Single Use Plastics versus Consumerism in the case of Snack Food Packaging;

Evolving Societal Norms, Culture and Tipping Points

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Plastics Tipping Point

Plastic pollution – what was the tipping point?

OR PAL AIDDOUS
Director of Water, Thames Ecology

Despite years of research, news stories concerning plastics and the pollution of the marine and water environment have finally started making headlines, Dr Phil Aldous writes. Why the sudden change? Returning to the trigger that made us all sit up and listen. Was it the BBC’s Blue Planet II – and Sir David Attenborough’s words, “the future of all life now depends on us” – that was the trigger for action, and why is that more powerful than 50 years of published research? Maybe because it is citizen power that can be really emotive and, I spoken by a non-politician, is seen as more trustworthy. We do need to reduce our plastic pollution in seas and waterways and clean up our act. All of industry has a role to play in this – whether that is manufacturer or user.

Tipping point

Shocking images of the damage our plastic use has had on the planet have put the issue firmly on the public and government’s radar. C-Store looks at what retailers are doing to reduce its use and why the war on plastic is far from straightforward.

Plastic has suffered a dramatic fall from grace. Its destructive impact on the environment was hardly a secret, but it wasn’t until David Attenborough’s recent Blue Planet series that public consciousness appeared to undergo a tipping point.
Blue Planet II (BBC, 2017) David Attenborough

Media Driven..

BREAK THE PLASTIC HABIT! JOIN THE DAILY MAIL'S CAMPAIGN

Ten years ago, the Mail launched a trailblazing campaign to rid Britain of the scourge of plastic supermarket bags — prompted by a heartrending, shaming picture of an endangered turtle entangled in one, which was used on the front page.

The success of our Banish The Bags initiative has been nothing short of phenomenal.

Join the Daily Mail’s battle for a world with less plastic waste
The Plastics problem: Overcoming Consecutive Tipping Points

Plastics Waste & Pollution Public Awareness (2017)

Tipping Point I

Blue Planet II

Media Campaigns

??

Tipping Point II

Plastics Waste & Consumption

A growing problem?
“A whale found washed up on a beach in Spain earlier this year had 29kg of large pieces of plastic in its digestive system – including rubbish bags, ropes, pieces of net and a drum.

In 2015, an international research team led by Erik van Sebille at Imperial College London estimated that between 15 and 51 trillion plastic particles are floating in the world’s oceans. Their combined weight is between 93,000 and 236,000 tonnes.

Each year, between 1.2 and 2.4 million tonnes of plastic enters the oceans from rivers, according to a paper published last year in Nature Communications by Laurent Lebreton of The Ocean Cleanup (TOC) and colleagues. They calculated that two-thirds of this comes from just 20 rivers, mostly in Asia.”

The Institution of Engineering & Technology (2018)
https://eandt.theiet.org/content/articles/2018/05/plastic-waste-pollution-in-the-ocean-technology-at-the-tipping-point/
“Based on forward projections, current (2018) waste arisings are estimated at 5.2 million tonnes, and are forecast to increase to around 6.3 million tonnes by 2030 – a 20% increase over this 12 year period.”

Plastics Consumption & Waste: A Growing Problem?

A plastic future: Plastics consumption and waste management in the UK (WWF, 2018)
“Following a dire combination of heavy storm and monsoon rains, Metropolitan Manila was hit with massive amounts of plastic pollution.”


Plastics Consumption & Waste: A long recognised problem..
Plastics Consumption & Waste: A long recognised problem...

The unaltered stomach contents of a dead albatross chick photographed on Midway Atoll National Wildlife Refuge in the Pacific in September 2009 include plastic marine debris fed the chick by its parents. (Source: Greenpeace)
Plastics Consumption & Waste: A long recognised problem..

"Plastics companies who hire chemical engineers who see their role as merely “paid hands” to produce plastics more efficiently may find themselves without a market over time, and the chemical engineer they hired without a job. Chemical engineers who join plastic manufacturers, and who see their role as one which produces a product which meets a required specification for a given function, may help lead their organisation to continued success through innovation and new product lines."

Byrne & Fitzpatrick (2009)

Consumer Responses..
"I want to have a positive impact on my society and the environment, and take pride in that sustainable way of living."

Germany (KPMG, 2016): ‘84% even prefer unpacked food, where possible’

(UK, Kantar TNS, 2018): Factors important in shoppers purchasing decisions

- ‘Price’ 72%
- ‘Quality’ 58%
- ‘Special offers’ 42%
- ‘Packaging concerns’ 17%
- ‘Fairtrade’ 8%
- ‘Carbon footprint’ 6%

Kantar TNS data shows that packaging is an important concern for

“63% are concerned about reducing the amount of packaging they buy.”

