

What You Must Know About Sustainable Packaging

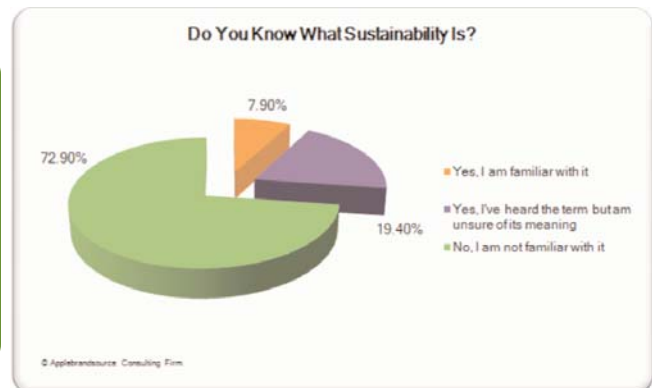
This report looks into the growing industry of sustainable packaging and offers businesses insight for energy-efficient thinking. Sustainable growth has engulfed the packaging industry. Flexible products that reduce space, material and cost have replaced the rigid systems of the 20th century. Companies looking for new ways to promote themselves and increase margins have joined the 'green movement' as a means to drive growth. Although not all solutions are cost effective, this article will focus on innovative solutions that reduce costs, while improving a company's carbon footprint.

Introduction

If you're having difficulty increasing efficiency and reducing costs, technologically innovative and sustainable solutions provide a unique opportunity. With the emergence of the 'green movement' of the 21st century, sustainable business development promotes advantageous social responsibility and increased return on investment by addressing the key concerns of businesses across all operating sectors. **By reducing their "carbon footprint" (a measure of the impact that human and business activities have on the environment) and promoting sustainable practices that improve efficiencies and reduce heavy-set costs, businesses will see clear, positive impacts on overall returns.** Developing technologies make this initiative viable and provide the solution many companies are looking for.

Technological developments in packaging are becoming more frequent in an effort to reduce businesses impact on landfill congestion, material consumption, and energy use. Biodegradable additives, utilizing hydro-biodegradable and oxo-biodegradable technology, help reduce the impact of packaging on the environment after its intended use. While many agree that providing a biodegradable option is important, it is necessary to understand the differences in options to better inform a wide variety of customers.

Sustainability focuses on individuals' and businesses efforts to reduce energy output, greenhouse gas emissions, toxic waste, and water use (among others) to promote a safe, clean environment for current and future generations. Despite the near constant 'green' presence in the media, a recent survey found that 92% of those polled aged 18-55 were either unsure or unfamiliar with the notion of sustainability and the "carbon footprint."¹ This education gap provides businesses an opportunity to educate their customer base and take advantage of a unique opportunity



Value of Sustainability

Businesses and customers alike are starting to weigh sustainability as an important factor in their buying decisions; 57% of the 3,200 respondents surveyed by AMP Agency, an Alloy Media + Marketing company, are said to gain trust in companies promoting sustainability.² From a business standpoint, there is little uncertainty about why increased profits follow proactive sustainable growth. As the International Institute for Sustainable Development decrees **"reducing material and energy inputs and avoiding toxic clean-ups and the associated fines can significantly lower a company's costs; while the brand loyalty and increased marketing opportunities that come with a 'green' tag often equate with increased revenue."**³ Simply put, using less saves more.

The range of action varies widely among different industries, depending on reach and company structure. Such household names as Coca-Cola and Wal-Mart have taken it upon themselves to develop sustainable departments under their business umbrella to conduct global initiatives. However, it is not the aim for every operation to take drastic steps to change the world. Small solutions are practical across all industries, including promoting sustainable education and using energy-efficient electricity to reduce in-house costs and promote clean energy use. Moreover, as this movement has snowballed, implementing sustainable programs is seen frequently as advocating social responsibility and awareness, which are used as marketing tools to promote company initiatives. Adopting energy-efficient solutions provide a unique way to improve overall returns.

