E-COMMERCE MARKET ASSESSMENT

EXECUTIVE SUMMARY 2015

11911 Freedom Drive | Suite 600 | Reston, VA 20190 USA

The findings of interviews with key decision makers regarding challenges, solutions, changes, and trends in e-commerce.
This study examines the e-commerce market in the United States (US) on a macro and micro level from the perspective of 55 key decision makers, 50% of whom are end-user manufacturers, 20% are retailers, 20% subject matter experts on packaging, and 10% from the logistics industry.

E-commerce has grown considerably in the US, and will continue to do so in the years to come. E-commerce is a highly competitive market that places considerable demand on its retailers and manufacturers to produce high-quality products at a reasonable price that in turn must be delivered to the end-user via the logistics industry or postal service in excellent condition and with packaging that is generally representative of the manufacturer or retailer’s brand.

The cost and challenges involved in achieving these objectives require considerable planning and engineering from product inception to ultimate delivery.

The following is an executive summary of the report findings and actionable insights based on interviews and analysis.
Attitudes and Behaviors: Packaging Machinery Decision Makers, Sales/Marketing Directors, CPGs

Top Concerns & Solutions

The top concerns about e-commerce packaging, both secondary and tertiary, are largely indicative of an overall concern about seamlessly delivering a product to the end-user that is in good condition, a reflection of the brand, and cost-effective overall.

- Durability
  - Logistics Consulting
  - Upfront Engineering
  - Effective Service Level Agreements (SLAs)

- Rightsizing
  - Effective Use of Warehouse Management Systems

- Package Marketing
  - Blast Media Marketing
  - Low-Profile Branding Through Colors and Logos

- Disconnect with 3rd Party Retailers
  - Constant Communication

Concerned About Sales & Profit

Of the key decision makers interviewed, 62% were concerned about sales and profit, 23% were not, and 15% had a neutral opinion.

Many of the concerns reflected the highly competitive nature of pricing the e-commerce space. Alternatively, some viewed the added expenses as an investment in the lifetime value of the customer.
Challenges From Machinery Providers, Unmet Needs & Expectations

Key decision makers expressed a number of company- and industry-specific concerns regarding their interaction with machinery providers, such as higher quality graphics and increased line speed. The overall takeaway from this data is:

- The need for machinery providers to function in a partnership capacity with their customers in order to more accurately hear their concerns and make sure that the equipment provided is meeting the manufacturing needs.

Differentiating E-Commerce Segments

Some manufacturers and online retailers have adopted practices, largely around their packaging, that differentiate them from the industry. While there is considerable variation in these practices, the differentiation comes down to several key traits:

1. **Sustainability**: Using recycled material.
2. **Aesthetically-Pleasing Packaging**: Packaging that is visually appealing.
3. **Corporate Social Responsibility**: Knowing that your purchase advanced a larger cause.
4. **Personalized Packaging**: Enclosing a note from the employee who fulfilled the order.
Largest Mistakes Made in E-Commerce Packaging

Mistakes indicated by key decision makers reveal company-specific flaws at specific stages of the overall supply chain. Examples include:

- Overpacking
- Underestimated Time
- Low Quality Materials

The overall takeaway from these insights is that mistakes made in e-commerce packaging are reflective of executing a particular step in the process without taking the upstream or downstream steps and requirements into consideration. When the supply chain is viewed outside of its continuum, the components will not correspond.

CPGs Directly Involved in E-Commerce: Expectations and Packaging Changes

Key decision makers are largely undecided regarding whether CPGs will become directly involved in e-commerce, 47% are undecided to that question, 29% say yes and 24% say no.

While some agree that the overall tide of consumer sentiment favors CPGs becoming involved, the cost of developing those capabilities and the already existing and effective channels with mass-retailers weigh against that decision.
Attitudes and Behaviors of Retailers As They Relate to E-Commerce and Packaging

Requiring Different Packaging for E-Commerce, Primary, or Secondary

The industry currently tends to use identical primary packaging for retail and e-commerce, while secondary packaging for e-commerce remains generally plain for practicality and for the safety and security of the package. Reasons for identical primary include minimizing SKUs and increasing operational efficiency.

