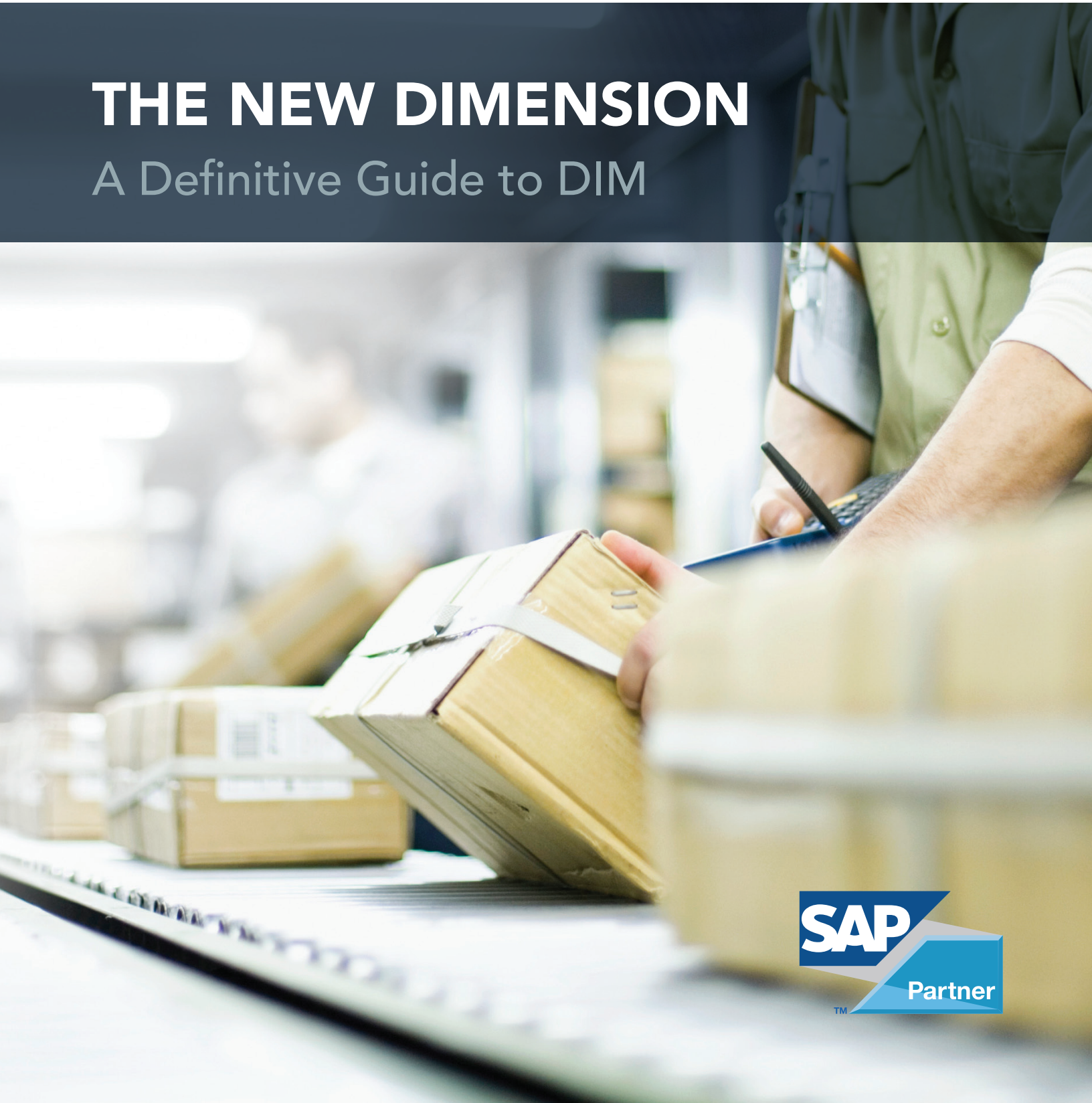




# THE NEW DIMENSION

A Definitive Guide to DIM





# INTRODUCTION

**The new year brings new challenges for shippers everywhere as they adjust to the widespread shift to dimensional weight pricing amongst leading carriers like FedEx and UPS. Dimensional weight pricing can dramatically affect ground shipping costs, but from a carrier's perspective, it makes perfect sense.**

By understanding what DIM is, why it exists, how it will affect shipping costs, and what can be done to mitigate its impact, shippers will be well-equipped to determine and pursue the strategic action necessary to manage and optimize their ground shipping costs in the new dimensional weight world. Use this whitepaper as your guide to navigating the 'new dimension', led by SCT Software.

