

Packaging + Shipping Efficiencies = Cost Savings: **On Demand Packaging™**



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Introduction

Research repeatedly shows that materials handling departments operate with an acute emphasis on controlling costs, developing process efficiencies, and improving service to their customers. One of the crucial functions for any manufacturing or distribution organization is the ability to pack and ship items in a highly efficient and resourceful manner. An operation's boxing and packaging process is an area where companies can effectively lower costs, improve customer satisfaction and sustain beneficial environmental practices.

Custom-sized, or On Demand Packaging™ is considered by users or those aware of this system as a technology that can help meet these objectives.

Through the use of custom-sized boxing, materials handling operations are experiencing time-saving and process efficiency gains and are recognizing actual or potential savings on freight, corrugated and packing filler, and labor costs. Many users claim to be improving throughput and reducing on-hand inventory.

A recent study conducted by **Peerless Research Group** on behalf of *Logistics Management* and *Modern Materials Handling* for Packsize International showed that businesses are stepping up their need to regulate packing and shipping costs, adopt environmentally responsible materials handling and logistics practices, and improve customer satisfaction as they brace for competitive challenges.

Key Materials Handling Considerations



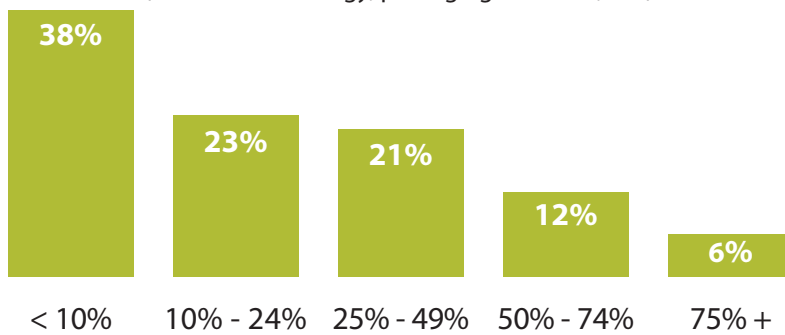
Costs and Assessment of Packaging and Shipping Operations

Of those we surveyed, more than four out of five (83%) respondents asserted that the packaging process is considered a highly important aspect of their materials handling operation. As evidence, companies invest heavily in this function.

And, one-fourth (26%) of a company's overall materials handling budget is spent on packaging solutions and materials used in packing shipments.

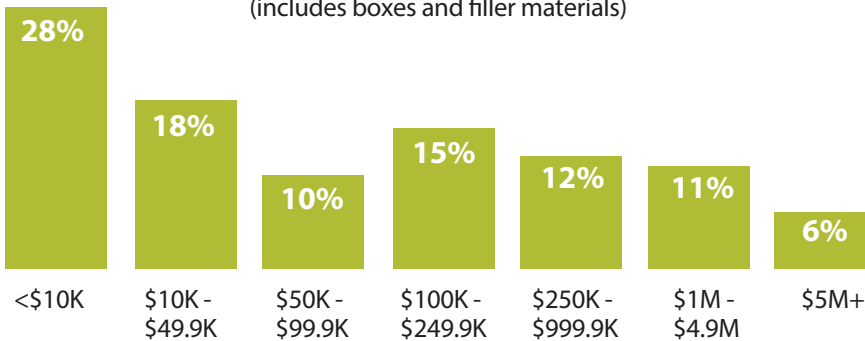
Percent of Materials Handling Budget Spent on Packaging Materials

(includes technology, packaging materials, etc.)