Sentiment does exist to potentially alter the packaging in the future if the e-commerce segment is better understood.

Secondary Packaging for E-Commerce and Third Parties

Key decision makers interviewed indicated that 50% do their secondary packaging exclusively in-house, 28% exclusively use third parties, and 22% use both methods.

The rationale of using third party manufacturers appears to hinge on the following factors:

1. Circumstances in which the manufacturer’s quality control, efficiency, and bandwidth are not as strong as a third party manufacturer.
2. Special packaging requirements that are outside the scope of the manufacturer’s usual operations.
E-Commerce Making “The Search” the New Shelf Space

There is a nearly unanimous consensus that the internet search as part of e-commerce is taking the place of the more traditional shelf space in retail establishments. However, there are limitations to that change, such as consumers preferring to experience some products only in a traditional retail environment.

Nevertheless, synergies exist whereby e-commerce and traditional retail can co-promote. Examples of these synergies include:

- Target’s experiment with ordering online and then picking up in-store, with reserved parking for the pick-ups.

- iPads on the aisles to allow customers to order out of stock merchandise via e-commerce.
Proportion of Product Sold Via E-Commerce in the US

The e-commerce industry in the United States, including internet sales of goods through auctions, has grown considerably over the past five years. It is projected to continue its growth until 2019, though at a more modest rate due to the increasingly established nature of e-commerce. Growth and revenue are represented by the following figures for 2014.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Revenues</td>
<td>$297.9 Billion</td>
</tr>
<tr>
<td>Profit</td>
<td>$21.2 Billion</td>
</tr>
<tr>
<td>Wages</td>
<td>$18.5 Billion</td>
</tr>
<tr>
<td>Annual Growth (2009-14)</td>
<td>10.3%</td>
</tr>
<tr>
<td>Projected Annual Growth (2014-19)</td>
<td>5.9%</td>
</tr>
<tr>
<td>US Businesses in E-Commerce</td>
<td>131,447</td>
</tr>
<tr>
<td>Annual Growth of Quantity of US Businesses in E-Commerce (2009-14)</td>
<td>11.7%</td>
</tr>
</tbody>
</table>
E-Commerce Growth in the US

Key decision makers have a clear sense of both the overall proportion of e-commerce within their own industries in present day, and the projected rates of growth in the upcoming years. There is overall an optimistic sense of e-commerce’s continued growth and penetration of US industries.

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>CURRENT POSITION</th>
<th>PROJECTED ANNUAL GROWTH (3-5 Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmaceutical*</td>
<td>5-10%</td>
<td>N/A</td>
</tr>
<tr>
<td>Nutraceutical</td>
<td>10%</td>
<td>7%</td>
</tr>
<tr>
<td>Food</td>
<td>10%</td>
<td>7-8%</td>
</tr>
<tr>
<td>Consumer Goods</td>
<td>20-30%</td>
<td>10-20%</td>
</tr>
<tr>
<td>Home furnishings</td>
<td>10%</td>
<td>20-25%</td>
</tr>
<tr>
<td>Clothing</td>
<td>30%</td>
<td>15%</td>
</tr>
<tr>
<td>Technology</td>
<td>5-10%</td>
<td>30%</td>
</tr>
<tr>
<td>Wholesale</td>
<td>N/A</td>
<td>18%</td>
</tr>
</tbody>
</table>

*Including mail-order prescriptions and over the counter drugs purchased online through third party retailers.
Packaging Experiencing the Most Growth and The Future of Packaging

When it comes to packaging growth and its future overall, the most dominant theme is the popularity of sustainable materials that offer full functionality in the e-commerce process, as well as being able to verify the product’s authenticity. Examples include:

- Everlane recycled craft envelopes.
- YFY Jupiter straw-based fiberboard.
- Anti-counterfeit holograms and tracking numbers that can be verified online.
Summary of Key Trends

Trends in E-Commerce Packaging
Trends in e-commerce packaging are very diverse in nature and ultimately span the entire supply chain. These trends are indicative of the industry’s increasing commitment to sustainability. Nevertheless, these efforts as always are counter-balanced with the need for cost-effectiveness in e-commerce’s competitive operating environment.

