Packaging for a new era of ecommerce

How ecommerce will transform the role of consumer packaging
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Digital shoppers drive packaging change

Is your packaging ready for the real world? Not the retail world, but the world of ecommerce—where the safety and optimal conditions of the shipping pallet are lost. Where your products bypass the store on their way to the front porch of your consumer. Today, CPGs are starting to get serious about packaging for ecommerce.

For decades, the CPG industry has revolved around traditional retail outlets where groceries and other merchandise are stacked on shelves, sold at the register and brought home by consumers. CPGs are “leaned out” to remove waste and cost from this retail model. Retailers like Walmart have flourished by eliminating the supply chain inefficiencies and capitalizing on economies of scale.

But the world is rapidly changing.

Consumer purchase patterns are shifting. Book, shoe and electronics stores alike have disappeared as the Internet replaced brick and mortar with digital environments customized to meet the needs of online shoppers. Many CPGs are not ready for this shift. In the digital environment, their cost structure and efficiencies of scale actually lead to higher costs and deliver poor ecommerce consumer experiences. They are built for scale, not flexibility.

The good news is that many forward-thinking CPGs are indeed making the conversion to digital. In this eBook, we examine how CPGs can adjust their operating model to ecommerce, and how to stay ahead of the curve by understanding the critical role packaging plays in this new digital world.

Profiting from primary

Currently, a great deal of industry discussion, research and optimization work centers around secondary packaging for ecommerce. This has been the focus of most retailers, and it is driven by a need to protect against deficiencies in the primary packaging.

Given the tremendous waste and inefficiency generated by these workarounds, retailers are increasingly looking to work with supply chain partners to improve the robustness and design of their primary packaging.

By investing in primary packaging formats that inherently use less secondary packaging—yet still offer total product containment and protection—it’s possible to reduce shipping costs, prevent damage and increase overall profit margins.
Ecommerce explodes

In the U.S., ecommerce continues to grow at a dramatic pace, putting pressure on traditional retail. In 2015, this channel grew 14.6% while total retail sales overall grew only 1.5% according to the U.S. Department of Commerce.

Even beyond these dramatic headline numbers, something interesting is happening: Sales of consumer packaged goods, long confined to traditional retail channels, are exploding online, with growth rates, in many cases, in excess of 50% YOY.

While online sales account for 3% of the $795B CPG market, a projected four-year CAGR of 18% means that nearly half the growth the industry will experience through 2020 will come through digital.

Source: BCG, BI Intelligence, Kantar, Morgan Stanley, Amcor Analysis

Estimated CPG industry growth 2016–2020

Source: BCG, BI Intelligence, Kantar, Morgan Stanley, Amcor Analysis
Top CPG categories ecommerce growth

Laundry detergent 85%
Toothpaste 75%
Health snack bars 74%
Deodorant 71%
Adult nutrition 68%
Baby wipes 68%
Protein powder 66%
Bottled water 63%
Mouthwash 63%
Baby diapers 61%
Beauty primer 60%

(U.S., year-over-year)

Source: 1010data.com Datasets for Ecom Insights 01/01/15 - 12/31/15
Enter the millennials

A big reason for this optimism is the generational shift in grocery shoppers. Millennials—those born between 1979 and 1995—have surpassed baby boomers as the largest generation. They are digital natives, savvy consumers and are moving into their own homes and starting families. In the next few years, these millennials will be at the stage in their lives where grocery spending peaks, and much of this spending will take place online.

Online grocery shopping is becoming more and more popular. In fact, 41% of shoppers have tried it and Amazon has invested heavily to capitalize on this trend. The online retailer is poised to join Walmart as a top ten grocery store by 2019.

Sales of certain household products—laundry detergent, toothpaste, health/snack bars, deodorant, just to name a few—are already skyrocketing.

