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The industry publication dedicated to helping warehouse managers and their bosses improve productivity and manage more profitably with tips, comments and articles written by practicing professionals.

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Dimensional pricing: a ticking time bomb?

By J. T. Ampuja, President, Supply Chain Optimizers

Editor's Note: If your warehouse operation is involved in extensive shipping via parcel carriers, the pricing changes made this year will have a major impact. Perhaps your customers are not prepared, but you should be. The change has received less publicity than it deserves, and our guest author does more than explain the problem. After demonstrating the significance of the pricing change, he provides more than a dozen ideas about how to deal with the situation. While many journalists have expressed concern about the thunderstorm, this article should provide some shelter. KBA

Earlier this year, both UPS and FedEx announced the implementation of dimensional pricing on all ground shipments in the USA and Canada, beginning next January. While dimensional weight pricing has been in airfreight for years, the two leading small package carriers exempted ground shipments until 2007. Then dimensional weight pricing was applied only to cartons larger than 3 cubic feet in volume, which is equivalent to a package larger than 18 inches in all three dimensions. This change increased costs for many shippers, but it left most e-commerce shipments unscathed.

Many companies that make small package shipments will feel the financial impact of this announcement. There will be no relief from this change, as all national small package carriers, including USPS and Canada Post, will apply similar dimensional pricing fees.

Who built the time bomb?

It seems clear that e-commerce was the driver in this change to dimensional pricing. If one looks at the UPS and FedEx ground shipments prior to 2000, they would be characterized by business to business activities such as repair parts going from a Ford warehouse to local car dealers around the country. Many packages would go from one origin to a limited number of destinations, so pickup and delivery locations would be repetitive on a daily basis. The packages themselves would be quite consistent in size and weight.

E-commerce changed all that. The explosive growth of that business model brought all kinds of new shippers and receivers into the mix. Deliveries shifted to residential areas and typically involve a single package per day. The shippers who were new to e-commerce focused on their websites, their product offering and pricing strategies. Little or no thought was given to the efficiency of shipments. Most companies used five or six different shipping case sizes. Many shippers reduced outbound case sizes to three or fewer because this requires less box inventory. The inefficiency of shipping more filler or air is passed to the small package carrier.

How is it calculated?

So how does dimensional pricing really work? The carrier weighs and measures the shipping box to establish a shipping cost by weight and by cube. Whichever cost is higher is the one assessed to the shipper. Carriers have a formula that sets the minimum weight for each box based on its size. Regardless of how little is packed into that box, the minimum weight will apply. Whenever the minimum weight exceeds the established minimum, the actual weight will be charged. So the carrier will benefit regardless of what is shipped.

Here is an example of how dimensional weight pricing functions. I have a shipping case containing a single air filter from a major auto manufacturer. The box measures 13.8 X 13.8 X 3 inches and weighs 1 lb 2 oz. Traditional weight pricing will generate a bill based on 2 pounds because weights are always rounded up to the next full pound. For dimensional weight, the carrier will calculate the cubic area of the box at 571 cubic inches. Dividing this number by 166 (the divisor set by both UPS and FedEx) will result in 3.44 which will again be rounded up to 4 for billing. So for this particular box dimensional weight application will double the freight cost.

So… What is the impact of dimensional pricing? The cost increase can be enormous. One expert thinks the cost to shippers will be more than $1 billion. Whatever the total dollar impact of dimensional pricing, most of the brunt will be borne by small companies that lack negotiating leverage. The big national account shippers have contracts in place that lock in pricing for some extended period. All contracts have an expiration date and when that arrives there will be a move to raise the price.

What can you do?

