



## **Appointment Scheduling** **Achieving the Positive Ripple Effect**

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**APPOINTMENT SCHEDULING: Achieving the Positive Ripple Effect**

*At some point in time, almost everyone has experienced the following situation...You arrive on time for a scheduled appointment only to find that you will be delayed for an indeterminate length of time, generally without reason. The longer you wait, the more you realize that the rest of your day will be behind schedule...but you see no apparent recourse other than frustration.*

**Because carriers are paid only when their wheels are turning, long waits at docks result in a shrinking supply of assets.**

Such is the situation encountered on the job everyday by freight carriers when confronted with delays caused by inefficient appointment scheduling. *The Washington Post* says it best, "Miserable hours, low pay, lonely existence. Why would anyone want to make a living this way?"<sup>1</sup> Frustratingly long waits at docks result in a shrinking supply of assets, often leading to increased rates for shippers. Because carriers are paid only when their wheels are turning, wait time at the dock has a serious impact on earning power. In turn, this causes increased dissatisfaction and results in higher turnover.

The appointment scheduling process is no less frustrating for shippers than receivers as both are forced to juggle numerous demands from multiple parties, generally with outdated or incomplete information. In addition, the increasing reliance on just-in-time logistics practices have put even more stress on dock operations; thus, magnifying the effect of late arrivals and loading/unloading delays.

**Accurate appointment scheduling can provide great benefit to all in the supply chain through improvements in efficiency, visibility, resource and capacity utilization, and product flow.**

Inefficient performance of shipping and receiving activities affects more than just the schedules as it negatively impacts many parties in the supply chain, from the purchaser of the product to the end customer. For this reason, the importance of effective appointment scheduling practices cannot be underestimated. Addressing and alleviating problems with scheduling will gain notable efficiency in visibility, resource and capacity utilization, compliance, and product flow. Accurate appointment scheduling can provide a great benefit to all parties in the supply chain, forming a positive ripple effect that equates to a competitive advantage.

**PROBLEMS WITH CURRENT APPOINTMENT SCHEDULING**

There are numerous problems resulting from the methods currently in use for appointment scheduling. The most

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<sup>1</sup> Wells Tower, "The Long Haul", *The Washington Post*, August 2001  
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**Out of date information, schedule disruption and mismatched resources-to-volume in the warehouse are the result of a highly manual and labor-intensive process currently in place.**

notable is that the majority of all scheduling is a highly manual and labor-intensive process. Of the dozen Fortune 500 retailers and grocers interviewed on this subject, only one has any automation built into their system. The remaining continue to use paper, phone and fax. Shippers and consignees spend upward of 40% of their time<sup>2</sup> on the phone with carriers or vendors, trying to meet their requests for appointment times while still complying with the needs of purchasing. Carriers are forced to either spend hours on hold to make appointments or to leave messages for future callbacks. In addition, appointments may only be scheduled during set business hours. Consequently, when problems arise during off hours the receiver cannot be notified, resulting in out-of-date information in receiving, and often leading to schedule disruptions and mismatched resources-to-volume in the warehouse.

**Schedule inaccessibility by vendors and carriers leads to excessive rescheduling; a significant drain on resources.**

The process of rescheduling appointments is also a significant drain on resources. One large grocery retailer estimates that approximately 20% of the appointments made every week have to be rescheduled, creating approximately 950 total reschedules for an average week. Bob Johnson, Inbound Logistics Manager for Harris Teeter grocery stores, cites rescheduling as the largest problem in scheduling today. In an attempt to offset costs, Harris Teeter has instituted a policy of charge backs for any appointment that is rescheduled more than twice. Currently, between \$7,000-\$12,000 is collected each month in rescheduling fines. These figures clearly illustrate the depth of the problem. Because carriers and vendors do not personally have access to the schedules, they must rely on contacting the scheduler each time that the situation changes.