Trends include:
- Easy Return Packaging
- Second Life Packaging
- PEFC Certification
- Paper as Fill
- Plastic Envelopes

Trends, Their Term, and the Economy
The consensus is that these trends are largely here to stay for the long-term. However, what is short-term about these trends is the capital expenditure required in order to conform to consumer demand in areas such as sustainability.

The industry also does not concur that there is a direct correlation between the trends and the current economy. Instead, the industry indicates that movements towards cost-cutting are largely more indicative of current decision-making and the competitive e-commerce operating climate.
**Trend Drivers**

The key trends are ultimately driven by factors that are not mutually exclusive. These drivers are indicative of evolving customer demand that increasingly takes into consideration sentiment about key issues, such as sustainability.

Trend Drivers:

- Customer Perception
- Quality
- Cost
- Personal Environmental Impact

**Green Packaging**

Key decision makers agree that green packaging is here to stay. In accepting that fact and ultimately trying to make the financial and operational impact as positive as possible, the industry has correspondingly developed key factors and best practices which ultimately aim to view green packaging as a long-term investment.

Factors:

- **Cost-Effectiveness**: View green packaging in the context of its full lifecycle.
- **Due Diligence**: Take rightsizing, material usability, and damage prevention into consideration.
- **Cost Neutrality**: Short-term investments in green packaging will be off-set by long-term results.
Regulatory Issues

Government regulations have a very direct impact on e-commerce. These include regulations that are both currently in place, and ones that the industry feels are probably to be in place in the near future. While regulations ultimately vary in nature, increasing demands for sustainability are a common theme, as is consumer protection.

REGULATIONS CURRENTLY IN PLACE
- California Laws Regarding Misleading Packaging
- USDA Regulations Concerning Food Shipment
- State Taxation of E-Commerce
- Sustainable Forestry Initiative (SFI) and Forest Stewardship Council (FSC) Certifications of Board
- Lead Free Certificates
- Extended Producer Responsibility

REGULATIONS WITH POTENTIAL FOR ENACTMENT
- Increased Nutraceutical Regulation
- Pharmaceutical Temperature Excursions
- Serialization
- Local Sustainability Requirements
ACTIONABLE INSIGHTS

1. Online retailers and/or manufacturers and their logistics providers need to more effectively partner and communicate in order to arrive at mutually agreed upon standards for packaging. Logistics providers offer services and expertise that help packages survive shipment. Online retailers and/or manufacturers can more clearly articulate their needs in a Service Level Agreement (SLA).

2. Machinery providers and manufacturers also need to collaborate and interact more as partners than vendors and customers. Manufacturers express many needs that are not currently being met by their machinery providers, implying a lack of overall collaboration.

3. Online retailers with an omni-channel strategy should explore ways to find synergies between e-commerce and retail locations in order increase sales overall, such as apps that encourage retail shopping and the option to ship an item via e-commerce directly to the store.

4. When determining whether to use a third party for secondary packaging needs, a manufacturer should do so if they have insufficient manpower and operating efficiency, or if the third party can meet special requirements that are outside in-house capabilities.

5. Before a product is commercialized or a new type of packaging is launched, the manufacturer should conduct thorough due diligence on the entire supply chain in order to assess whether there are heightened durability risks at specific stages. Many mistakes being made in e-commerce are due to one specific stage of the supply chain whose requirements were not met by the product or its packaging.
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