Trying to negotiate with carriers who are experts in this field leaves the smaller shippers at a major disadvantage. UPS and FedEx are among the world's most sophisticated logistics companies. They may know more about the shipper than the company executives do. Some of the typical

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key performance indicators measured are time spent on pickup, total packages per pickup, total weight, total cube, density per package, customer data errors such as incorrect address, inaccurate weight per package, and damage claims. Because all of these factors impact cost to serve and account profitability, the carriers know this data in detail. If shipment volume or average density changes, the carriers may know that long before most shippers do. So does all this mean there is nothing to be done to combat dimensional pricing other than to accept it as is? Absolutely not! Here are a few ideas on how to proceed:

- Get started now, since dimensional pricing doesn't go into effect until after Christmas.
- Weighing and measuring some outbound shipments will allow you to estimate the cost impact. Budgeting properly may help you prepare better and avoid a profit shortfall in 2015.
- Ask for a time delay on implementing dimensional pricing. Some major firms have already received timing reprieves to allow them to get their internal costing mechanisms in place.
- Request a phased-in density factor. If your shipments average 8 pounds per cubic foot and the tipping point is 10.4, ask the carrier to apply 9 pounds as the breakpoint for six months and then you can accept the full 10.4 after that.
- Analyze the shipping cases in use today. A minor reduction in box size – such as one less inch – would keep the dimensional weight at less than 3 pounds, thus generating a 25% lower shipping cost than a 4 pound box.
- Add additional boxes to your portfolio. In most instances, six boxes will generate lower shipping costs than four boxes. But if six is better than four, is ten better than six? The answer is yes in a computerized system, but no if you rely on manual box selection. Ten becomes too difficult for the order packer to manage.
- Shift volume to USPS, which is usually lower-priced than the two major parcel carriers. However, note that USPS also prices on dimensional weight.
- Consider regional parcel carriers who may be able to lower costs. Many shipments stay within a limited geographical area and can therefore use a cheaper regional provider.
- Set a zone skipping program to soften the pricing impact with UPS or FedEx. This process entails shipping volumes of product some distance before they are turned over to a parcel carrier for final delivery. This usually requires significant outbound volume in longer service cycles.

Is a study worthwhile?

While all of the above actions can be implemented internally at little cost, there are ways to drive pick pack efficiency to another level if one is willing to engage in a diagnostic study. These kinds of changes may be the result of that study:

- Add a limited number of additional boxes in order to reduce both packaging and shipping cost.
- Revise procedures, generate training films, and conduct educational sessions to improve efficiency. What are best practices and how do we get everyone to understand them?
- Certain boxes are inefficient due to the ratio of length width and height. The box in which length and width are both double the height, such as 6X6X3, will always have the lowest cost of construction and should be lowest in price because of the smaller amount of material in it.
- At one time, computer-aided box selection software was the exclusive purview of large companies that had a WMS. Nowadays we are able to bring a less complex software package to the table which will make the smaller shipper as efficient as the giant company without incurring an investment in ERP.
- Some shippers can reduce total expenses by more than $1 million a year just by utilizing the right boxes. This is also a significant green opportunity. Doing the analysis via software allows us to evaluate hundreds of different box sizes to pinpoint the ones that will deliver the lowest total cost.

Common mistakes

Yet we see experienced managers make three fundamental errors time and again:

- There is a bias to fewer boxes. Many times the stated position is that "we don't want to add any additional boxes."
- Some shippers gloss over the complexity associated with pick pack box selection. We have found companies that assigned this project to interns with no operating knowledge.
- Some do not appreciate the difference between engineering disciplines. We have seen packaging analysis performed by industrial engineers, facility engineers and even an aeronautical engineer. Packaging engineering is an entirely different discipline.

So, the dimensional pricing train has left the station. Any shipper who is not taking action against this change can expect significant cost increases next year. There are opportunities to mitigate the impact. Perhaps the words of Arthur Ashe – the noted tennis player – best capture this situation: "Start where you are. Use what you have. Do what you can."

Jack Ampuja is President of Supply Chain Optimizer. A citizen of USA, Canada and Finland, Jack has more than 35 years of supply chain management experience with five Fortune 500 firms. He serves as Executive in Residence at Niagara University, Lewiston NY. Jack holds a BS degree from the University of Massachusetts and an MBA degree from the University of Connecticut.