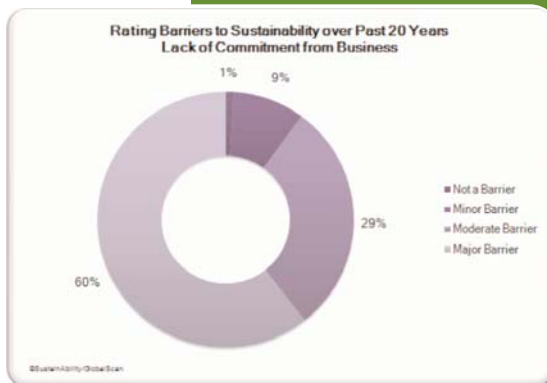
Proactive Packaging: 'Going Green'

Sustainable packaging:

1. Is beneficial, safe & healthy for individuals and communities throughout its life cycle;
2. Meets market criteria for performance and cost;
3. Is sourced, manufactured, transported, and recycled using renewable energy;
4. Maximizes the use of renewable or recycled source materials;
5. Is manufactured using clean production technologies and best practices;
6. Is made from materials healthy in all probable end of life scenarios;
7. Is physically designed to optimize materials and energy;
8. Is effectively recovered and utilized in biological and/or industrial cradle to cradle cycles.

The Sustainable Packaging Coalition defines sustainable packaging based on eight criteria (see chart above).⁴ The focus is on using renewable, clean resources and maximizing recycling efforts. It can be agreed upon, however, that it is an inherent responsibility of firms to make a green, eco-friendly effort in their daily practice. Not only will this attitude improve the industrial carbon footprint, it can lead to increased efficiency in production and distribution and cost-savings in transportation and storage.

In a recent survey of 100 representatives from corporations, governments, NGOs, academia/research institutions, and consultants/journalists conducted by SustainAbility/GlobalScan, 60% of respondents believe the lack of commitment from businesses



to be a "major barrier" to sustainable growth.⁵ It is common that the primary concern for business indifference is cost. A frequent response included "sustainability will not happen until it is economically driven." Robert Wilkes, president of the Wilkes Creative design agency, was blunt in saying "people won't do it" until sustainability is economically feasible.⁶ However, creating unique packaging solutions that stress economic benefit are plausible and provide a path to sustainability. Collapsible packaging that reduces the product-to-package ratio, eliminates wasted space, increases shipping capacity and minimizes inbound shipping costs is one example. This alternative reduces internal and external greenhouse gas emissions during transport and production and maximizes inventory levels, saving time and cutting energy, resulting in improved profit for the end-user. By using less material to produce the package, costs decrease, driving margin growth.

Emerging Technologies: Oxo-biodegradable & Hydro-biodegradable Additives

To be truly sustainable, companies must focus on a "cradle-to-grave" scenario, scrutinizing product development from raw material production through to the end-user. Oxo-biodegradable and hydro-biodegradable additives are two emerging technologies sustainable businesses are implementing into their product line to improve their environmental impact and reduce landfill consumption.

According to the Flexible Packaging Association's recent State of Sustainability report, a biodegradable product is "capable of undergoing biological anaerobic or aerobic decomposition into carbon dioxide, methane, water, inorganic compounds, or biomass in which the predominant mechanism is the enzymatic action of microorganisms that can be measured by standardized tests, in a specified period of time, reflecting available disposal condition. Not every plastic is functionally 'biodegradable'. Not every biodegradable polymer is considered 'compostable', particularly if the goal is to produce a quality compost product within a realistic timeframe."

The main concern with biodegradability is that traditional plastics are made from non-renewable resources such as oil, coal, and natural gas. **Therefore, one of the benefits of plastic packaging – that it lasts forever – is also one of its major burdens.** Scientists have been researching many ways to make plastics renewable, from biodegradable additives that dissolve the plastic in an eco-friendly way, to full packaging production out of renewable resources, such as plants.