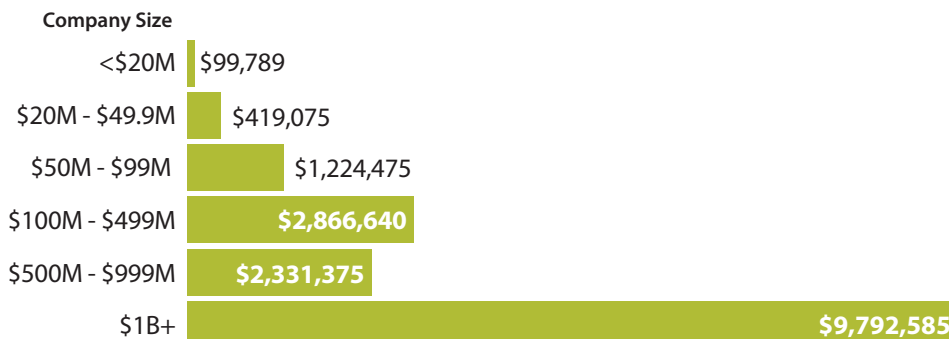
Amount Spent on Packaging Materials

(includes boxes and filler materials)



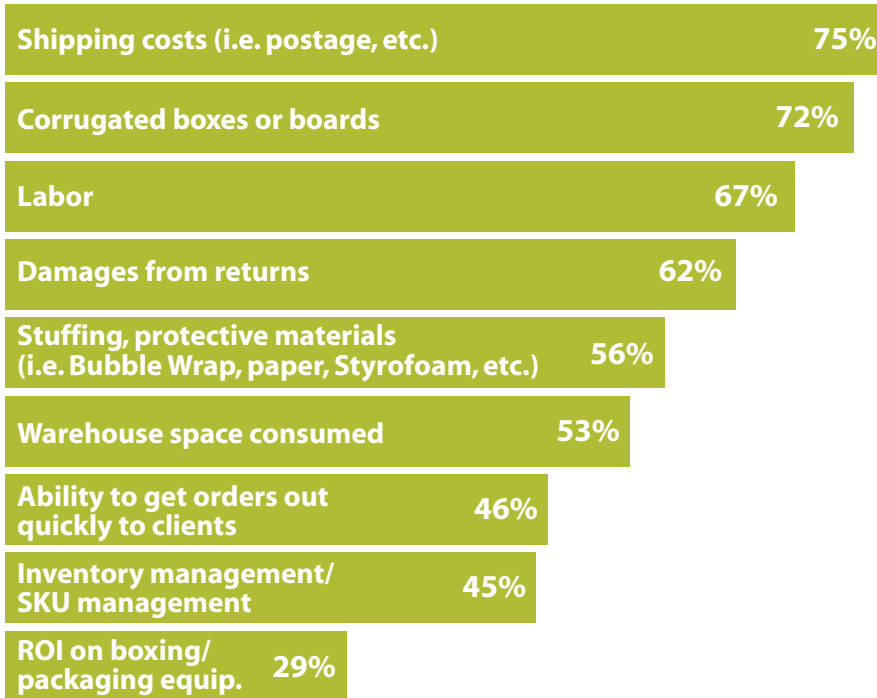
Average Amount Spent on Materials

(By company size: 2011 revenues)



As companies' packaging operations are a sizeable investment, approximately four out of five (79%) indicated they track costs associated with their current packaging operations. Specifically, companies said they were tracking postage fees, the costs for corrugated boards and boxes, labor associated with shipping processes, and damaged returns.

Aspects of Packaging/Shipping Function Being Measured



In addition, those who are not tracking the costs associated with their packaging operations believe these costs are accounted for under operational overhead or production budget line items. And yet, the results indicate that nearly one-half are not even thoroughly tracking these (overhead) costs.

“If it were possible to save money and time it would be in my company’s best interest to consider.”

**Warehouse Manager;
e-Commerce**

“My e-commerce business is growing and I need to continue to lower my costs.”