KEN'S COMMENTS

What should you stop doing?

Doing less and thinking more may be the most neglected imperative in executive technique. Most of the trendy gurus tell us how to do more in less time. We see book titles such as" Lean in," or advice on handling "Business at the Speed of Now." Another author tells us that we should "Never Eat Alone." A column in The Economist was titled "in praise of laziness." It claimed that the biggest problem in business is too many distractions and interruptions. Too many things are done for the sake of form, and too much time spent in meetings. The Dutch have a single unpronounceable word that translates as "meeting sickness." Too many executives are on a treadmill, and the treadmill seems to spin faster. One survey found that 80% of managers continue to work after they leave the workplace. Mobile equipment makes this easier than ever. Author Jim Collins may have been the first to advise executives to develop a "stop doing list." Which meeting should you cancel? Which task should be delegated to some whose time is less expensive than yours? Is it time to stop leaning in and start leaning back?

A tactical view of pricing

Before the application of industrial engineering to materials handling in the warehouse, most logistics service providers used a surprising amount of guesswork in the development of prices. Sadly, some were accused of merely copying the prices used by competitors. While there have been great strides in developing an understanding of warehousing costs, pricing continues to be an art as well as a science.

Here are a few principles of pricing tactics:

- Your price should be set to maximize profit, not just to improve market share
- The price should influence expectations, not just react to them
- You should justify your price in terms of value to your customer, not just a need to increase revenue
- It is relatively easy to adjust a price when you can demonstrate an increase in value

Keeping the right people

Author Jim Collins made this observation:

Those who build great companies understand that the throttle on growth for any great company is not markets, or technology, or competition, or products. It is one thing above all others; the ability to get and keep enough of the right people."

Technology versus loyalty?

In the early days of business computers, salespeople for one of the largest and best-known suppliers, lived with this mantra: "nobody ever was fired for purchasing an IBM." Computer technology was new, and many of the machines were unreliable. The market leader appealed to safety and security. Today, brand recognition in business machines has greatly receded. Many users know little or nothing about the brand they are using, and there is little concern about reliability or quality. Similar changes have happened with automobiles, home appliances and other things that we buy. Performance guarantees will replace brand awareness, and vendors understand that a serious lapse in quality will be fatal.

WAREHOUSING TIPS

The rebirth of rail

Several decades ago, the great majority of high-volume warehouses had a rail siding. Deregulation and the decline of boxcar traffic changed that, and today few warehouses are served directly by rail. The new alternate is intermodal, with highway trailers moving on flat cars. In this situation, an ideal location for a major distribution center may be near an intermodal terminal rather than direct service by rail. This means that warehouses that were once located close to Chicago will move 40 miles southwest to the intermodal transfer point. This is justified by savings in the cost of moving trailers from flat cars to receiving docks. There is a trade-off between the cost of real estate close to the intermodal terminal and land that is farther away. When transportation accounts for up to 50% of a company's supply-chain costs, the price of moving a trailer from intermodal terminal to warehouse becomes a significant factor. One expert estimates that about one third of the warehouse space now under development is located close by an intermodal facility.

Cost of drayage is not the only factor. As the shortage of long-haul truck drivers becomes increasingly acute, more freight will move from truck to rail. However the move will be via intermodal rather than boxcar for two reasons. First, few major distribution centers today are equipped to handle boxcars. Second, railroad management has emphasized the service advantages of intermodal, while boxcar traffic gets relatively less attention.

Voice directed receiving

Voice technology has been used in warehouses for at least a decade, but primarily for order picking and shipping. Yet there can be even more dramatic productivity in receiving. This is particularly true when the receiving process includes directed put away. In one case, a receiving job once took two hours is now accomplished with voice technology in less than 30 minutes.

Five trends to watch

By J. H. Boyd, *CSCMP Quarterly special issue*, pg. 30.