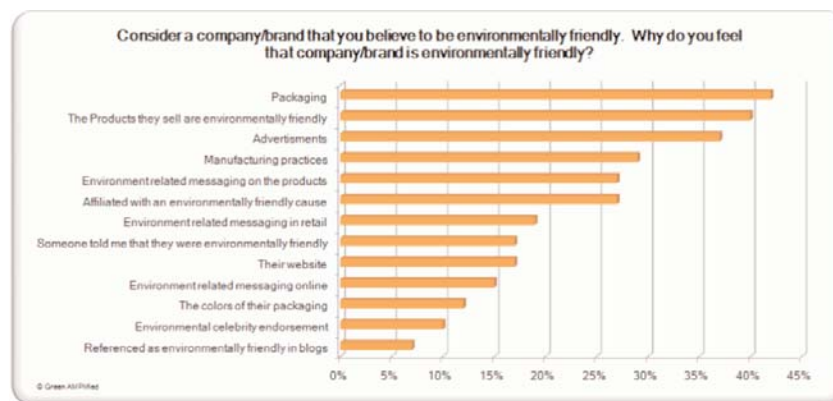
The major obstacle in the implementation of these innovations is cost. To alleviate the elevated cost, “the Cooperative Research Centre (CRC) for International Food Manufacture and Packaging Science is looking at ways of using basic starch, which is cheap to produce, in a variety of blends with other more expensive biodegradable polymers to produce a variety of flexible and rigid plastics. These are being made into ‘film’ and ‘injection molded’ products such as plastic wrapping, shopping bags, bread bags, mulch films and plant pots,”⁷ according to the Australian Academy of Science. As this technology continues to develop, biodegradability will become a major player in the packaging industry.

Oxo-biodegradable and hydro-biodegradable thermal based films are two emerging technologies in the green movement. As our landfills continue to collect, these alternatives will create an eco-friendly solution to reduce buildup. The two processes are similar in that they are initiated by an additive which reduces the molecular weight of the material over a pre-determined period. At the end of the pre-determined period, the material will biodegrade into nothing more than CO₂, water, and a small amount of trace elements.⁸ Hydro-biodegradable plastics tend to degrade and biodegrade faster than oxo-biodegradable plastics. Oxo-biodegradable plastics are currently less expensive to produce because they are used with existing machinery. The main difference is that hydro-biodegradable plastics need moisture to initiate the decomposition process, while oxo-biodegradable plastics need oxygen.⁹ Despite the cost differential between the two technologies, the costs will vary to implement such additives and the technical data is still not efficient enough to support large programs. Moving forward, we will see an improvement in technology and support, which will allow a majority of plastic packagers to implement these technologies when pure recycling is not an option.

A Call to Action

Technology leads to innovation and innovation leads to growth. In the coming years, sustainability will become a priority in packaging much like how energy independence has become a main concern today. Each business must determine their influencing sustainability factors and take action. These factors may include energy-efficient certification or accreditation, environmental associations, global warming, the volatile mercantile exchanges, and cost reduction practices.

90% of American consumers believe that acting in an environmentally friendly way is important.¹⁰ By understanding its importance, businesses are in a position to enter new markets and reach a new base of customer by promoting sustainability. New developments in sustainable packaging will continue to provide the solutions firms are looking for. By minimizing energy and resource use, companies will reduce production costs and maximize stakeholder profit. These emerging technologies in packaging are crucial to increasing efficiency and reducing cost. The companies that make a commitment to sustainable growth will reap its benefits.



¹ How to sustain 'green' packaging: 'sustainable packaging' is getting a lot of attention. But...; <http://www.allbusiness.com/professional-scientific/specialized-design/4498079-1.html>; 6/1/2007

² <http://www.environmentalleader.com/2008/08/06/over-half-of-consumers-factor-green-record-into-buying-decisions/>

³ <http://www.iisd.org/didigest/may98/4may98.html>

⁴ <http://www.sustainablepackaging.org/pdf/Definition%20First%20Page.pdf>

⁵ http://www.sustainability.com/downloads_public/GS_SA_Compass_deck_feb27.pdf

⁶ How to sustain 'green' packaging: 'sustainable packaging' is getting a lot of attention. But...; <http://www.allbusiness.com/professional-scientific/specialized-design/4498079-1.html>; 6/1/2007

⁷ <http://www.science.org.au/nova/061/061key.htm>

⁸ <http://www.biodeg.org>

⁹ http://greenliving.lovetoknow.com/Type_of_Biodegradable_Plastic

¹⁰ <http://www.environmentalleader.com/2008/08/06/over-half-of-consumers-factor-green-record-into-buying-decisions/>