There are a few reasons these types of products are so popular as ecommerce purchases:

- **Long shelf life**—Products like detergent and mouthwash can be shipped ambient, so there’s no risk of spoilage or quality degradation based on ship times.
- **Value density**—The cost of shipping and handling is driven by the weight and volume of the product. For example, cat litter is an expensive item to ship, but not an overall expensive item to purchase.
- **Regularity of purchase**—Online shopping is ideal for products that are used on a frequent basis. No more running to the convenience store because you’re out of toothpaste or deodorant.

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### Millennials have buying power

Average annual spending on food at home by age

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Average Annual Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25</td>
<td>$2,602</td>
</tr>
<tr>
<td>25-34</td>
<td>$3,559</td>
</tr>
<tr>
<td>35-44</td>
<td>$4,641</td>
</tr>
<tr>
<td>45-54</td>
<td>$4,701</td>
</tr>
<tr>
<td>55-64</td>
<td>$4,232</td>
</tr>
<tr>
<td>65-74</td>
<td>$3,728</td>
</tr>
<tr>
<td>&gt;75</td>
<td>$2,825</td>
</tr>
</tbody>
</table>

Types of grocery ecommerce

There is no “one-size-fits-all” model for selling consumer packaged goods online. In fact, new start-ups and industry stalwarts like Amazon and Walmart are driving tremendous business model innovation in the retail space and participate in more than one method. The economics and distribution requirements of each model have different demands on primary packaging, with the ‘delivered basket’ model being both the largest and most challenging model from the perspective of demands on the package and product. Delivered basket is the focus of our research.

Source: Amcor Analysis

### Delivered basket
Consumers assemble their items in an online shopping cart for delivery later. Primary packaging for this channel must incorporate features able to withstand the rigors of cross-country shipping.
- Amazon
- Target
- Walmart
- Jet.com
- PetSmart
- Petco

### Click & collect
Consumers pre-select their items online and then visit the retail store to pick up the assembled package. Traditional primary packaging is acceptable as consumers provide transportation from store to home.
- Kroger
- Lunds & Byerlys
- Target
- Walgreens
- Walmart
- Woodmans

### Fresh delivery
Consumers place an online order which is fulfilled and delivered by the merchant usually within 24 hours. Primary packaging is not typically a concern due to the local, safe transportation.
- Amazon Fresh
- Fresh Direct
- Peapod
- Prime Now
- Safeway
- Whole Foods

### Meal kit
Consumers order their favorite meal ingredients online for final assembly at home. These kits are typically made to order, utilizing secondary packaging elements (dry ice, air pillows, corrugated) to preserve and protect the contents.
- Blue Apron
- Chef’d
- Hello Fresh
- Home Chef
- Munchery
- Peach Dish

Source: Amcor Analysis
How does your category fit?

Not every product or category is in the same position. Certain categories are a great fit for ecommerce. They ‘work’ economically and do not have temperature or preservation requirements that demand a cold chain. They fit with what consumers are looking to purchase online.

In the same vein, certain categories already have packaging that works perfectly well in ecommerce, so primary packaging innovation is not important. The products survive well today, do not require special handling, and are effectively already optimized. A company’s strategy should depend on the size of the prize (fit for delivered box ecommerce), and the amount of primary packaging change that is required to break through.

We have developed a proprietary quantitative and qualitative screen that evaluates 24 representative categories on these two dimensions. The scale, from 0-100, illustrates results on a relative basis and combines multiple dimensions for an overall score (see chart, next page).