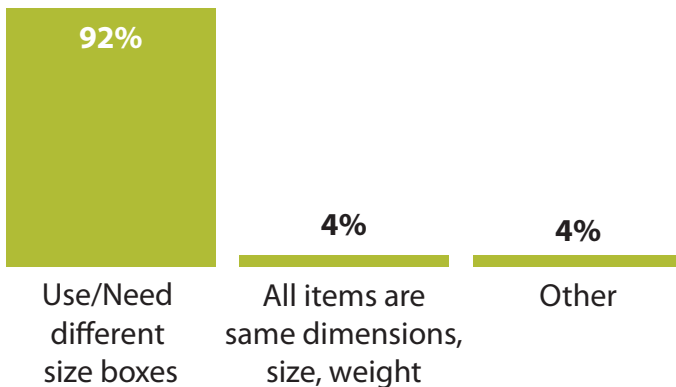
**Corporate Management;
e-Commerce**

Organizations' Packaging Operations

Nearly all (92%) of materials handling companies we surveyed use corrugated boxes for their shipments with most purchasing pre-made boxes (versus 6% who construct their boxes internally using a box-making system).

In addition, the large majority (92%) ship items of varying sizes that require an assortment of box sizes on hand for their shipments. Nearly two-thirds of these companies require between 6 and 10 different sized boxes, and one in ten respondents said they use more than 100 various sizes at their location.

Types of Boxes Needed

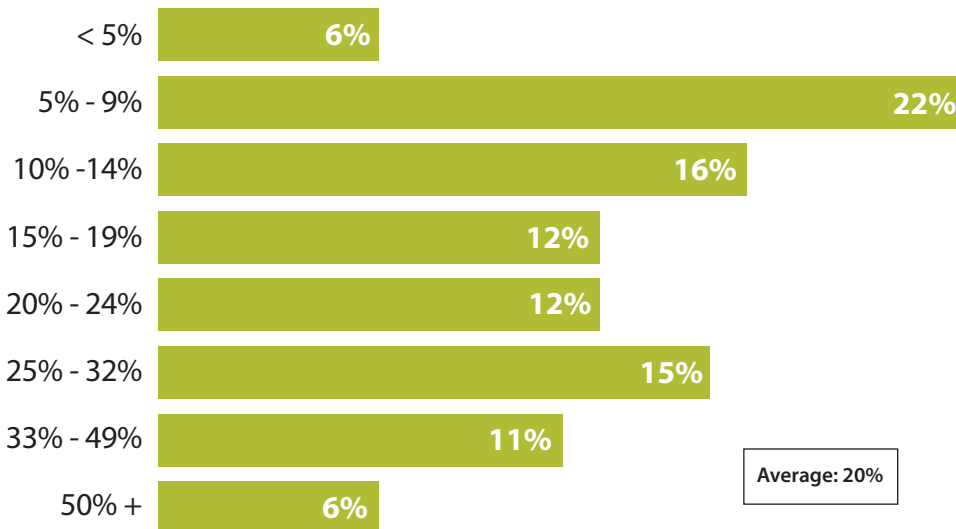


At their best guess, respondents estimate that, on average, 20% of each box or container shipped is made up of unused or vacuous space, or area not taken up by the actual item being shipped. As a result, dunnage material such as Bubble Wrap, air bags, kraft paper and Styrofoam is commonly used to secure and protect items during shipment.

"We are looking to minimize the wasted space within the boxes to ensure product integrity and eliminate "dead space."