**Excessive wait time at dock doors leads to lost revenue, dissatisfaction by drivers and turnover.**

Problems with appointment scheduling result in delays at the dock; delays that carry a price tag for shippers, receivers and carriers. A study conducted by Mercer Management Consulting estimates that there is a large cost to shippers for unloading delays at receivers, up to 8% of the total transportation budget.<sup>3</sup> For carriers, the excessive wait time contributes to lost revenue, driver dissatisfaction and turnover. The results of the National Refrigerated Drivers Survey, performed by the Truckload Carriers Association, lists the average wait time to load as 3.39 hours per stop

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<sup>2</sup> “Martin Labbe Associates Study for Truckload Carrier Association”, *Overdriveonline*, August 1999

<sup>3</sup> Mercer Management Consulting, “*Just in Time to Wait*”: *An Examination of Best Practices for Streamlining Loading/Unloading Functions*, July 2000

**Wait time causes a reduction in the earning power of drivers which increases turnover.**

and wait time to unload as 3.20 hours per stop.<sup>4</sup> A similar survey of dry van drivers found the average wait time for a driver in a particular week to be 33.5 hours, adding up to a \$1.5 billion loss per year for carriers.<sup>5</sup> Wait time causes a reduction in the earning power of drivers which increases turnover. Driver turnover can range from 50% to 80% for motor carriers per year, with the cost of replacing a single driver estimated as high as \$10,000.<sup>6</sup>

**Inefficiencies in the current manual appointment scheduling practices reach all the way from the Shipper to the end customer.**

## **FAR REACHING EFFECTS**

Inefficiencies resulting from the current manual appointment scheduling practices affect not only the scheduling department, but extend farther to other parts of the supply chain; Shipping, Receiving, Distribution, Purchasing, and finally to the end customer. Generally, product is ordered with respect to a particular delivery date so that acceptable inventory levels and/or a fluid production schedule can be maintained. The shipping schedule of the supplier must be set in advance of this required date in order to deliver on time and keep inventory on track. However, due to frequent delays at the pickup point, delivery appointments often cannot be made until after the pickup has been physically performed. By the time the driver contacts the receiver, they might not be able to match the delivery appointment with the transit time. Consequently, any delay in the shipping schedule may translate to a delay of delivery and a shortage of inventory, resulting in an unavailability of product for the end customer. It becomes evident that a problem in one area of the process easily and quickly fingers out to affect countless others in the process. Inaccuracy and inefficiency in the communication of scheduling requirements of the buyers, sellers, shippers, and receivers result in the requirements of the end customer not being met.

**Any delay in the shipping schedule may translate to a delay of delivery and a shortage of industry.**

Inaccurate appointment schedules may also cause chaos in the warehouse. Arrivals occurring out of sequence cause major congestion when too many pieces/pallets arrive at the same time, producing a back-up in the receiving lanes and

**Arrivals occurring out of sequence produce back-up in receiving lanes and marshalling lanes.**

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<sup>4</sup> Truckload Carrier Association, *National Refrigerated Drivers Survey*, 1998

<sup>5</sup> Truckload Carrier Association, *Dry Van Drivers Survey*, June 1999

<sup>6</sup> Alan Robinson, "Fleet Management Handbook", *Food Logistics*, July-August 1999

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**Delays to one carrier at one warehouse extend to other companies down the line.**

marshalling areas. This congestion results in carriers who arrived on time for their appointments being delayed.<sup>7</sup> The delays to a carrier at one warehouse affect their ability to arrive at subsequent appointments on time, extending the problem to other companies down the line. “The warehouses are most affected if we have problems,” says Kim Apodaca of the Ralph’s grocery chain. “If our scheduling system goes down and we can’t produce schedules, there is chaos. The receiving mode becomes, ‘First Come-First Served’. Marketing begins to receive complaints and phone calls from panicky vendors. Some truck drivers or vendors refuse to even move the loads without acquiring a delivery appointment first.”