# UNDERSTANDING DIM: WHAT, HOW AND WHY

## What is Dimensional Weight Pricing?

Simply stated, **Dimensional Weight Pricing** calculates shipping price based on the external dimensions of a package rather than its weight.

The recent changes mark a paradigm shift in ground shipping and arguably constitute the greatest price increase in the history of shipping—at least since fuel surcharges were instituted in the 1980s.

But Dimensional Weight Pricing is nothing new. Historically, it has been used for packages that measure three cubic feet or more sent by ground shipping, and for packages sent by air. The new carrier policies from UPS and FedEx simply extend dimensional pricing to all ground packages—even those at the smallest dimensions.

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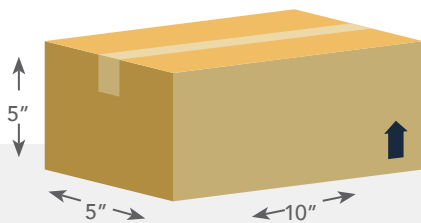
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## How Does DIM Work?

**Dimensional weight calculations consist of two variables: the package volume and the dimensional factor.** Dimensional factor refers to the density of each package in pounds per cubic foot and varies by carrier and mode of shipping. The standard DIM factor for ground shipping is 166. It is important to note that DIM factors can be negotiated. Generally speaking, the higher the DIM factor, the greater the potential for added shipping costs.

**To calculate DIM, divide package volume (L x W x H) by the DIM factor.**



### Before DIM:

Box Weight: 1 lb

**Billable Weight: 1 lb**

### After DIM:

250 cubic inches (volume) / 166 (DIM factor) = 1.50 lbs

**Billable Weight: 2 lbs**

In cases where the actual weight of the package exceeds the dimensional weight of the package, shippers are billed for the actual weight. See a demonstration of how the new pricing structures work below.

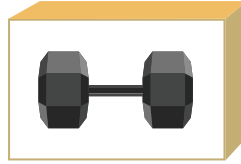
## Understanding New Ground Shipping Cost Structures



Actual Weight: **3 lbs**  
Dimensional Weight: **3 lbs**  
**Billable Weight: 3 lbs**



Actual Weight: **1 lbs**  
Dimensional Weight: **9 lbs**  
**Billable Weight: 9 lbs**



Actual Weight: **5 lbs**  
Dimensional Weight: **2 lbs**  
**Billable Weight: 5 lbs**

## Why Have Carriers Made the Change?

Many have been predicting the shift to dimensional weight ground shipping for quite some time, citing a number of critical driving factors including, but not limited to, the following.

### > GROWTH IN B2C SHIPPING

Over the past several years, carriers have accommodated the explosive growth of B2C shipping, particularly due to the uptick in consumer e-commerce activity. Many of these ground shipments consist of smaller items and lower density packages, resulting in lower total revenues per stop and more frequent stops per route. DIM ensures that each shipper pays for its occupied load capacity by placing premiums on low density packages.

### > CARRIER "CUBE-OUTS"

Due to the influx of low density parcels, trailers often hit capacity constraints long before weight constraints. Normally, ground delivery vehicles fill with packages in the morning and return to their stations empty at the end of the day. However, widespread use of large, lightweight boxes has resulted in troublesome "cube outs", requiring drivers to return to their stations midday for reloading. This is both costly and time intensive.

### > LITTLE INCENTIVE FOR OPTIMIZATION

While significant profitability burden has fallen on carriers, shippers have historically had little incentive to optimize ground shipping packages in boxes under 3 cubic feet. In fact, many shippers have opted for a few standard box sizes to simplify the pick and pack process. From the carrier perspective, DIM will act as a driving force for packing efficiency.