Plant Management;
Distribution Center

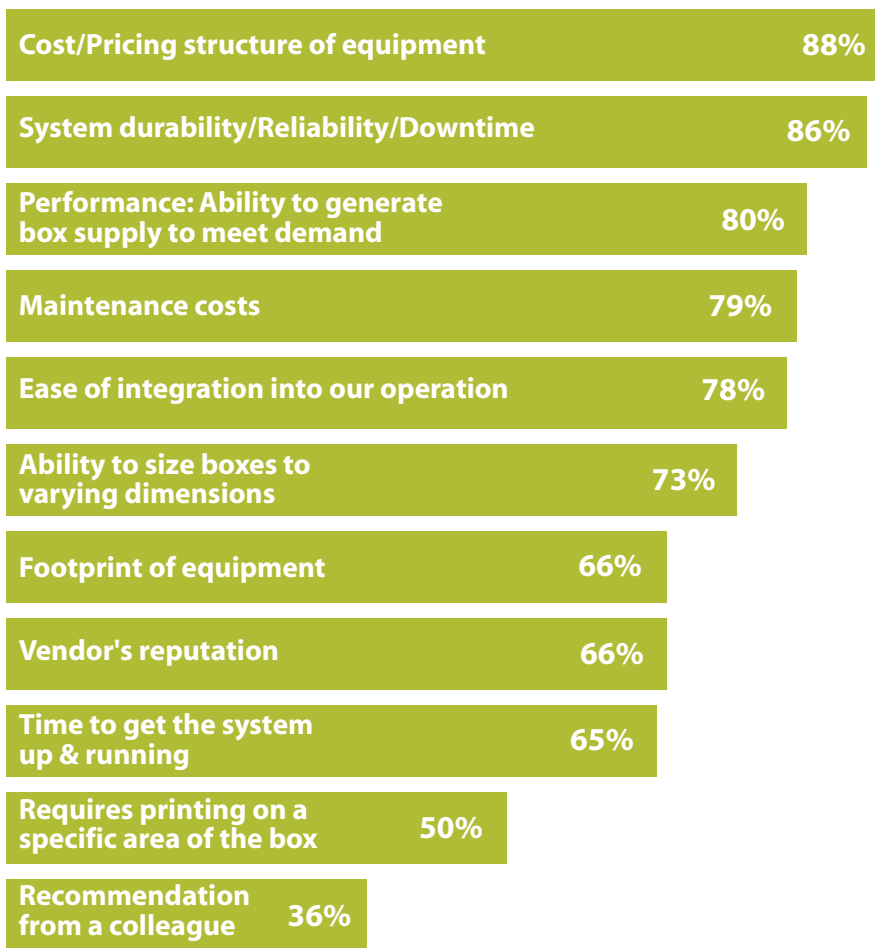
Percent of Unused Space Per Shipment



Factors Considered Important when Evaluating Box-Making Equipment

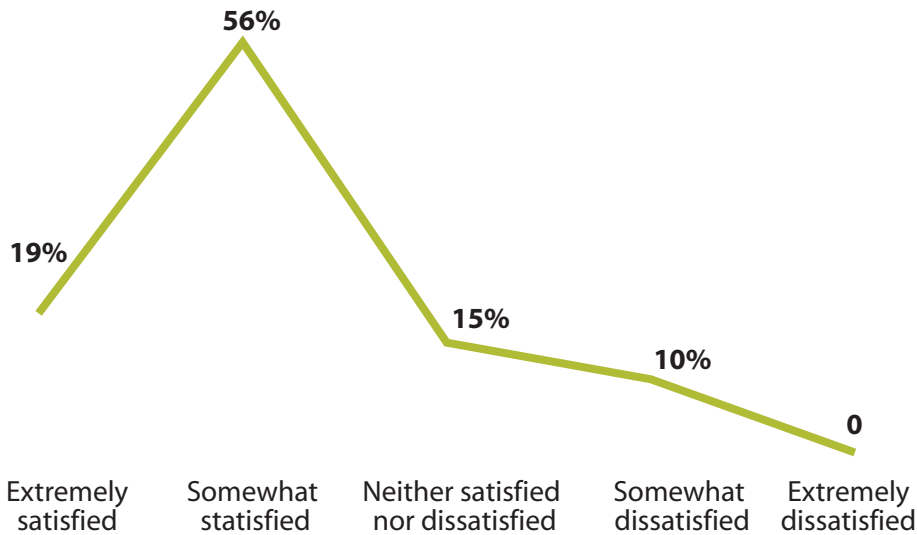
Cost, durability and flexibility are the key box-making characteristics considered the most important among materials handling and logistics managers. Evaluators of box-making systems are most interested in the price of the equipment as well as maintenance costs; system reliability and performance capacity; integration into the materials handling environment; and the ability to create boxes of different sizes.