### Fit for delivered box ecommerce

<table>
<thead>
<tr>
<th>Fit for delivered box ecommerce</th>
<th>Degree of packaging change required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping economics</td>
<td>Repackaging requirements</td>
</tr>
<tr>
<td>Relative cost of ecommerce distribution compared to the product’s value</td>
<td>Whether retailers today take an extra step to add additional protective packaging to product before shipment</td>
</tr>
<tr>
<td>Shelf life</td>
<td>Survivorship</td>
</tr>
<tr>
<td>Ability to survive ambient distribution over an extended time period</td>
<td>Results of comprehensive testing on primary packaging durability</td>
</tr>
<tr>
<td>Shipping economics</td>
<td>Fit with subscription</td>
</tr>
<tr>
<td>Relative cost of ecommerce distribution compared to the product’s value</td>
<td>Degree to which a product is consumed at a predictable pattern and is not needed immediately when it runs out</td>
</tr>
<tr>
<td>Design upside</td>
<td></td>
</tr>
<tr>
<td>Assessment of significant consumer value is sacrificed in incumbent retail designs</td>
<td></td>
</tr>
</tbody>
</table>
A call to action

Unleash commercial activity
Typical packaging formats generally perform. Commercial development should drive growth.

Unlock packaging for growth
Categories are poised for growth, but constrained by existing packaging formats. Packaging innovation will be critical to realize potential.

Fit for alternative distribution chains
Shelf life needs demand refrigeration or expensive secondary packaging. Better fit for fresh delivery and click & collect.

Fit for delivered box ecommerce

Degree of packaging change required

- 10 20 30 40 50 60 70 80 90 100

Meat & cheese
Milk
Chocolate
Fresh produce

Bleach & cleaner
Detergent
Cereal

Dry foods
Soft drinks
Condiments

Canned vegetables

Pet food

Shampoo

Towel/tissue

Toothpaste

Pet treats

Nuts & seeds

Razors

Litter

Protein powder

Diapers

Seasonings

Canned vegetables

Detergent

Cereal

Dry foods

Soft drinks

Condiments

Pet food

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Fit for delivered box ecommerce
A challenging new world for CPGs

From insurance to taxis, traditional business models have been disrupted through new digital routes to market. As CPGs continue to add online customers, they too face some fundamental challenges to how they do business.

Higher cost—The economics of getting groceries to a person’s house by means of an ecommerce distribution chain are far more challenging than a traditional retail chain. Gone is the free labor of the person who shops the aisles, picks the products, scans and pays, bags and brings the groceries home. Instead, there is consolidated picking, last mile distribution and a lot more corrugate. By our estimate, these additional costs can eat up well over 50% of the system-wide (manufacturer + retailer) profit pool on a typical $10 basket. Stated simply, it can be difficult for manufacturers and retailers alike to make much money in today’s environment.

Focus on “eaches”—Most packaging engineers design their products to survive to market in cases: 6-, 12- or 24-count of products all perfectly aligned, stacked, and boxed; ready to make their way to the shelf. In the ecommerce environment, the single unit of product, an “each,” becomes the primary item in transit much sooner in the distribution process. From there, things can get unpredictable:

» Items can be boxed with other products that are heavy, awkwardly shaped, sharp, etc. You simply do not know what else will go in that box

» Items that were designed to be shipped in one direction (such as detergent standing up) now face a high probability of being turned upside down, shipped on their side, rotated and shaken

New distribution chain models—The new distribution chain for ecommerce bears little resemblance to the manufacturer-to-distributor-to-retailer model that has existed for decades. Today, this model includes more touchpoints, more risk of product damage or failure, and more cost across the entire chain.

Test time
CPGs have traditionally conducted safe-transit testing on product pallets for the retail environment. Today, a test standard takes these tests further.

ISTA-3A is a general simulation performance test for packaged products weighing less than 150 lbs. In other words, this is the test for ecommerce shipments consisting of multiple products. It is critical that CPGs interested in ecommerce understand the ISTA-3A standard as a guide and design primary packaging accordingly.

What is ISTA-3A?
1. Packages containing multiple products are subjected to nine drop tests on different faces and from varying heights.

2. Vibration testing simulates typical transit conditions.

3. Packages undergo eight additional drop tests on different faces and from varying heights.

Find more information at www.ista.org
Distribution chain(ge)s

Brick & mortar retail distribution chain
How your product travels to a retail location.