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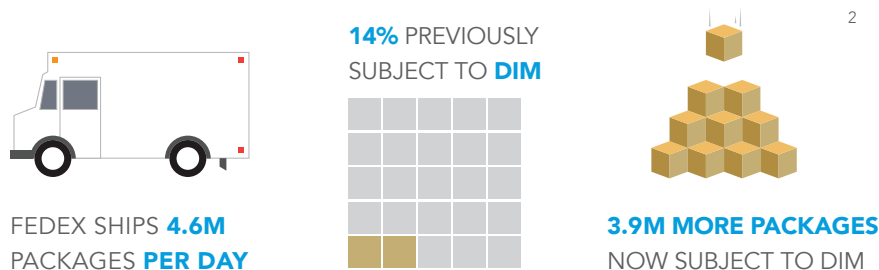
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# DIMENSIONAL WEIGHT: WHAT IT MEANS FOR SHIPPERS

## Anticipating the Impact

According to Internet Retailer, industry insiders predict that approximately one in three ground packages will sustain cost impacts from the shift to dimensional weight pricing.<sup>1</sup> Impact will be most significant amongst e-commerce companies and those who ship to residential consumers. An estimated 75 to 90 percent of e-commerce orders leverage ground shipping.



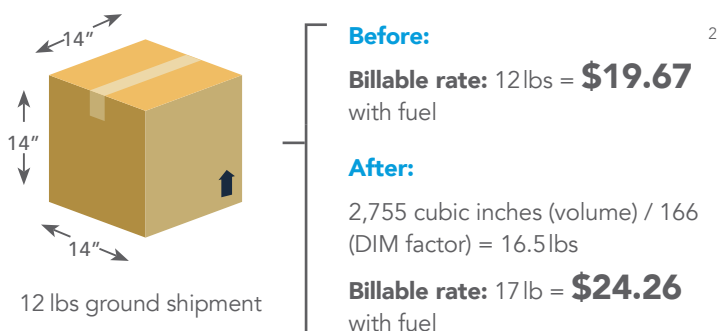
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## Quantifying the Cost

Industry experts agree that the net impact of DIM on ground shipping is significant. But just how much can shippers expect to be affected? According to the Wall Street Journal, retailers will see an average increase of 17 percent.<sup>3</sup> How? Consider the following example.



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In the dimensional weight world, shippers will no longer pay for 12 lbs of product in a 17 lb carton. Instead, they will pay for ground shipping like real estate – by load space occupied.

# Mitigating the Increases

For shippers, particularly those that are consumer facing, DIM poses a significant threat to profitability. Unless, of course, shippers can adapt. Shippers who are ambitious and flexible enough can transform DIM into an opportunity for shipping optimization and cost savings. Mitigate the impact of DIM and optimize ground shipping costs by leveraging the following best practices.

## ➤ LEVERAGE CARTONIZATION FOR COST EFFECTIVE PACKING

Cartonization logic software can evaluate the contents of each order to determine the optimized carton configuration prior to pick and pack. With cartonization software, you can select the smallest box size possible while keeping your products safe for shipping. Advanced cartonization logic cuts right to the heart of DIM, mitigating the additional charges and achieving true ground shipping optimization. But not all cartonization logic software is created equal; you'll need to find the right tool for the job.

## ➤ CONSIDER ALTERNATE CARRIERS

In immediate response to the shift to dimensional weight pricing at carriers like FedEx and UPS, many shippers are opting for alternative ground shipping partners like USPS, LTL carriers, and carriers with lower overall DIM factors. FedEx and UPS also offer hybrid services where they work in partnership with the USPS. These services are slower but they often avoid the negative impact of DIM. While this has the potential to mitigate impact in the near term, it is likely that these carriers too will ultimately extend dimensional weight pricing to include all ground shipments.

## ➤ RIGHT-SIZE BOXES

Historically, many shippers have opted for a simpler set of box and container sizes, resulting in a simplified pick and pack process. In response to DIM, shippers will need to shift their focus to right-sizing cartons to contents in order to optimize ground shipping cost. This may require a greater, more complicated selection of box sizes to choose from, which demands a more systematic approach to pick and pack operations. Other alternatives include multi-depth boxes that are pre-scored to enable right-sizing and 'box sizers', affordable tools that allow you to easily resize any standard box.

## ➤ TAKE A CLOSER LOOK AT DUNNAGE

Dunnage describes the material used to protect and cushion items. The reduction of dunnage may result in decreased carton sizes, but the removal of dunnage can leave items vulnerable to damage. Make sure to use the appropriate amount of dunnage, optimizing for product safety and lowest possible ground shipping cost.

The type of dunnage also has significant implications. Crumpled shipping paper can add substantial weight to the shipment. Meanwhile, lightweight styrofoam peanuts and particle-based dunnage have become less popular. Air pillows offer strong protection at very little weight. However, they can take up significant space.