The author reviews five trends that should be considered in selecting a site or a distribution center. The first is the trend toward privatization of highways and bridges, together with introduction of user tolls. Next is the growing concern about cutting costs. The author's company lists 23 DC locations and calculates total annual operating costs for each. Northern New Jersey is the most costly, and Louisville Kentucky is the least. There is a 32% differential between the highest and lowest cost locations. Third is the new emphasis on the effectiveness of "last mile" delivery. Driven by the growth of fulfillment, DC locations are likely to be in communities where it is easiest to offer efficient and economical delivery service. The shortage of skilled workers comes next, and the author emphasizes that the truck driver shortage is not the only place where demand for skilled people exceeds supply. Finally, he recognizes the new phenomenon of manufacturing at the distribution center, specifically describing 3-D printing, also known as additive manufacturing.

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Supply-chain management technology: what does the future hold?

By Claire Umney, *Logistics & Transport Focus*, August 2014, pg. 32.

This article takes a broad view of technology changes in the field. The first is multichannel capability. It is driven by the need for flexibility of delivery options. Visibility is the second, or the need for immediate responses. Transport and inventory management represent the nuts and bolts of traditional logistics. One-stop-shop solutions describe the ability of a single service provider to manage a broad array of logistics and global trade processes, from initial sales order to final delivery. Within the field of technology, cloud solutions and mobile devices represent the greatest stimuli for change.

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Work + home + community + self

By S. D. Friedman, *Harvard Business Review*, September 2014, pg. 111.

This unusual article deals with the challenges of time management.

The author has a forthcoming book titled Leading the Life You Want: Skills for Integrating Work and Life. “A commitment to better work/life balance isn’t the solution. Balance is bunk." It assumes that we must always make trade-offs. A more realistic goal is better integration between work and the rest of life.

The article describes three principles:

- Being real: clarifying what’s important
- Being whole: acting with integrity
- Being innovative: acting with creativity

Calculating the benefits of freight bill auditing

By B. Knasinski, *Inbound Logistics*, Aug. 2014, pg. 28.

The author is a vice president of GENCO. He points out that up to 30% of all freight invoices are incorrect. He also describes seven criteria that should be used in choosing a supplier to provide auditing services. They are the following:

- Financial security. See an audited statement and demand an adequate employee dishonesty bond.
- Customer service. What KPIs are maintained regarding service issues?
- Carrier relations management.
- Coding, editing and validation.
- Freight liability. How does the provider determine whether the bill should be paid?
- Partial shipment capabilities.
- Visibility. Can you show supporting documents to resolve issues?

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I want you for compliance

By E. Kulisch, *American Shipper*, August 2014, pg. 8.

The author advocates the use of “trusted trader programs.” Companies would receive incentives for voluntarily improving security within their own organizations. A new report describing this program is available at this website: http://www.stimson.org/research-pages/partners-in-prevention/.

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The Most Vulnerable Place in Your DC

By D. Maloney, *DC Velocity*, July 2014, pg. 61.

It has long been recognized that the majority of accidents in warehouses take place at or near the docks. Docks are the places where thieves, rodents, dust and outside temperatures can steal, contaminate or spoil the cargo. This article puts the spotlight on temperature control products, because they are vulnerable to temperature change. At the same time, the danger of failing to restrain vehicles is emphasized, since either thieves or human error can cause the trailer to be driven off before loading or unloading is complete. Differences between varieties of dock levelers are described, as well as the advantages of using dock seals and shelters to protect against dirt and outside air.

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It’s a store! It’s a site! It’s a warehouse!

By M Douglas, *Inbound Logistics*, Aug. 2014, pg. 35.

This article is a graphic description of omni channel fulfillment. It is the process of using store inventory, as well as factory and warehouse stocks, to fill e-commerce orders. This may be the most widely discussed logistics idea since the RFID campaign in the middle of the last decade. Walmart is recognized as the leader of omni channel retailing, but new software has enabled much smaller retailers to engage in similar practices.