### **POSSIBLE IMPROVEMENTS**

**Access to information by all, expanding appointment scheduling hours and limiting manual contact between cutoffs translate to scheduling improvements.**

It is evident that scheduling practices must be addressed and improved in order to minimize wait time, improve communication and ensure more on-time delivery of goods. Allowing access to information by all parties involved, expanding hours during which appointments can be made and limiting the amount of manual contact between handoffs are three points that would drastically improve scheduling practices.

#### **ACCESS TO INFORMATION**

**Enabling access to the same information by all parties in real-time allows for the creating of an accurate scheduling plan.**

Of all companies interviewed, approximately 85% feel that communication between carriers, vendors and receivers is the area most in need for improvement in scheduling. Often, appointments are made by a broker or a vendor and never communicated to the carrier, leaving the carrier with no knowledge of expected arrival time. Another prevalent problem is that the amount of product expected by the receiver frequently does not equate to the amount of product being shipped by the vendor. Only if the receiver has access to the shipping information of the vendor can an accurate volume estimate be made. Carriers and vendors need adequate information about the scheduling requirements and business rules of the receiver in order to schedule appointments on their own, without relying on calling the scheduler each time to confirm an appointment. Enabling access to the same information by all parties in real-time allows for the creation of an accurate scheduling plan.

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<sup>7</sup> Michael Docherty, “Scheduling Receiving”, *Managing Logistics*, Winter 1997

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**Delays such as weather, traffic and mechanical failure during off hours raise the need for 24/7 scheduling**

## 24/7 SCHEDULING

The limited hours during which appointments can be made present another barrier in the way of a productive scheduling plan. Unfortunately, delays such as weather, traffic congestion and mechanical failure do not always occur during normal business hours. Consequently, there is often a significant time lag between the data given to the warehouse for resource planning and the actual state of the schedule. Resources allocated based on a project plan for the next business day may have been done so as determined by information available at close of business the day prior. In other words, the actual deliveries made the next morning may vary widely due to events that occurred after the close of business.

**24/7 scheduling promotes immediate notification of changes via email or mobile device, keeping all involved up to date**

By allowing vendors, carriers and shippers to update appointments as events occur, the warehouse can get a clear picture of the day ahead. Accurate information on potential scheduling problems can allow the warehouse to be proactive in avoiding potential backups. "The ideal situation is one that allows carrier to arrive and unload 24/7," says Greg Smith, Vice President of Sales and Marketing with Landair Transport. "However, few receivers can offer this level of flexibility so the next best solution is a 24/7 delivery appointment system that is real-time and offers greater flexibility than current methods of scheduling appointments." This way, as appointments are updated, the buyer, receiver, shipper, and carrier should receive immediate notification of all changes, via email or mobile device, keeping all parties up to date.

## LIMITED MANUAL CONTACT

**Consistent and timely data is made available to all parties through a centralized system.**

More seamless handoff of data between shippers, receivers and carriers results in fewer undue delays in scheduling and fewer communication mistakes. It is the opinion of Richard Kochersperger, Director of the Center for Food Marketing at St. Joseph's University, that "To get goods to the distribution center correctly and on time, a centralized system needs to be in place. Purchase orders should go to the centralized traffic system where opportunities can be identified to reduce costs and streamline operations."<sup>8</sup> Purchase order data can then be transmitted to shippers to create loads. Loads can be transmitted directly to carriers from which appointments

<sup>8</sup> Mina Williams, "Distribution Dogma", *Supermarket News*, February 2001

**An Internet based appointment scheduling system provides access to information, 24/7 scheduling and limited manual contact.**

can be made. In this way, consistent and timely data is made available to all parties.

