

# IMPROVING EFFICIENCY THROUGH BASIC OUTBOUND OPERATIONS

THREE SIMPLE STEPS YOU CAN IMPLEMENT IN YOUR WAREHOUSE *RIGHT NOW*

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## SUMMARY

Small to medium size businesses commonly have basic needs for the implementation of warehousing methodologies. Many of the mainstream periodicals focus on the needs of large, mature organizations looking to break into new technologies or service offerings. Small to medium sized businesses can realize substantial benefits from not only new initiatives featured in such periodicals, but also from basic principles not yet adopted in many cases. Many of the basic principles can be implemented in some manner without large-scale investments though there is no doubt warehouse management systems (WMS) can certainly assist in managing and maintaining the principles. This document focuses on just three techniques that can be adopted without the tremendous price tags associated with full WMS implementations.

## BUSINESS CHALLENGE

Lean warehousing, supply chain visibility, RFID, 3PL – the list goes on. These are today's buzz words and acronyms for the mature logistics operation looking to squeeze the next dollar out of the warehousing, distribution, and supply chain processes or gain more sales through new services. Many small to medium size businesses are not yet ready for these initiatives, but can achieve greater efficiency and customer satisfaction through the implementation of fundamental processes.

In fact, many small to medium size organizations have yet to implement methods of realizing the savings available through the use of some of the more basic warehousing principles—let alone the newer ideas. For these businesses, adopting the basic strategies – usually without large investments of time or money – will yield a bigger bang for the time and money invested, than implementing the more advanced strategies.

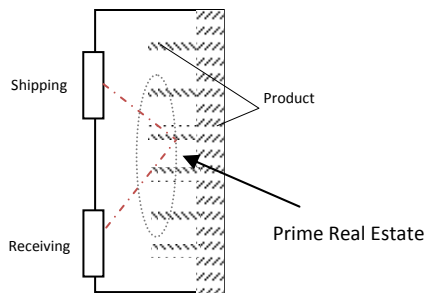
Outbound operations can be improved in a number of ways. Product type, business model, physical configuration, and several other factors affect the usefulness of the various available methods. Typical small to medium sized businesses performing their own distribution often have the following characteristics:

- **Low level of “intelligent” mechanization** – While a good number of warehouses contain conveyors to move product from one location in the warehouse to another, this equipment is typically point-to-point and does not include artificial intelligence to offload product at one point or another.
- **Extremely varied rates of movement dependent on product** – This is also known as velocity. Some products move within days or hours while other products move in weeks or months. Warehouse personnel will be able to identify the goods they handle daily versus those items they handle once per month. In many cases items have not been systemically categorized based on their rate of movement.
- **Islands of knowledge** – Each warehouse has an expert in various facets of the operation. The individual has become the expert over time. Their time spent with that operation has placed them in a position to be the most knowledgeable as to
  - Where products are located
  - What products are out of stock
  - What carrier should be used to ship any given order
  - Which customers have special needs

Each of these characteristics presents its own issue. There are some basic operating ideas that can be folded into warehouse processing to assist in improving efficiency when facing these types of issues.

## 1. LOCATION, LOCATION, LOCATION

Understanding the physical warehouse space and product is critical to efficiency. The less time spent handling a product, the more time there is to move more products. Using a diagram of the warehouse, even if it's just a sketch, mark the receiving doors, the shipping doors, and the storage/picking area. Draw a straight line from the receiving doors to the shipping doors. Factor in height from racking if applicable. Because the travel time from Receiving to Packing/Shipping is the least the closer product is to the line, *this is your highest value real estate*. By minimizing the travel time to store and retrieve goods, warehouse personnel have more time to handle more orders.



Now that the most efficient space from a movement standpoint has been determined, maximize its use. Try to putaway the fastest moving products (highest velocity) in these spots. When receiving slower moving products, drive past the empty storage locations in your high value real estate for an empty position in lower value real estate areas of the warehouse. To make the most efficient use of this high value real estate, the fastest moving products should be located there.

Many ERP systems have the capability to determine the rate of movement of products. Talk to your inventory manager to see about having products categorized by their movement speed; also known as velocity or ABC. Provide this information to the put-away personnel so they can gauge where to place the product in storage. Even without a systemic-driven put-away system helping to identify optimal storage locations, your put-away driver can attempt to slot product appropriately if given a guide.

The goal is to minimize the total travel time in the warehouse, inbound and outbound combined. If the operation performs order picking (traveling the warehouse to fulfill a given order before beginning the next order), the highest value real estate may skew more towards the outbound side of the operation than the inbound side because the product is put-away only once, but picking may visit the product several times.

## 2. ADDRESS THE WHAT, WHEN, AND HOW OF CUSTOMER ORDERS

What goods are processed when, and how they are processed, can be a complex series of questions. There is a high degree of variability in the answers depending on the business model. For all businesses distributing their own goods, there is an optimal set of operating methods. Understanding how customers order, when customers order and what *will* be ordered are crucial to gaining efficiency and exceeding customer expectations. Because customer ordering can vary greatly by business, not all of these considerations are applicable in all situations.

