requirements and respond to new business opportunities in new ways. Your ability to manage inventory differently from client to client, take orders differently for different customers within a client's base and even display a unique look and feel on the Client's web storefront for specific customers, including organizing electronic catalogs for each customer or groups of customers, are just a few things that can earn you new clients vs. turning them away.

Typically, the software architecture and data structure of older systems are extremely rigid. Customizing software to support changes in your operations usually affects the entire system because older software was built as large programs with very few, modular objects and configuration options. Older systems dictate how a business operates, rather than implement the desired business practices. If your system dictates how you manage inventory, orders and clients, then it is not likely that it will provide flexibility for handling new requirements.

Modern systems are built to be flexible. Changes to operations, user interfaces, reports, and data structures are more commonly implemented as part of the evolution of a standard product, rather as the creation of one-off, expensive-to-support custom software.

Even if you are not a technical person, here are a few questions to ask about a system's flexibility and its future viability:

- 1) When was the system built? Even though mission critical systems are judged strongly on past successes, if the history extends back too far, you are dealing with a system that will be expensive to change and adapt to new business requirements. A long future is better than a long past.
- 2) How was it built? Is it an older system, ported to a modern platform (like Microsoft NT) or was it written in the modern platform from the ground up? Was it built as an object based system, utilizing smaller components of code that are easier to change than large blocks of dependent code?

- 3) How does it interface and exchange data with other systems? Via Application Programming Interfaces (APIs)? Flat file interface? EDI? XML? How difficult is it to maintain these interfaces and to replicate data between systems?
- 4) Can you build custom reports and labels easily or does the system vendor need to build them for you? (Report and label generation is one of the most common areas of custom alteration of a system).
- 5) Is it rules-based and can you have different rules for different clients and customers? Is it easy to setup inventory that is owned by different customers? Can inventory be organized in zones based on their environmental requirement (hazardous materials, damaged goods, temperature control, restricted access for valuable inventory)? Can each client's inventory be arranged in electronic catalogs, specific to each of their customers?

There are many more questions like this. You can (and should) ask lots of questions about how the system was built, how it can adapt to your needs and how much it costs to perform new tasks.

The Road Ahead

The demand for fully-enabled logistics service providers will grow rapidly as distribution business models change. The evolution of the traditional *middleman* in wholesale distribution pivots on a change in inventory ownership where manufacturers retain title to their products longer, often to the point of end-user purchase. Older practices of *buy-hold-sell* on the part of distributors will give way to contracted logistics services for products sold by the manufacturer via the Internet or directly through retail. In this case the middleman will sell services and not products. This is where you come in. Your expanded role will be to help facilitate transactions, organize client inventories and catalogs, take and fill orders, execute shipments and keep track of every minute detail, all in real time. The more capable and coordinated your systems are to meet these challenges, the better chance you have to participate. Your warehouse is still the center of your universe. But it is part of a greater universe of unified logistics.

About Kevin Michel

Kevin Michel is a principal at Michel Distribution, based in Aberdeen, Maryland. Michel Distribution provides fulfillment services to both end consumer and business-to-business customers for a wide variety of clients. With 2,500,000 square feet of warehouse space strategically located in Maryland, Tennessee, and California, Michel Distribution is positioned to provide same-day or next-day service to practically anywhere in the continental United States. For more information about Michel Distribution, please visit www.micheldist.com.

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