## **ACHIEVING A SOLUTION**

With far-reaching scheduling problems pinpointed and improvements for these problems identified, it must be determined how these improvements can be implemented and desired results achieved. The prime way to achieve these results is an Internet based appointment scheduling system which provides access to information, 24/7 scheduling and limited manual contact. An Internet based system also provides a centralized repository for all data concerning appointments and shipments where information is accessible to everyone involved in the scheduling process. It can be updated at anytime by anyone with access to the network, streamlining the flow of information.

**Individual business rules for each facility serve as guidelines for carriers and vendors.**

An effective solution should provide maximum flexibility to the schedulers while enforcing business rules for the carriers and vendors. The system owner would need the ability to uniquely configure each of their facilities with their own capacity constraints, standard loading/unloading times, hours of operation, scheduling cutoffs, and acceptable products down to the dock door level. Individual business rules for each facility would then serve as the guideline for carriers and vendors when scheduling on-line, ensuring appointments made met the receiver's requirements.

**Integration of the appointment scheduling system with other systems is necessary for maximum benefit.**

Interaction between the appointment scheduling system and other systems would be necessary for maximum usability. Integration from an order management system offers order visibility necessary to completely automate the cycle and ensure that correct information is carried through all the way to delivery. Integration would allow for information to be sent back from the appointment scheduling system to the order management system; keeping buyers constantly alerted of their order's status. Linking an Internet based appointment scheduling system with an integrated voice response system would enable carriers to receive appointment information and to make schedule changes over the phone. This would be extremely beneficial while traveling or any other time when direct access to the Internet is not available or practical.

**Significant improvements may be realized through the appropriate use of technology.**

**An Internet appointment scheduling system greatly increases opportunity for many more benefits.**

**The determination by a scheduler of exactly what is on a truck would allow for efficient priority assignment with regards to loading and unloading.**

**A high level of visibility is easily and automatically determined through an Internet based appointment scheduling system.**

Several of the systems currently in use are mostly homegrown by shippers and receivers and are designed to address transportation appointment scheduling. The primary benefit of the existing systems is the ability to transition a company from maintaining paper schedules to those that are electronic. However, because they are client-server based, they are unable to give carriers or vendors access to schedules, thus, still requiring appointment scheduling via the telephone. The architecture of these systems is limited in scope and consequently does not allow for the next level of automation possible with the Internet, and it is undeniable that significant improvements may be realized through the appropriate use of technology.

## **FAR REACHING BENEFITS**

Achieving and implementing the above mentioned improvements through an Internet appointment scheduling system would widely increase the opportunity for many more benefits to be gained from better information. SKU level visibility, increased capacity utilization, decreased rates from carriers, compliance, access to historical data, and improved efficiency are just some of the benefits to be realized.

### **SKU LEVEL VISIBILITY**

SKU level visibility of what product is actually on the truck at the time of scheduling is believed by one national retailer to be the greatest benefit gained from an Internet based scheduling system. While the delay of any product is costly, the delay of advertised or high-velocity goods is particularly expensive. If the scheduler could determine exactly what items were on the truck for each appointment, correct priority could be assigned for loading and unloading. SKU level visibility ensures that the most crucial product can be delivered when needed.

Increased product visibility also serves to boost the practice of cross-docking. Cross-docking, the practice of picking product off an inbound truck and loading it directly onto an outbound trailer, can generate great cost savings by eliminating put-away and picking; two of the mostly costly activities in the warehouse.<sup>9</sup> The implementation of cross-docking requires the warehouse to be continually aware of what products are coming in and when, so that the appropriate outbound trailers can be staged. This level of

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<sup>9</sup> Douglas Chandler, "Conquering Transportation Woes", *Warehousing Management*, September, 2000

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**Reducing wait time allows for more miles to be put on existing equipment.**

visibility is easily and automatically facilitated through an Internet based appointment scheduling system.

