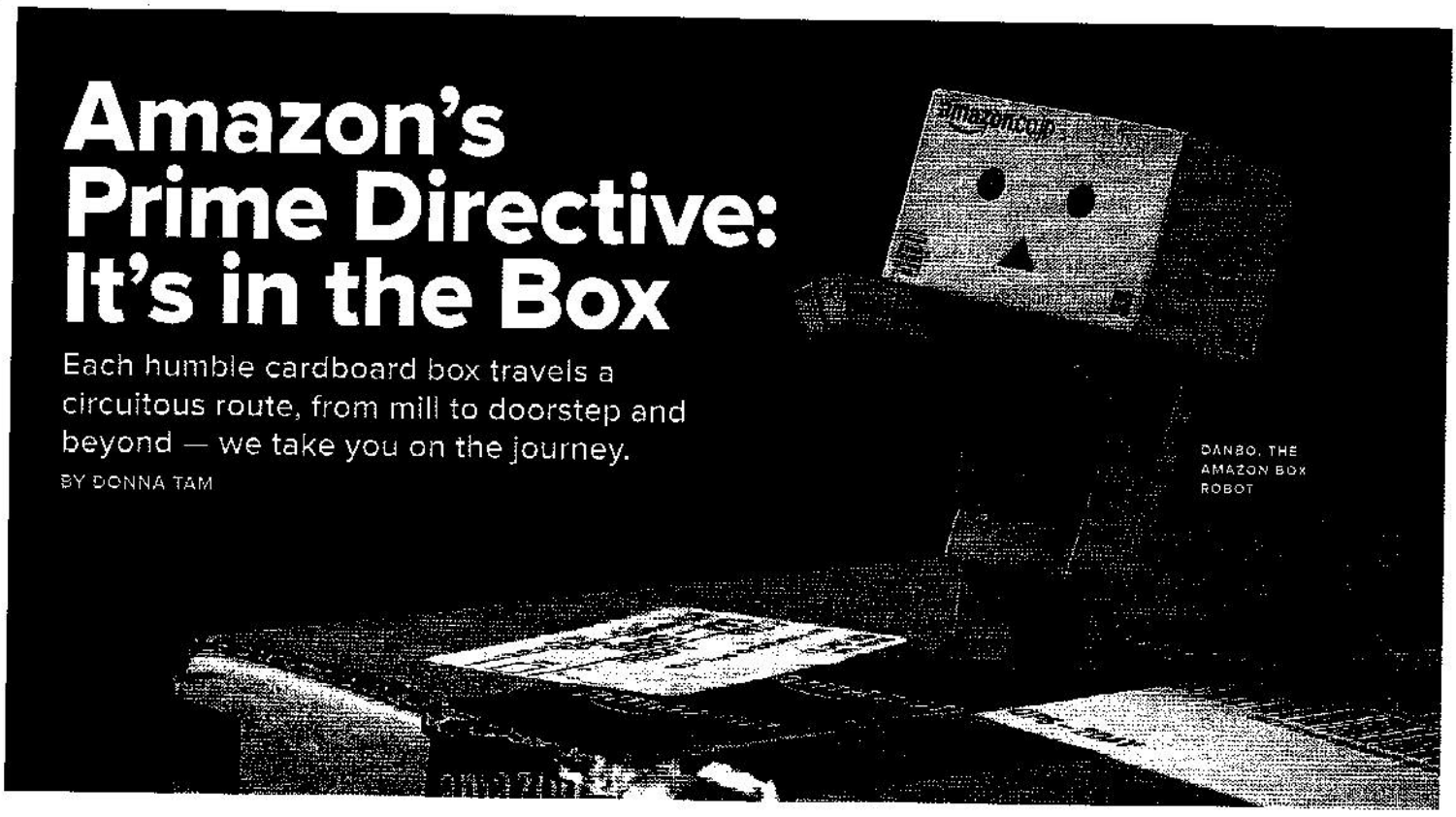
Amazon's Prime Directive: It's in the Box

Each humble cardboard box travels a circuitous route, from mill to doorstep and beyond — we take you on the journey.

