Bord Bia
Irish Food Board



Packaging Prospects

Success in 2018 and beyond

The Thinking House
BORD BIA INSIGHT CENTRE

Introduction

Bord Bia surveys the global packaging landscape of today – and tomorrow – to identify the most exciting future packaging trends relevant to Food, Drink and Horticulture. Our partners at **Touch Packaging Innovation** are immersed in the world of FMCG packaging for brands across many categories. For this report, Touch have consulted their network of industry experts, working in the fields of sustainability, consumer insight, e-commerce and brand strategy in order to share our view of the future and the things that you need to be mindful of as you plan for packaging success.



Want to know more about Touch Packaging Innovation?

View our video introduction

touch
PACKAGING INNOVATION

This is an interactive PDF. If you'd like to learn more detail about the trends in this report, look out for our 'find out more' buttons.







Setting up for success

Success in packaging isn't just about the containment of a product... but rather the **entire lifecycle** of a piece of packaging - from sourcing, manufacture, distribution, retail, purchase and use, through to disposal...

We've considered the wider influences that might impact packaging at each step of this lifecycle, now and in the future – from social, environmental and political influences, not to mention the commercial realities that we all face.

From a social perspective, the ways that people are selecting, accessing and sharing products are evolving. From an environmental and political outlook, the ways that we source, manufacture, distribute and dispose of packaging are hot topics. Meanwhile, technology from across the globe is opening up new opportunities for the way we experience the world around us.

Of course, there are many unknowns when it comes to 'the future'. This report, however, is designed to highlight key areas to consider moving forward, and the implications for Irish businesses and manufacturers in the Food and Drink industry - from SMEs through to large corporations operating in the FMCG world.

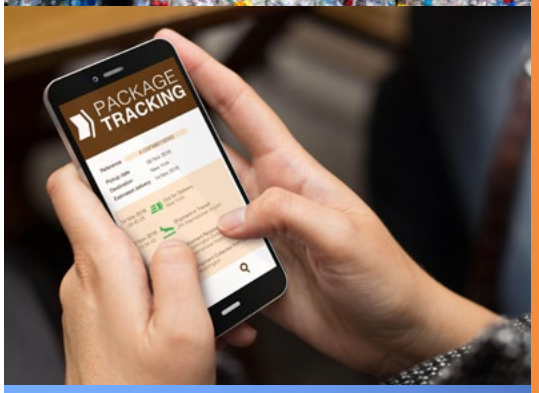


To take you through the lifecycle of packaging, we will explore 4 overarching themes...

This report is intended to be a thought-starter to inspire you... As such, we will be posing questions for you to ask your business, in order to set yourself up for future packaging success, both in the short and long term.









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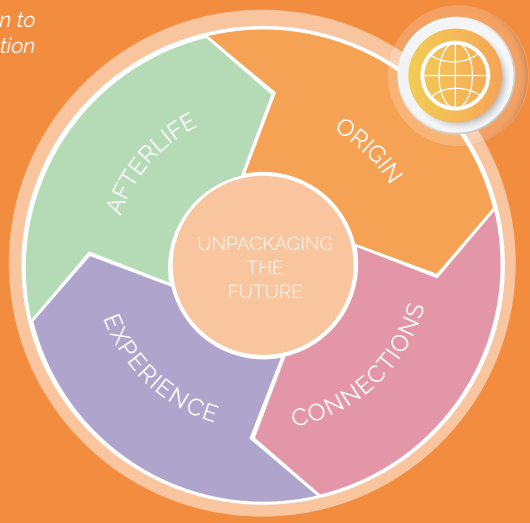


Origin

The importance of where things come from...

The idea of a circular system that optimises the value we extract from the Earth's resources is nothing new... yet Circular Economy thinking is quickly gaining traction. In the FMCG world, Circular Economy is set to shape the way that we think about packaging in the future.