#### INCREASED CAPACITY UTILIZATION

An increase in overall capacity utilization can be achieved as the scheduling process is improved. Based on current processes, the total number of hours America's 3.1 million truckers spend idling each year comes to almost 6.2 billion squandered man-hours;<sup>10</sup> an unbelievable amount of wasted capacity. For each driver sitting idle there is one tractor and at least one trailer idle, thus creating the need for even more drivers and equipment to handle demand. By reducing wait time, more miles can be put on existing equipment, which would lower costs significantly. For every 1% reduction in wait time, an additional \$15.6 million per year in cost savings<sup>11</sup> could be realized by carriers and others.

**Increasing a carrier's productivity translates to lower rates for shippers.**

#### DECREASED RATES FROM CARRIERS

It has been determined that decreased wait time at the dock can directly correlate to decreased freight rates. Because there is a growing trend, especially among larger truckload carriers, to quantify the impact of delays on their revenue by an individual shipper, the costs of delays from a particular shipper are used to calculate rates that more accurately reflect the carrier's costs.<sup>12</sup> Therefore, if the carrier's productivity can be increased, providing lower rates can be afforded. Greg Smith of Landair Transport states, "The faster that our equipment can be turned around and on its way, the more positive consideration we can give when contracts are negotiated. A shipper can expect a significant difference in cost by implementing efficient dock practices".

**Compliance of vendors and carriers by receivers, a common request, is easily achieved through an Internet based appointment scheduling system.**

#### COMPLIANCE

A common request from receivers is to have the ability to determine the compliance of their vendors and carriers based upon required delivery date of product. By transmitting the order information and desired delivery date directly to the shipper, the receiver should be able to track the number of times the supplier sends out loads with non-compliant dates to their carriers. Additionally, the number of times the carrier schedules delivery appointments for non-

<sup>10</sup> Wells Tower, "The Long Haul", *The Washington Post*, August 2001

<sup>11</sup> Linda Longton, "Wasted Days and Wasted Nights", *Overdriveonline*, August 1999

<sup>12</sup> Toby B. Gooley, "Cooperation + Communication = Lower Costs", *Logistics Management & Distribution Report*, January 1999

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**The analysis of historical trends is available through the maintenance of all appointment dates in a centralized repository.**

compliant dates and how often the carrier is actually on time for their scheduled appointments can be tracked. This provides receivers with performance information on their partners so that they may focus on the areas of greatest concern to improve dock operations. Partnership breakdowns can be identified and rectified in a timely manner.

#### ACCESS TO HISTORICAL DATA

**The amount of available information is directly proportional to the potential for efficiency by shippers and receivers.**

The maintenance of all appointment data in a centralized repository enables the analysis of historical trends. Analysis of historical trends is extremely beneficial from two points of view. First, the tracking of past volumes allows for the prediction of future resource requirements. The more accurately a warehouse can respond to forecasted demand, the lower their overall costs will be. Second, establishing historical trends would help to identify any patterns that negatively impact dock performance. Once identified, these patterns could then be addressed and corrected. The more information that is available, the more proactive a shipper or receiver can be in streamlining dock operations.

#### IMPROVED EFFICIENCY

Automating day-to-day appointment scheduling activities would allow personnel resources to focus on other activities and would dramatically improve in efficiency. A prime example of this can be seen with the Ralph's grocery chain when they implemented their appointment scheduling system and were able to cut the number of people devoted to scheduling by 50%. The time generated from these extra resources can then be used to accomplish other tasks, further improving productivity.

Reducing wait time to just 17 hours per week would reflect in a gain of approximately 32,160 miles per year by each trailer.

### CARRIER ILLUSTRATION

The example shown below of a national truckload carrier illustrates perfectly the above described benefits. Particularly noteworthy is the additional capacity made available through decreased waiting time.

<b>Miles</b>	1,000,127,000
<b>Number of Tractors</b>	10,055
<b>Miles/Tractor</b> <small>(Miles / Number of Tractors)</small>	99,466
<b>Number of Work Weeks</b>	48
<b>Average Number of Miles/Week</b> <small>(Miles/Tractor / Number of Work Weeks)</small>	2,072

Taking a carrier who drives 1 billion miles per year, based on their number of tractors, each tractor currently drives approximately 2,072 miles per week.