BY DONNA TAM



DANBO, THE AMAZON BOX ROBOT

Danbo bears an uncanny resemblance to an Amazon shipping box. Based on a character from a Japanese graphic novel, the cardboard box robot has hundreds of thousands of Facebook fans, features prominently on Pinterest pages, and is the subject of more than 55,000 Flickr photos, including whimsical images showing the box creature embellished with Amazon's signature arrow.

While the standard Amazon shipping box may lack the whimsy of Danbo, its popularity and prominence in the gigantic e-commerce machine that is Amazon is no less impressive. The company has made a name for itself shipping brown boxes quickly, delivering items to our doors just days after online orders are placed.

Speed shopping

Members of the company's popular Prime service, which offers two-day shipping on more than 20 million items for $99 a year, get even more boxes than standard shoppers.

"It's too easy to order on mobile during the day when I remember that I need something," says San Francisco banker Michelle Peralta, a longtime Prime member who gets about two packages delivered to work each week. It's the convenience that keeps her buying more. "That reminds me — I need to buy something. I ran out of moisturizer this morning."

As online shopping has grown, so too has the amount of packaging wending its way from e-retailers to consumers. And no one is shipping more than Amazon.

More than 250 million online shoppers spent $48.8 billion on physical products at Amazon last year, up from $38.6 billion the year before. Prime customers, estimated at 25 million, are more likely to spend twice as much as non-Prime customers. That adds up to billions of boxes traveling around the world.

Like any paper product, Amazon's boxes go through a long process to make it to our doorsteps. Once tossed out, they are recycled and, eventually, made into another box.

Just what does it take to get those brown packages into the shipping cycle? Here's how an Amazon box makes the long journey into, and out of, your home.

Out of the woods

Where do those cardboard boxes come from? Trees, of course. Companies harvest trees for wood fibers that are eventually turned into packaging called corrugated cardboard boxes.

To figure out who made your particular Amazon shipping box, flip it over. Each box has a "box certificate" — a printed seal that lists its manufacturer. Amazon buys boxes from several makers.

There might also be a stamp from the Sustainable Forestry Initiative (SFI), which makes sure that 66 percent of the fibers used in each box comes from responsibly managed forests in the US and Canada. These are carefully managed forests, where new trees are planted to replace those cut down.

On average, about 20 percent of the 514.2 million acres of timberland in the US is certified by programs like SFI, according to the nonprofit. These are forests that can be harvested to create

JAMES MARTIN

wood products, including your Amazon shipping box.

Ready to fill

The most likely name you'll find is International Paper, the world's largest manufacturer of corrugated boxes. The Tennessee company is responsible for one in every three boxes in the world. (International Paper doesn't identify its customers, but its stamp is on the bottom of Amazon's boxes.)

Each paper manufacturer's operations are SFI-certified, too. After trees are cut down, the logs are sent to a paper mill, where wood fibers are turned into pulp and then paper. Rolls of paper are fed into a machine that forms them into corrugated sheets. The sheets are cut into cardboard box flats, ready for assembly.

Inside the machine

Once the flattened boxes arrive at Amazon fulfillment centers, they become an important part of a well-oiled processing network. The company has more than 40 centers in the US and 96 worldwide. The US facilities employ more than 40,000 full-time workers.

In footage from CBS' "60 Minutes," rows of shelves filled with products are seen within a 1.2 million-square-foot center (a space larger than 20 football fields). Amazon employees pick and pack boxes that travel through a series of conveyer belts, scanners, forklifts, and bright plastic bins.

60

The number of sizes of Amazon boxes – based on counts by company watchers (because Amazon won't tell)

When products are delivered to the facility, they're scanned and stocked on shelves, based on Amazon sorting algorithms. The algorithms determine how best to place items on the shelves based on size and shape. To get the goods to your door, employees pick and pack items. The boxes are then sorted into chutes, loaded onto trucks, and whisked away for delivery.

The process is even more hectic during the holidays. Cyber Monday, the Monday after Thanksgiving, was one of the biggest online shopping days of 2013, with customers from around the globe ordering more than 36.8 million items from Amazon. That translates to 426 items ordered per second.

Closing the loop

On Pier 96 in San Francisco, a 200,000-square-foot recycling plant run by waste management company Recology sits along the waterfront. When a San Francisco resident throws an Amazon box in a recycling bin, it ends up here.