1. Product safely in cases, on pallets
2. Travels by truck to DC
3. Ships safely from DC to local store
4. Off pallet, out of case, on the shelf

With a distribution chain that can have almost three times as many ‘touches,’ it’s easy to see how ecommerce providers assume additional risk of product damage.

Ecommerce distribution chain
How your product travels directly to a consumer.

1. Product safely in cases, on pallets
2. Travels by truck to ecommerce DC
3. Off pallet, out of case and into inventory at DC
4. Additional handling and prep for secure shipping — tape, shrink wrap, bag, etc.
5. Order fulfillment — repacked as a singular item or placed into loose multi-item box for direct shipment
6. Travels by truck or plane to DC (FedEx, UPS, USPS)
7. Arrival at DC for sorting
8. Travels by truck to local DC
9. Arrival at local DC for sorting
10. Out for delivery
11. Delivered to your porch
Brand risk

Consumers react to negative shipping experiences. See how negative comments impact your brand on page 14.

Pasta was wet, cause—a packing problem.

During transit, liquid leaked all over the bottles. Blue dye bleeds and labels fall apart. Common issue, read other reviews, do not buy.

My dog loves this food, unfortunately, Amazon keeps shipping us dented cans. This picture is 2 of the worst ones that I will have to throw away.

Source: Actual customer reviews Amazon.com
Brand risk cont.

Very disappointed. Baby food came with broken and half-filled bottles.

I’m sure it’s a great product—I would try to replace it, I just really don’t have the time.

One of the bottles had completely leaked in the box! And the other bottles had loose caps.

Source: Actual customer reviews Amazon.com
## Impact of negative consumer shipping experience

How is your business affected when a shipment is lost, delayed or arrives damaged?

<table>
<thead>
<tr>
<th>Negative impact on brand image</th>
<th>41%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced customer loyalty</td>
<td>39%</td>
</tr>
<tr>
<td>Increased cost of returns</td>
<td>36%</td>
</tr>
<tr>
<td>Increased logistics costs</td>
<td>29%</td>
</tr>
<tr>
<td>Increased calls to call center</td>
<td>28%</td>
</tr>
<tr>
<td>Increased email traffic</td>
<td>23%</td>
</tr>
<tr>
<td>Poor public relations</td>
<td>22%</td>
</tr>
<tr>
<td>Adverse comments on social medias</td>
<td>16%</td>
</tr>
</tbody>
</table>

Source: State of Shipping in Commerce 2016 US T emando
Is your product at risk?

To better understand the performance of typical CPG packaging in the ecommerce supply chain, Amcor conducted comprehensive tests on common consumer products in line with the industry standard ISTA 3A methodology. The results present a major challenge. Of the 170 products tested across 34 categories, only 53 items survived testing. That’s a failure rate of nearly 70%. Here are the high-level results.

The following categories present high risk when shipping to consumers:

- Cereal and dry goods
- Shampoo
- Detergent
- Chips
- Wipes
- Oils, condiments, dressings
- Soda
- Bleach
- Household cleaner

The following categories present low risk when shipping to consumers:

- Soups in hard plastic containers
- Soups in pouches
- Baby food in pouches
- Paper towels
- Toilet paper
- Plastic pet food bags
Four ways to think differently about ecommerce packaging

While ecommerce poses key challenges to manufacturers optimized for traditional retail channels, it is possible to realign and succeed in today’s online environment. Here are four ways CPGs can attack the future—starting with their packaging.
Fix package formats that fail and drive cost into the system

As companies pivot toward ecommerce, decision-makers must keep an open mind to change. For example, rigid or glass formats that may work well for store shelves could be prone to damage when shipped cross-country to a consumer’s home.

Laundry detergent in large, rigid, hard plastic jugs can suffer damaged spouts, depleting the detergent and ruining the entire shipment in the process.