<b>Wait Time/Week</b> (in hours)	33.5
<b>Average Speed</b> (MPH)	40
<b>Total Miles/Week</b> <small>(Wait Time/Week x Average Speed)</small>	1,340
<b>Total Annual Miles</b> <small>(Total Miles/Week x 48 Weeks)</small>	64,320
<b>Number of Additional Miles</b> <small>(Total Annual Miles / 2)</small>	32,160

Using the wait time figure of 33.5 hours per week (cited from the National Dry Van Drivers Survey) the total number of miles that could be gained from eliminating wait time could be determined. However, as it is not feasible to eliminate wait time completely, these figures are then divided in half to present a more realistic picture. If wait time could be reduced to 17 hours per week, each tractor could gain an additional 32,160 miles per year.

Lower rates for shippers and receivers and improved carrier relations can be gained through greater capacity utilization.

<b>Revenue/Mile</b>	\$1.20
<b>Number of Additional Miles</b>	32,160
<b>Revenue Opportunity</b> <small>(Revenue/Mile x Number of Additional Miles)</small>	\$38,592.00
<b>Average Cost/Mile</b>	\$.80
<b>Variable Cost of Additional Miles</b> <small>(Average Cost/Mile x Number of Additional Miles)</small>	\$25,728.00
<b>Additional Profit Potential</b> <small>(Revenue Opportunity - Variable Cost of Additional Miles)</small>	\$12,864.00

These additional miles per tractor, even when adjusted for overhead, carry a significant profit potential.

<b>Number of Additional Miles</b>	32,160
<b>Average Number of Miles/Week</b>	2,072
<b>Gained Weeks in Capacity/Tractor</b> <small>(Number of Additional Miles / Average Number of Miles/Week)</small>	15.52
<b>Number of Work Weeks</b>	48
<b>Percentage of Additional Capacity Gained</b> <small>(Gained Weeks in Capacity/Tractor / Number of Work Weeks)</small>	32.3%
<b>Additional Miles Gained by Fleet/Year</b> <small>(Number of Additional Miles x Number of Tractors)</small>	323,368,800

With the figures calculated above it can be determined that an additional 32.3% capacity could be gained for an astounding 323 million mile increase for this carrier overall.

Greater capacity utilization translates to lower rates for shippers and receivers and improved carrier relations. By improving appointment scheduling through the type of system outlined above, dock operations become more efficient and wait time decreases, bringing about the benefits illustrated here.

An efficient scheduling system helps to minimize delays, provides revenue benefits to all involved and increases driver satisfaction.

### REALIZING THE ADVANTAGES

As appointment scheduling is often filled with miscommunication and frustration for shippers, receivers and carriers, there are great benefits to be gained from the diligent pursuit of an efficient scheduling system. Real-time communication can help to minimize loading and unloading delays, providing a revenue benefit to carriers and increase

**Employing best practices through appointment scheduling equates to streamlined distribution, optimal maintenance of inventory and on-time delivery of product.**

driver satisfaction. Increased benefit to carriers can translate to lower freight costs for shippers and receivers and minimized detention charges.

Providing a centralized repository of order information, linked to shipments and appointments, promotes the adherence to delivery schedules required by Purchasing. In the end, when best practices are employed in appointment scheduling, distribution is streamlined, inventory is maintained at optimal levels and product is available to the end customer when it is desired. Advantages from appointment scheduling – SKU level visibility, supplier compliance, access to historical trends, decreased freight rates and greater resource utilization – equate to a powerful competitive advantage in any industry. Efficient dock scheduling, achieved through an Internet appointment scheduling system, can create a ripple of benefit across supply chain departments that cut costs and bring advantages to all.