UK, Kantar TNS (2018)
Royal Mail ask people to stop posting their non-recyclable crisp packets back to Walkers without envelopes

To: Walkers Crisps
Walkers Crisps: ditch plastic packaging

Campaign initiated by
Gia Amico

Sign the petition

First Name *
Last Name *
Email *
Postcode *

I'd like to be emailed about this, and other 38 Degrees campaigns.

Yes, keep me informed via email
No, don't send me anything or keep record.

The Engineers Response
The Engineers Response

• There’s huge Media and Consumer hype.

• ..and ignorance: e.g. carbon emissions from ground down recycled glass greater than that of single use plastics.

• Yet, we need to do something/seek acceptable consumer solutions.

• It used to be the product that was centre of attention, now it’s the packaging!

Industry Responses..
Industry Responses

From @walkers_crisps “We have received some returned packets and recognise the efforts being made to bring the issue of packaging waste to our attention. “The returned packets will be used in our research...” #packetinwalkers

http://pepsico.co.uk/what-we-believe/Planet
Industry Responses

Nestlé: ‘It has taken us a little more time than we would have liked to address the issue of plastic packaging’

By Jenny Eagle
17-Apr-2018 - Last updated on 17-Apr-2018 at 12:28 GMT

Nestlé Philippines responds to Greenpeace waste criticisms following Manila’s ‘plastic waves’

By Jenny Eagle
17-Apr-2018 - Last updated on 17-Apr-2018 at 12:28 GMT

The partners “aim to develop and launch at commercial scale a PET plastic bottle made from bio-based material i.e. 100% sustainable and renewable resources ..[e.g.] used cardboard and sawdust, so it does not divert resources or land from food production”

Danone and Nestlé Waters Launch NaturALL Bottle Alliance with California Startup to Develop 100% Bio-Based Bottles

PepsiCo Joins Danone And Nestlé’s NaturALL Bottle Alliance
**NEW MATERIALS**

**Plastic: changing it up**

If we are going to benefit from new materials, clear labelling will be essential. Bio-PET, for instance, is a plastic made from renewable feedstocks like the leftover pulp from harvesting sugar cane. Coca Cola’s bio-PET Plant bottle is made like this, but bio-PET behaves like oil-based PET (used for plastic bottles) and is recyclable, but not compostable.

There may yet be hope for biodegradable PET following the discovery of an enzyme dubbed ‘PETase’, produced by a bacterium called Ideonella sakaiensis 201-F6 that was found in the soil of a Japanese PET bottle recycling plant. Researchers at the US Department of Energy’s National Renewable Energy Laboratory (NREL) and University of Portsmouth announced recently they had developed a faster working variant of the enzyme this year that can break down PET bottles more quickly.

The Institution of Engineering & Technology (2018)
https://eandt.theiet.org/content/articles/2018/05/plastic-waste-pollution-in-the-ocean-technology-at-the-tipping-point/

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"The chances are it’s being 'over packed' in an unnecessarily high level of protection.

**Shortening its shelf life, and adjusting its associated packaging requirements, can be a simple but highly effective way of improving its environmental performance."

Industry Responses

“A Tetra Pak package has a thin layer of polymer, or plastic, to prevent moisture getting in or out and to keep contents fresh...Our long-term ambition is for all our chilled and ambient packages to be made from renewable alternatives to oil-based plastics.

Despite considerable progress, bio-based polymers are still only in a small fraction of our cartons and a niche product for the plastics industry.

We are working with a number of our stakeholder partners to explore these issues, while also continuing to assess alternatives like other plant-based materials, organic waste and algae.”


Industry Responses

“Performing as regular plastic is not so simple. TIPA’s solution is a blend of bio-based polymers and derived from plant-based sources, which is not an easy technological feat.”

Industry Responses

"Molded packing material by Ecovative made from a mushroom-type fungus."


Packaging Food With Food to Reduce Waste


Industry Responses

Packaging the Future: Edible Wrappers, Containers and Bags (Yum!)

PACKAGING THE FUTURE
edible wrappers, containers and bags

You Will Soon be Able to Eat Your Food Packaging

© August 23, 2016  0 Comments  297 Views  3 Min Read


http://www.skippingrockslab.com/ooho.html

Ooho!
Water you can eat

http://www.skippingrockslab.com/ooho.html

http://sciencenewsjournal.com/will-soon-able-eat-food-packaging/
Industry Responses

No packaging options but students need to purchase microchipped bottles in order to dispense.