By the 10th of December each year, there's a mound of recycling. But after Christmas 2013, the facility received more cardboard than Recology spokesman Robert Reed had seen in the 20 years he's been with the company.

Although the center doesn't track cardboard boxes by percentage, Reed saw an increase in shipping boxes for small to medium items — boxes sized to fit, say, a book or folded sweater. Amazon boxes are plainly visible, thanks to their arrow logo and branded packing tape.

For San Francisco, a city of about 843,000 people, Recycle Central processes 3,000 to 3,100 tons of cardboard on average. During the holiday season, that figure can jump approximately 20 percent.

Seems like a lot of cardboard, right? Now consider how much cardboard Americans use nationwide. People threw away 29.5 million tons of corrugated cardboard in 2012, according to the US Environmental Protection Agency.

The number of boxes discarded grew by nearly 23 percent between 1990 and 2012. Luckily, the popularity of recycling has grown faster during the same time frame, so less cardboard was dumped in landfills.

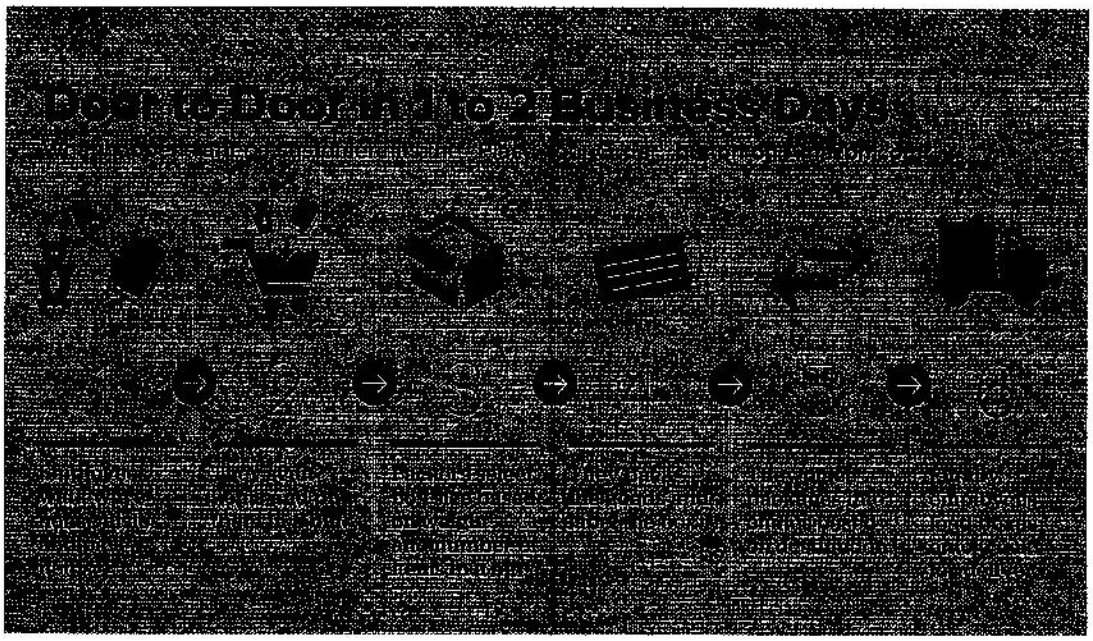
Back to the beginning

At the recycling plant, materials — which start out as a mix that includes cans, bottles, and paper products — are run through a sort deck. Eight to 10 people are on hand to separate the items.

Workers pluck out cardboard and drop it in a chute that leads to a baler, which compacts the cardboard into a large cube about 6 feet wide and 3.5 feet tall. The bales are put in shipping containers and sent off to paper mills, where many start new lives as more Amazon boxes.

For Amazon Prime customers, the arrival of a box at their door signals a successful customer service experience. Prime member Peralta thinks there's little Amazon needs to do to improve on the process, save one thing: She'd like the option to bundle items in one box if she doesn't need them right away.

"I do feel bad when it comes in a bunch of little boxes. It's wasteful," she says, before adding sheepishly, "but I still do it." ●



Donna Tam (@DonnaYTam), a San Francisco native, covers Amazon, e-commerce, and mobile payments for CNET.