With consumers paying more attention to where things come from, exciting innovations are emerging in the packaging world. From **responsible material sourcing and production methods**, tackling **problematic plastics**, to technologies that allow **greater communication & transparency throughout the supply chain**, packaging is bringing some positive news!

In this section, we explore trends and exciting 'new-news' about the way in which packaging and materials are sourced and why this is an increasingly important consideration.



Responsibly sourcing materials

Selecting a packaging material responsibly means considering your use of the Earth's resources. There is more to sourcing than meets the eye!

- **The amount of Co2**: Material varies in the **amount of CO2 or energy** to source, transport and convert into packaging. Some companies are starting to assess the wider implications of what material they buy and where to buy it from to **reduce** carbon impact.
- **Recycled content**: Incorporating as much r**ecycled content** as possible in a pack helps to create on-going demand and an impetus to recycle, supporting the "Circular Economy", (where more **value** from materials can be retained long term).
- The use of **Bio-derived material**: Manufacturing plastics from organic sources like crops has the potential to reduce our dependence on petrochemical plastics (derived from oil). BUT there is a danger that farmland used to grow food could, instead, be used to cultivate material for packaging.

So **sourcing** material for packaging or buying packaging "off the shelf" needs to consider the entire supply chain situation and its impact on our environment and economy.

Find out more >



Plastic under the microscope

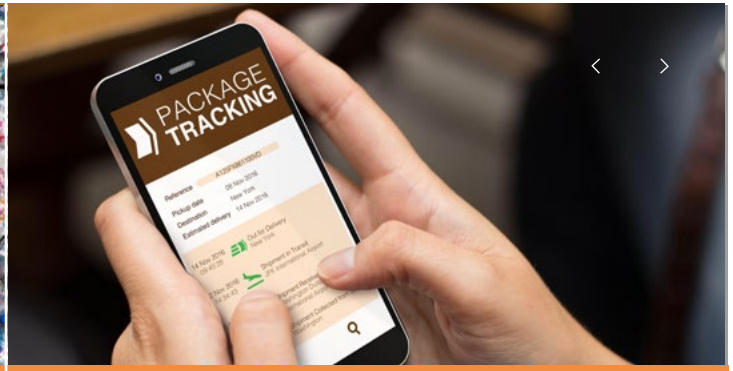
Plastic has been increasingly demonised. The need to find a solution is therefore top of mind for many in the FMCG world with plastic now "under the microscope" and in the public eye.

In reality we rely on plastic. It offers consumers affordable convenience whilst efficiently prolonging the shelf life of fresh produce, helping to prevent waste. Rather than a blanket ban, the answer lies in reconsidering how we use it.

- In the short-term, **optimised use** of the most **appropriate choice** of plastic is key.
- In the longer-term, investment is being made in the fields of technology, science and infrastructure to find suitable **replacements to the most challenging plastics used in the FMCG sector.**

Click below to see examples of some of the new developments under consideration...

Find out more >



Transparency

Consumers want increased reassurance from brands about what their messages and commitments to the wider world really are, as well as certainty about product integrity.

- Recent sourcing and contamination scandals have, unsurprisingly, led to increased scrutiny amongst consumers around what packaging contains and where it has come from.
- New technology, which can be embedded in packaging and labelling, has the potential to let consumers **access unique information** about their products. Augmented and Virtual Reality as well as developments in Blockchain and The Internet of Things are also expected to become more sophisticated, helping **to validate products and educate consumers about product origin** in more explicit immersive ways.

With brands taking advantage of the growing population of younger 'mobile natives' rarely without a smart device, wanting fast access to information, these emergent technologies will become increasingly relevant.

Find out more >

Origin

Responsibly sourcing materials

Now



Higher recycled content

UK retailer Co-op plans to switch all water to bottles made from 50% recycled content, leading to an annual saving of 350 tonnes of virgin plastic. The appearance of these bottles will be darker, greyer and cloudier than those made from pure virgin material – but Co-op plan to promote this as a positive point of difference in order to overcome consumer barriers and drive receptivity.