Characteristics Considered Important when Evaluating Box-making Solutions



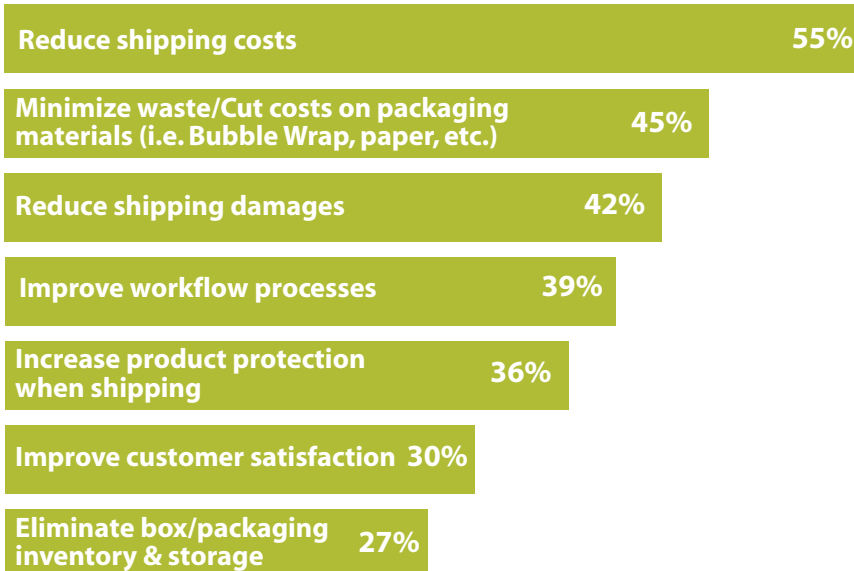
In general, the materials handling operations we surveyed are reasonably satisfied with their methods for packaging and shipping items. However, while roughly one out of five are highly satisfied with their current packaging practices, about 80% believe this function could be improved.

Level of Satisfaction with Current Shipping Procedures



However, many believe there's room for improvement and have identified critical aspects of their packaging operations that will drive product evaluations. As previously stated, solutions to help reduce costs, minimize waste and eliminate damaged shipments and improve process efficiencies are driving purchase decisions.

Aspects of Packaging Operations in Greatest Need of Improvement



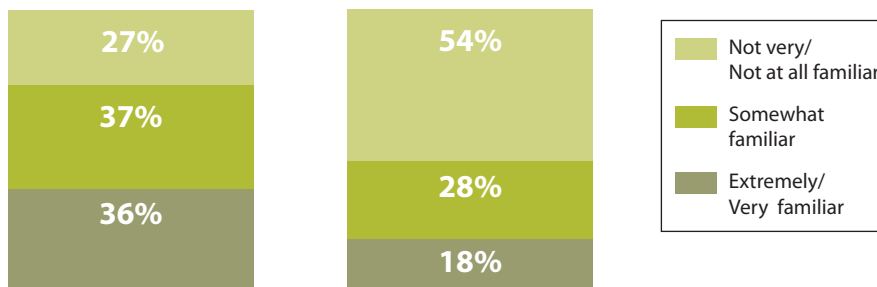
Understanding ‘Right-Sizing’ and On Demand Packaging Processes

So while organizations appreciably invest in their packaging and shipping operations, right-sizing and On Demand Packaging™ techniques are perceived as concepts and strategies to streamline processes and trim packing costs.

Slightly more than one out of three survey participants (36%) say they are highly familiar with the term ‘right-size’ packaging. Right-sized packaging was largely described as minimizing package ‘dead space’ to protect the item being shipped. This goal is achieved by using minimal protective packaging or designing the size of the box to fit the product or sizing the box to fit the dimensions to provide maximum in-transit protection.

The majority of those we surveyed are not very familiar with the term ‘on demand’ packaging. In fact, only a small percentage said they have even heard of On Demand Packaging™. Yet, the term, for most, needs little clarification. Many understand on demand packaging as the capability to custom-create a container to fit the item being shipped.

Familiarity with the Terms ‘Right-size’ and ‘On Demand’ Packaging



Right-size packaging On Demand Packaging™

Others offered a slight twist in describing on demand packaging. Some interpret on demand as readily available packaging or getting what you need when you need it. On demand packaging is also considered by some as the packing stage of the manufacturing process.