At some point in processing, it may be cheaper to ship free, unordered goods than to send them through a more labor-intensive packing and processing routine. Many organizations allow customers to dictate how many units to order by the piece or by volume level. If a product is stored in inventory in boxes of 12 units, accepting an order for 11 units can be more costly than giving the customer the twelfth unit at no cost. Every touch of product bears cost. When 11 units are ordered, each unit must be touched. The shipping container for the 11 units must be

moved through the warehouse process. If the distributed quantity is the entire box of 12 and the packaging is substantial enough to withstand shipping, only incurring the labor to move the entire box of 12 through the distribution process can be a lower overall cost even with an unordered unit being shipped.

This does not mean give away the store. It means evaluate inventory, orders, and processing paths to determine when savings can be realized. For each type of processing path through the distribution system there is a cost. Understanding the processing cost, versus the value of goods, leads to understanding the most effective means of processing a given product's packaging type through the distribution process. Like velocity, there are software applications that are capable of assisting in product categorization. If this capability is not available to you, estimate the cost of processing a single unit of product versus the cost of a larger packaging unit such as a case.

Once the costs are known, gather the average number of units ordered (or shipped) at a given time. If the average is nearing the larger packaging unit quantity, consider making the larger packaging unit the standard unit of measure for ordering and distribution.

#### Example of Evaluating Unit Processing

Cost of processing each individual unit of A:	\$0.50
Cost of processing a repack container to shipping:	\$0.25
Cost of processing a full case of 12 units of A to shipping:	\$0.35
Units of A to be processed:	11

Processing 11 units of A through to shipping:  
 $(\$0.75 \times 11) + \$0.25 = \$5.75$

Processing a full case of 12 units to shipping: \$0.35

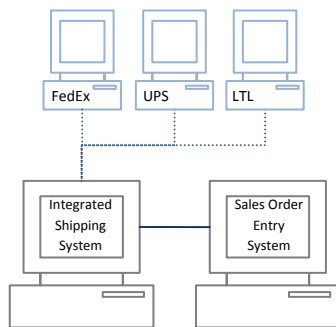
Cost to ship 11 units	\$4.10
Cost to ship 12 units:	\$4.75

Full cost of delivering 11 units to customer:  $\$5.75 + \$4.10 = \$9.85$   
 Full cost of delivering 12 units to customer:  $\$0.35 + \$4.75 = \$5.10$

Processing cost difference:  $\$9.85 - \$5.10 = \$4.75$

*If the value of a unit of A is \$4.75 or less, then giving away the 12<sup>th</sup> unit at no cost to the customer is a cost saving proposition to the shipper.*

### 3. REVIEW INTELLIGENT SHIPPING SYSTEMS



*An integrated shipping system consolidates multiple shipping systems into one. Further benefits are achieved when integrated to business systems.*

Shipping systems can provide a variety of efficiency and cost benefits for a relatively small investment. Some of those benefits include reductions in data entry, carrier selection based on cost or delivery times needed, as well as document creation.

Many companies create customer information through data entry screens available in their ERP or order management system. The order is then turned into a pick list. The product is picked and delivered to a packaging/shipping station. If the shipping system is integrated with the order management system, the customer's address can be transferred directly from the order management system to the shipping system. Without such integration, the shipper must manually enter the ship to information into the shipping system. Aside from the time required for data entry, there is an increased risk of keying errors that can lead to mis-delivered shipments.

Unless a company is dedicated to a single carrier, utilization of a multi-carrier system allows for rate comparisons. Many carriers offer their own form of shipping system, but these systems evaluate only one carrier leaving the shipper to determine which carrier to use. Usually, the only way to compare rates is to log on to each carrier's proprietary system to determine the best, most cost effective options. By using a multi-carrier solution, the shipper creates the shipment once and the shipping system applies rules and performs comparisons to return the best option for the shipment.

Sometimes customers mandate a particular reporting requirement or reporting format. The shipper typically uses a separate software package to create the customer's reporting or documentation causing two main issues:

1. The user must recognize that the customer has special reporting requirements and know how to create such documentation.
2. The shipper is commonly keying shipping information into a separate application which is redundant data entry and can be the source of keying errors.

Some shipping systems provide methods for understanding customer specific report requirements and can generate the necessary reporting right out of shipping system. In these environments, knowledge of customer specific requirements, what and where formats exist, and additional data entry requirements evaporate as the shipping system takes on the task of creating the reporting in the appropriate format as necessary based on the software configuration.

## CONCLUSION

There are numerous efficiencies to be gained in many small to medium sized companies distributing products. Just a handful of possibilities have been listed here. The concepts are all relatively straightforward and commonsensical. Many sizes and shapes of software automation exist on the market that can assist businesses in driving such initiatives. Sometimes the first step in understanding the potential impact of such methodologies requires upfront, manual testing to gauge whether or not the benefit is attainable in a given operation and, if so, whether the time and money of taking the next step to automation and maintenance through more powerful software can be expected to provide a reasonable return.

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*About the Author:*

*This paper was written by Brad Bolinger, vShip Product Manager for vSync. vSync is the leading provider of supply-chain compliance and execution solutions for Microsoft Dynamics™ GP. Our solutions enable suppliers to meet and manage customer mandated EDI and fulfillment requirements. Using vSync solutions, companies can automate the order-to-cash process through rules processing, automated transfers to remote warehouses, automated ASN generation, and automated pack verification, shipping and label automation. More information about vShip and vSync products is available at [www.vsync.com/vShipdemo](http://www.vsync.com/vShipdemo) or your Microsoft Value Added Reseller.*

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