

Pharmaceutical Packaging – Where are We and Where is it Going?

a report by

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Senior-friendly (SF); child-resistant (CR); tamper-evident; USP standards – all packaging specifications that concern the pharmaceutical industry in the US. The industry is also confronted with US Food and Drug Administration regulations, good manufacturing practice (GMP) specifications and margin erosion that comes from a global marketplace. It is no surprise that many packaging engineers find themselves caught between a rock and a hard place when the time comes to make a change to the packaging specifications for any drug.

Consumers, on the other hand, are looking for more added value from the product they purchase. The importance they place in product safety, package integrity, dispensing, availability and price is now carefully scrutinised by drug marketers in North America. Add to that the ageing population and its requirements for easier-to-open packaging, and you have a real juggling-act on your hands. The Consumer Product Safety Commission (CPSC), and its position on hydrocarbons and other related products – requiring SF/CR packaging – has also widened the applications for SF/CR technologies. Plastic-tube packagers, for example, now have to find a solution if they want to continue with the same packages and comply with CPSC decisions.

The professionals who develop new packages for the pharmaceutical industry now have to focus on many factors that were not on the radar when most packages were developed in the 1970s and 80s. Since converting most drug packaging from glass bottles to plastic bottles, and metal caps to plastic caps, developments have been few, and have lacked imagination. Two-piece CR closures were introduced and heat induction became the standard for tamper-evident packages across the marketplace, and has remained so for two decades.

The closure industry, in particular, is focusing on packages that respond better to consumer requirements. One-piece SF/CR systems, and packages that include desiccant in the cap in order not to have a loose canister or desiccant pouch in the bottle, are becoming available in the marketplace. Dispensing systems, so popular in the booming

nutraceutical industry, are being integrated with child-resistant technologies.

Packaging industry leaders and pharmaceutical product marketers now have to overcome many hurdles caused by a high level of regulations imposed on the industry. Changes in packaging materials, specifications or simply nomenclature are synonyms for increased cost and staff allocations, which add to the overall price of the drug and do not bring much value to consumers or pharmaceutical marketers. The regulated environment is necessary to assure consumers that the drugs they use are safe and exhibit all the properties claimed by the manufacturers. The impact of these internal costs on the pharmaceutical industry often freezes the implementation of new packages at the gate. It is only with the introduction of a new over-the-counter (OTC) or prescription drug that packaging marketers and developers have an opportunity to incorporate new technologies in materials and function.

Too often, the pharmaceutical industry turns to the standard packaging method of bottles and threaded caps, without exploring the best way a drug could be packaged from the user's point of view. On the other hand, the food and personal care industries spend a lot of time, energy and money developing packages that respond better to the consumer's preference: mayonnaise is now available in an upside-down bottle with a dispensing cap; most body washes, because of their texture, are also packaged in upside-down dispensing systems; and many snacks are pre-packaged in small pouches for children's lunches. These are only a few examples. If you look at the shelves of your local stores, you will see hundreds of these package improvements for everyday products, but when you get to the pharmacy, OTC drugs – and prescription drugs even more so – will be relatively the same from one brand to the next.

The pharmaceutical packaging industry needs fewer barriers to the introduction of new concepts, once it is determined that the properties of a drug will be unaffected – for example, that drug stability is unaffected by a material as stable as Polypropylene. It also needs to look at and be concerned by what the



user needs from the packaging, instead of keeping to the same conventional packaging methods. To maintain a position of leadership, as in any industry, North American and European drug manufacturers will have to be more creative and innovative with their packaging. The market leaders today are those that break down barriers and paradigms. Who cannot remember when ketchup was only supplied in a glass bottle with a metal cap? If someone had beaten Heinz to the punch and marketed its ketchup with an easy-flow dispensing cap, the shelves of our local stores might look different in the ketchup aisle. The innovation came from Heinz, even though they had to overcome many technical and regulatory compliance issues before going from glass to plastic. Their position in the ketchup market has not been challenged since, and Heinz have not stopped improving and innovating the packaging of their ketchup brand.

Ideas have been plentiful from packaging designers, and more are in the works. The pharmaceutical market is the hardest to penetrate for these marketers, but also the most captive. Often it is heard that once yours is the standard packaging component, your position is almost unchallenged for years. The pharmaceutical industry sometimes finds itself paying more for its packaging components than other industries, due to the highly regulated environment and resistance to change. The industry has developed new ways to lower its costs by using such means as e-bids or auctions, but these processes do not promote novelty from manufacturers. Furthermore, they are focused only on cost cutting. The online auction process is a topic that requires further analysis from a short- and long-term point of view.

I have no crystal ball, but a lot of signs are pointing to a new era in pharmaceutical packaging development. As the economy continues evolving

towards complete globalisation, we will see drugs filled and packaged in Europe, for example, launched in the US. The way Europeans package analgesic is quite different to the US. Blisters are used in 80% of packaging in the European pharmaceutical market but in only 20% of the packages in America. Blisters do not offer the SF/CR compliance required in North America; new packaging methods will have to be developed. Europeans have not yet developed any rules or specifications that marketers have to comply with, but discussions have been on-going between the industry and regulatory bodies all over Europe and even Asia. This dialogue will create the need for ideas and innovations from packaging professionals worldwide.

It is not automatic that European standards will match those in North America; it would be quite surprising if European drug marketers favour North American packaging methods. Europe has always been many micro-markets very close geographically; now it is one big marketplace but retains many geographical and, more importantly, cultural differences. These micro-markets are serviced by many creative packaging companies that are still very active and alive today, all looking at the opportunities the EU has created. North America's mass-market, standardised, low-cost approach might not be the way the rest of the world sees as the best to market products, and their choice of packaging might be quite different to comply with CPSC regulations.

Marketers and developers of packaging products can only hope right now that the pharmaceutical environment will change somehow and allow more innovative solutions for their packaging requirements. Everyone understands that pharmaceutical products have to be manufactured in a sterile and aseptic environment, but the packages do not always have to carry that image. ■