“Bringing in the quantity you need for a specific time period (days/ hours) instead of stocking and storing minimum-order quantities. It’s getting packaging material as needed rather than keeping a lot of it in inventory (overhead).”

**Engineering Management;
Automotive parts Manufacturing**

“It is extremely important to use the right type of packing. This will take care of it during shipment and also prevent in-transit damages. This will build good quality and improve our image. Products need good packing so customers don’t complain.”

**Vice President, GM;
Aerospace Manufacturing**

“On Demand Packaging™ produces the right-sized box exactly when you need it. It removes any worry associated with paying too much for box inventory, void filler, inefficient use of warehouse space, and many other packaging related problems. In essence, on demand packaging is the latest evolution in lean manufacturing.”

**Logistics/Distribution Manager;
Furniture Manufacturing**

“Boxes are sized at point of packaging. The cartons are made in house to an exact fit for the goods shipping in it.”

**Warehouse Manager;
Sporting Goods Manufacturing**

“It eliminates over-pack conditions and ships right from the shelf as needed. All packing is done as part of the assembly process.”

**Plant Management;
Fabricated metals
Manufacturing**

Impressions of an On Demand Packaging™ System

When asked about their awareness of a packaging system that can create a custom-sized box for every order, one out of three we surveyed said they have heard of this type of equipment. Lauded as being an effective solution, an On Demand Packaging™ system was seen to boost flexibility and efficiency in packing and shipping procedures.

However, while principally considered an interesting idea and viable concept, many feel they need more information specific to pricing and cost justification advantages, how the system would work with products of varying size, weight and fragility, or with orders that have multiple and differing SKUs, and whether the system is appropriate for certain materials handling environments. While others perceive on demand packaging to be a solid approach to shipment boxing, it introduces some operational challenges. Others felt the system may just not be right for them and may be more apt for high-volume shipping operations.

"It offers an efficient and cost-saving solution for packaging, which will minimize waste and damage, offer flexibility and simplicity, and create smart option in response to package size variations."

**Logistics Management;
Furniture Manufacturing**

"This sounds very good as all my products are not of the same size and type."

**Vice President, GM;
Paper & Film Manufacturing**

"If the pay-off for such an investment were within the first 2-3 years it would definitely be a space, time and cost saving option to evaluate."

**Traffic Manager;
e-Commerce**

"It sounds like a good concept, but probably not inexpensive! Cost would have to be balanced against benefits such as reduced shipping cost, reduced supply cost, etc."

**Logistics Management;
Industrial Distribution**

"It's a great idea, but too much money upfront and the return is too long. I have to question its ability to have a decent ROI."

**Engineering Management;
Building Materials
Manufacturing**

Benefits of an On Demand Packaging™ System

Residual benefits are recognized and attributed to on demand packaging applications. This system would upgrade overall packing and shipping operations by slashing costs on boxes and corrugated as well as packing materials and enabling greater use of warehouse space, thus eliminating waste.

Benefits of an On Demand Packaging System

Eliminates box/packaging inventory	60%
Reduces costs for corrugated	60%
Cuts costs on packaging materials (i.e. Bubble Wrap, paper, etc.)	60%
Will reduce waste	58%
Will help reduce on-hand inventory	48%
Can reduce overall shipping costs	45%
Minimizes damages due to shipping	44%
Improves customer satisfaction	39%
Will speed up productivity/ Improve throughput	34%
21%	Will improve ability to meet on-time shipping windows

"We have at least 20 different size shipping boxes that workers have to choose from. A significant amount of time could be saved if workers could just grab one box and mold it to the sizes needed, if the process of making the right-sized package is faster. It would also make keeping up with the different sizes much easier when ordering."

Operations Management; e-Commerce

"Key concerns are cost savings in terms of freight costs, packaging material costs such as fillers and hopefully lower unit costs due to lesser material to build a box. If such a design could incorporate designs that considers product protection, this will be ideal."

Corporate Management; Fabricated Metals

"If I could create custom boxes in my facility then I would be able to reduce my box inventory and perhaps save some money."