Many forward-looking CPGs are exploring alternatives to rigid—for example, flexible pouches that are easier to ship, offer a lower total packaged cost and optimize the product-to-package ratio.

Fix formats, cut costs

Many conventional packaging formats, designed for traditional retail, fail to survive in the ecommerce distribution chain.

Here are some of the most common failure points:

- Threaded caps come loose and leak liquids due to vibration
- Caps crack or shatter
- Cans dent
- Glass shatters
- Trigger sprayers/nozzles compress and force out liquid
- Pumps break
- Holes caused by vibration result in loss of vacuum or leakage
- Paper punctures cause leakage
- Plastic soda ring holders stretch, fail and cause cans to come loose
- Jars lose their seals and allow air to spoil product
Consider innovation in primary packaging

<table>
<thead>
<tr>
<th>Product</th>
<th>Fail</th>
<th>Semi-rigid container with lid</th>
<th>Pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby food</td>
<td>Glass jar</td>
<td></td>
<td>Fitment standup pouch</td>
</tr>
<tr>
<td>Soup</td>
<td>Can</td>
<td>Tetra box</td>
<td>Standup pouch (tear open)</td>
</tr>
<tr>
<td>Pet food</td>
<td>Paper bag</td>
<td></td>
<td>Plastic flat-bottom bag</td>
</tr>
<tr>
<td>Detergent</td>
<td>Rigid bottle</td>
<td></td>
<td>Fitment standup Pouch</td>
</tr>
</tbody>
</table>

Source: State of Shipping in Commerce 2016 US Temando
Optimize for consumers, not the retail shelf

Online, CPGs don’t buy shelf space. They invest in “virtual shelf” opportunities. So instead of limiting the number of SKUs for retail, the emphasis is on SKUs that work best for ecommerce. It’s time to think less about the brick and mortar retail environment and more about the consumer.

Delighting the consumer

On the retail shelf, bigger equals better. Headspace in cereal boxes, for example, doesn’t matter as long as the boxes optimize the shelf space, provide a stackable form factor and plenty of vibrant branding. In ecommerce, that same air is your enemy. It costs you and your retail partners additional money to ship, and adds no value. Ecommerce unshackles you from the constraints of the shelf. Not only can you design for shipping survivability and efficiency, but you can optimize the consumer experience. You can think outside of the traditional box. You can design more effective open/close functionality or handles for easier pouring. Add visual indicators (windows) to aid in replenishment. Design both horizontal and vertical graphics to help consumers better identify the package in their own kitchen cabinets. And ensure no cereal is left behind between the liner and the box.

In addition, packaging formats can be created that ship easier and resist the damage and spillage that could happen in transit. So consumers receive their products safely and without incident.

It’s time to think less about the brick and mortar retail environment and more about the consumer.
One product, two perspectives

Cereal is a great example of what is possible with innovative package design when the constraints of the retail shelf are relaxed.

Retail focused

- Optimized brand blocking
- Ideal size for retail shelf placement
- Unit price points (price per ounce) across SKUs can be obscured since boxes are relatively the same size
- Overall ease of merchandising/stocking
- Lacks effective close & reclose
- Contents easily spill in box
- No visual indicator for replenishment
- Bulky on consumer pantry shelf

Consumer focused

Vertical stand-up pouch

- In-package air handle for easy dispensing
- Easy open, easy pour
- ½ zip reclose for simple access & freshness
- Clear window for consumers to see quality of product and when to replenish it

Horizontal compact cube

- Compact cube format more efficient for shipping (“less air”)
- Provides multiple storage options via portrait or landscape orientations
- Improved adaptation to varying storage areas in the home (i.e. drawer vs. tall shelving vs. short shelving)

Source: Bemis Company 2016
Most CPG manufacturers have clear and well-defined criteria for the volume and profit hurdles necessary to create a new SKU. Many have gone through the hard work of cleaning up their product/SKU portfolio to gain manufacturing efficiencies and drive scale. The emerging opportunity in e-commerce likely intersects these business 'rules of thumb' head on. Here are several reasons you may want to consider investing in new SKUs to specifically target this channel:

**Package format**

As discussed earlier, most current formats of packaging are failing in e-commerce distribution. To win in this space, consider developing channel-specific extensions that are uniquely designed for durability and consumer functionality. While there will be supply chain implications, given the relative size of e-commerce to traditional retail today, you may be able to focus the filling and fulfillment with a specific asset or through a particular co-packer.