Industry Responses

Recycling

Pret a Manger doubles discount for bringing reusable coffee cups

Chain will now knock 50p off prices in bid to help change customers’ habits, with the UK discarding an estimated 2.5bn coffee cups every year
Industry Responses

University College Cork is Now Home to Ireland’s First Plastic Free Café

[Image]

Industry Responses

Ireland’s first plastic free café opens today


[Image]
The Pepsi Challenge!
The Pepsi Challenge

MIT Sloan Management Review

Pepsi's biodegradable backlash: The snack bag that was too noisy

Leslie Brokaw
Tuesday, March 18, 2014 - 4:35am

But Consumer Reports said those bags didn't decompose as fast as the company claimed
INDIA – The food and beverage company PepsiCo has announced it will be launching 100% compostable, plant-based packaging for its Lay’s and Kurkure snacks products in the fourth quarter this year to address rising concerns around plastic pollution.


The industrial compostable snack bag is comparable in feel, noise and performance to PepsiCo’s current bags and certified to be industrially compostable by TÜV Austria. The new Danimer resins that are blends of biopolymers and mineral filler give the bag its white exterior and can be processed in blown film lines for improved economics. The new bio-based structures are currently being piloted in a limited test in the U.S. and Chile, with plans for a test in India later this year.

Polyhydroxyalkanoates (PHAs): polyesters produced by microorganisms, including via bacterial fermentation of sugars/lipids. They are used to produce biodegradable plastics.
Problematizing Responses..

Are proposed ‘solutions’ (including recyclable, bioplastic, biodegradable or no packaging options) more sustainable?

..Or in the context of the dominant societal paradigm of consumerist growth will they ultimately just contribute to creating more waste, carbon emissions & environmental degradation?

Societal *Un*Sustainability

Unsustainable Production and Consumption

Climate Change  
Food  
Water  
Environmental Degradation  
Biodiversity Loss  
Nitrogen Cycle  
Economic Inequality  

*Pollution and Waste; incl. Plastics*

Market driven Consumerist Growth Paradigm

These interconnected nexus factors are all Symptoms of an unsustainable global society, linked via respective complex natural and social systems we inhabit.
Waste Triangle: Reduce! (Consumption)

The problem with Recycling..

‘in the long run, recycling reduces waste generation only if it reduces primary material production; otherwise, it merely delays it’.


“No amount of recycling can get us out of this global mess,” said Abigail Aguilar, Campaigner at Greenpeace Philippines.

“Corporations may have conned us by providing so-called convenience but it’s not convenient when Your city, oceans, roads, and rivers are clogged by plastic garbage.”

The problem with Biodegradable Plastics...

European Parliament says biodegradable plastics will not solve plastic pollution

animals. The Parliament today has acknowledged that biodegradable plastics are not a silver bullet to our plastic pollution crisis, but merely a distraction from real solutions. Policies that dramatically cut our plastic footprint need to be urgently implemented."

The Parliament voted to strengthen the European Commission’s plans to slash plastic pollution, under the European Strategy for Plastics in a Circular Economy launched in January 2018.

FOR IMMEDIATE RELEASE: Strasbourg, 13/9/2018


Promoting Responsible Consumption?
Intrinsic and Extrinsic values act in opposition; strengthening one weakens the other.

Grouzet et al. (2005)
A careful evaluation of the narratives used in our everyday lives as consumers reveal that the package of narratives used are **collectively contradictory**.

In the context of ethical and environmental narratives, ..we purchase **water-intensive Fairtrade organic fruit and vegetables** that are **imported huge distances** by air transport from countries prone to **drought**.


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**How to move to Sustainable Consumption?**

"Much of what we consume remains fueled by status competition and the quest for social recognition and acceptance: this suggests that in order to make progress in curbing excessive consumption and its impacts on sustainability, we may need to reconceive consumption not merely as a matter of individual choice but as one of social norms that is tied in with broader efforts to achieve social justice.

-If social norms are such a big driver of consumption, **how can these norms be made to evolve?**

-How can technological change be reoriented around sustainability, instead of the never-ending quest for economic efficiency, increased labor productivity, and profit maximization for technology owners?

-How can markets be reshaped in order to favor the shift to more sustainable consumption patterns, sometimes referred to as voluntary simplicity?"
Douglas Holt (2012): Another way towards Sustainable Consumption?

- Extremely difficult/will take too long to dislodge the **Dominant Consumerist Market Paradigm**
- But, its **not necessary**; Use **marketing tools** to change **behaviour** (and elicit sustainable consumption tipping point), as with introduction of **plastic bottled water** from the 1980s, which was not down to drinks companies, but due to:
  - Fears over **tap water safety** following high profile incidents
  - 1988 NY Times article suggesting experts recommend people drink **8 glasses water/day** to remain **hydrated**
  - 1990/2000s narratives around **obesity and sugary drinks**


**Popularising & Embedding Sustainable Consumption?**

**Find water on the go**
Free Refill Stations on a street near you.

Get the App