Supply Chain Management; Consumer Electronics

"It's a great idea, but I need it to generate containers quickly and integrate easily into my WMS."

Vice President, GM;
Windows & Doors Distribution

"For high yield it's great, it's not for the small business owner."

Corporate Management;
Paper Fulfillment

"It's a good concept, but it may not work in our environment. I would expect the learning curve for my employees who have trouble counting to keep me from going this route."

Logistics Management;
Plastics Fulfillment

"With multiple locations and multiple packing stations at each location as well as a very tight order cut-off schedule, this may not be a viable option for us."

Logistics Management;
Distribution

"This would be fantastic if this could come through. I foresee huge savings in terms of packaging materials especially "fillers" and shipping cost due to the elimination of empty space."

Corporate Management;
3PL

Methodology

This research was conducted by **Peerless Research Group** on behalf of *Logistics Management* and *Modern Materials Handling* magazines for Packsize International. This study was executed in April 2012, and was administered over the Internet among subscribers to *Logistics Management* and *Modern Materials Handling*.

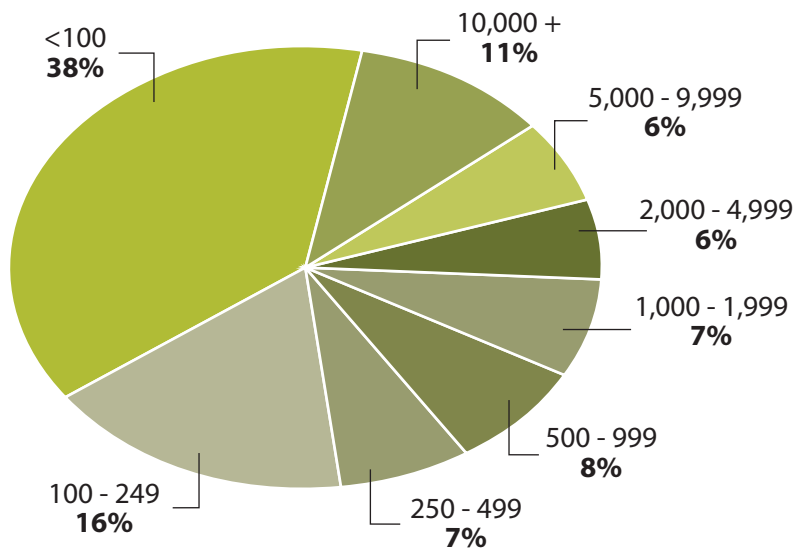
Respondents were qualified for being involved in decisions regarding the evaluation and purchase of shipment packaging materials, systems or technologies for their organization.

The findings are based on information collected among 521 top logistics and materials handling managers. Respondents are predominantly executive management (21%), logistics, distribution or operations management (16%), warehouse or plant management (19%), engineering management (13%) and operations (6%) and purchasing management (9%). About one-half (49%) work at locations that are manufacturing facilities while one out of three (34%) are employed in distribution, fulfillment or an e-commerce trade. Others are located at their corporate headquarters or are employed in R&D or engineering.

A range of production and manufacturing processes are employed at these facilities and were commonly described as either build-to-order, assemble to order, build-to-stock, batch, continuous process or lean.

On average, responding companies ship more than 2,000 packages daily from their location (average: 2,036/median: 221).

Number of Packages Shipped Daily



Company sizes represented in this study follow:

Company size: Revenues	% of respondents
< \$20 million	38%
\$20M - \$49.9M	13%
\$50M - \$99.9M	7%
\$100M - \$499.9M	15%
\$500M - \$999.9M	6%
\$1B - \$2.49B	9%
\$2.5B+	13%

About Packsize International LLC

Founded in 2002, Packsize International LLC is the world's leading provider of lean packaging systems for businesses with complex corrugated packaging needs. Packsize delivers an alternative to the existing corrugated supply chain with On Demand Packaging™ and was recently listed by *Forbes* as one of America's Most Promising Companies.

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