## ➤ AUTOMATE DIMENSIONAL CALCULATIONS

Tools like dimensional scanners and calculators enable shippers to quickly and accurately record dimensions during manifesting to more effectively project ground shipping costs and prevent shipping charge corrections. While doing so mitigates fees and improves projections, it doesn't necessarily hedge the fundamental cost increases brought by DIM.

## ➤ NEGOTIATE BEST POSSIBLE DIMENSIONAL FACTORS

For large shippers, there is an opportunity to use your business to your advantage. If you currently have an established track record with FedEx or UPS, contact your representative and negotiate DIM factors for your business. Make sure to contact multiple alternate carriers and gather competitive rates.

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Advanced cartonization logic cuts right to the heart of DIM, mitigating the additional charges and achieving **true ground shipping optimization**.

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# SCT SOFTWARE: NAVIGATING THE NEW DIMENSION

## How can SCT help shippers reduce ground shipping costs in the new DIM shipping environment?

As an industry leader in logistics execution, SCT Software is leading the charge to mitigate the impact of DIM ground shipping by augmenting SAP® capabilities with best-of-breed services and software solutions. Learn how SCT helps shippers reduce costs below.

### ➤ RATE SHOPPING

SCT's solutions allow clients to automatically find the optimal carrier/service for shipping any given package. These solutions take into account approved carriers, required delivery dates, days in transit, freight charges etc. to determine the right carrier and mode for the most cost effective shipping option.

### ➤ INTEGRATE TO SCALES & DIMENSIONAL SCANNERS

You are taking steps to address dimensional weight, but now you are faced with the challenge of integrating new tools like scales and dimensional scanners into your existing operations. As experts in SAP Supply Chain Execution, we'll help integrate innovative DIM-focused tools into your existing SAP ecosystem, ensuring that you can navigate DIM ground shipping without missing a beat.

### ➤ CSO: OPTIMIZE PARCEL PACKING AND CARTONIZATION FOR SAP

As an advanced packaging and shipping optimization software, Carton Space Optimizer (CSO) evaluates the contents of each order to optimize carton configurations. Designed within SAP's ECC, EWM and TM environments, SCT CSO enables SAP clients to navigate new dimensional weight considerations while eliminating suboptimal packing configurations and significantly reducing packaging and ground shipping costs. CSO helps SAP customers navigate the new dimension, enabling them to do the following.

- **Ensure Cost Effective Packing of Cartons**

Mitigate reliance on guesswork or tribal knowledge and eliminate costly suboptimal configurations by streamlining the packing process and considering a host of factors to optimize configurations. CSO is the most comprehensive Cartonization solution for SAP; analyzing not only volume but also product dimensions, orientation within the package and weight to provide the most cost effective packing solution.

- **Automate the Process**

CSO considers multiple variables including business rules, carton sizes, inventory of packing materials, single axis part rotation, material characteristics and more to systematically make recommendations.

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- **Optimize Box Configurations**

Evaluate the full range of box sizes from the smallest to largest based on volume, individual dimension and fill-capacity consideration.

- **Make Efficient Your Use of Dunnage**

Configure product-specific dunnage and void-fill criteria, and make efficient use of this material while ensuring proper product protection.

- **Select the Most Cost Effective Carrier**

CSO is the only available cartonization solution for SAP® that compares freight charges from various packing proposals for preferred carriers, service and mode; a key area of functionality required to deliver true cost savings and efficiency.

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CSO is the most comprehensive Cartonization solution for SAP; analyzing not only volume but also product dimensions, orientation within the package and weight to provide the most accurate and cost effective packing proposal.

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## REFERENCES

1. "Dimensional weight pricing: are you prepared?", Internet Retailer®, 2014
2. "Plan Now for Big Dimensional Charge Increases Coming in January", Parcel, 2014
3. "UPS Plans 4.9% Average Price Increase in U.S., Canada", The Wall Street Journal, 2014

## About SCT Software

SCT Software is a leading provider of innovative logistics execution software servicing the SAP® user community. SCT software solutions are used globally by manufacturers and distributors to streamline the logistics process. Focused executively on complementing SAP® logistics capabilities, our solutions enable customers to leverage the investment in their SAP® landscape while providing best-of-breed functionality.

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