**Subscription**

For goods with a reasonably predictable usage cadence (diapers, for instance), consider setting quantities to align with a month’s consumption. Being able to sync with your consumer’s usage—allowing them to easily ‘subscribe’ to your product’s delivery—will allow you to lock in what is likely to be your most profitable type of customer.

**Price thresholds**

Online, manufacturers will typically have less control over retail price (particularly with Amazon). That does not mean that price/pack architecture is irrelevant, however. Key price points matter in online retail just as they do in traditional. However, the role is different. While ‘magic numbers’ of key volume thresholds still exist, manufacturers must also consider shipping economics when thinking through price/pack architecture for digital. You will want to have enough product to hit a price point that contributes meaningfully to getting the basket over a critical shipping hurdle for the consumer - but not too high that it unduly deters purchase.

**Product comparison**

With many retailers today demanding their own unique SKUs to obscure price comparison, you should consider how e-commerce fits in to your holistic strategy of managing your price curve. You may benefit (and limit negative repercussions with major channel partners) by developing sizes and SKUs that are unique to digital.
Focus on flexibility

Scale has brought unique benefits to growing with major retailers like Walmart, Kroger and Costco. In this environment, it may be flexibility that wins the day. This is not to say that manufacturers abandon the path of aggressively driving down cost, but rather that they may be able to achieve lower overall cost by approaching this channel specifically in a more flexible, agile manner.

» Consider the requirements of serving e-commerce through the fragmented and ever-changing business models. Winning companies will:

» Design channel-specific and potentially e-retailer-specific SKUs

» Be able to support different e-retailers that have different go-to-market models and distribution chains

» Package product with robust primary packaging (which could be bulkier or more expensive) to reduce the amount of secondary packaging used and remove steps from the process

» Develop formats that allow them to entirely bypass secondary packaging/excess corrugate with “ship-in-own-container” (SIOC) packaging

» Create a nimble supply chain that enables them to ship directly from their own warehouse, avoiding multiple distribution steps

The potential methods of leaning out this supply chain are multiple and ever changing. In this environment, going to market is quite different and will require breaking out of traditional mindsets and processes.

But the rewards are significant. First movers will be able to move higher in recommendation rankings, attract more reviews, lock in subscribers, and develop service depth in this channel that will put them at a long-term cost advantage.
Together we can create packaging that wins in ecommerce

Looking for ways to leverage the potential of ecommerce? Amcor offers more than packaging. We have the market insights, R&D strength and creative ideas that can help you successfully move from virtual shelf to front porch. We can also assist you in ISTA-3A simulation performance testing for your existing packaging to learn where you currently stand and how you can make improvements. Take the next steps today:

1. Tap into technology and expertise to reduce risk and drive growth. Work with specialists who can help you optimize packaging for ecommerce distribution and help deliver growth. We have the tools to facilitate collaboration, ideation, rapid prototyping, consumer and package testing.

2. Leverage insights from our work with key ecommerce players. As an industry leader, Amcor works with leading ecommerce retailers to evaluate packaging that is ready to survive the rigors of this distribution channel. Let’s collaborate to fix what fails and drive cost out of the system.

3. Accelerate your speed to market. Talk to a Amcor packaging expert to apply our ecommerce insights to your toughest challenges and quickly move from concept to commercialization.

Amcor is here to help—contact us today!