Alternative recycled materials

L'Oreal has partnered with Ecologic Brands to develop paper bottles for their new Seed Phytonutrient range, made from 100% post-consumer recycled paper with a post-consumer recycled liner.



Existing materials

Consider the existing materials that could be used to pack your product. What is the availability and relative level of energy required to recycle and generate new packaging. For example, glass might seem heavier and less robust in many cases, yet it has a far more positive renewable story than many other packaging materials.

In the future...



Natural Bio Polymers

Solanyl is made by Rodenberg Biopolymers using the potato starch waste product. It has been rolled out across many European markets for confectionery brands. It takes only a third of the energy to create Solanyl versus oil-based alternatives such as polypropylene. Likewise Soloplast. Algix makes a natural biopolymer called Solaplast from seaweed. It is estimated that if the drinks industry switched to **Solaplast** for a single year, benefits of **$1.3billion** could be achieved.



Milk Protein

The USDA have created an oxygen and moisture barrier film made from milk protein and citrus pectin. The film has been tested and found to be up to 500 times more effective than many traditional films. Edible, biodegradable and sustainable, this film could also be available as a spray-coating for products like cereal bars.



Bio based bottles

Coke are continuing to innovate with bio-based plastics and Japanese competitor Suntory plans to move to a 100% bio-based solution, using renewable and readily available non-food biomass materials. The process is less expensive compared to traditional bio-based processes and therefore more commercially viable than ever before.

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Origin

Plastic under the microscope

Now



Closed loop plastics

There are two truly closed loop plastics: Natural HDPE, used in the dairy industry and natural PET. Black plastics are typically challenging for recycling bodies to sort as sensors do not work with black non-reflective surfaces. Waitrose have announced that they are eliminating their black plastic ready meal trays by 2019, replacing them with coated fibre-based trays.



Right sizing for Recycling

Component size is an important factor. Small components like caps and straws are less likely to be recycled. The Ellen Macarthur Foundation recently ran an innovation challenge, a simple tethered lid being one of the short-listed ideas, to keep the plastic lid attached to the bottle during disposal.



Goodbye Straws

Starbucks are transitioning from the flat, plastic lids that require straws, to ones that feature a raised lip you can drink from. The new designs have drawn comparisons to an adult "sippy cup." Expect more innovations like this in the near future as governments make plans to move away from plastic straws on packaging.

In the future...



Carbon Negative films

Newlight technologies have created the world's first carbon negative material that takes CO_2 from the atmosphere and from industrial facilities and creates a polymer that can be used as a packaging film. Dell and Ikea have partnered with Newlight technologies to develop new packaging for their products using this carbon negative material.



No oil required

PEF is a polymer that is interchangeable with PET - except that it is bio-derived. It will be compatible with the existing PET recycling stream and incur a similar cost. In addition, it has an oxygen barrier that is 10x better, carbon dioxide barrier that is 4x better and a water barrier that is 2x better. It also offers thermal properties and higher mechanical strength allowing less material to be used in a single unit of packaging.



Sea food source

The Georgia Institute of Technology have created a material derived from crab shells that has the potential to replace the flexible plastic packaging used to keep food fresh. As well as coming from a natural source this material showed up to a 67 percent reduction in oxygen permeability vs. PET plastic, which means it could keep foods fresher longer in future.

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Now





Bringing the story to life

The Owl and the Dust Devil wine is proud of its origins - direct from vineyards in the Andes. A bespoke Augmented Reality App enables them to bring the story – and the landscape – to life in a more immersive way for consumers when they put their phone over the label, triggering a remarkable animation about the brand's unique story.



Track your pack

John West claims to be fully traceable – and verifiable by tracking the exact tuna can using unique codes printed on packs. We expect Blockchain technologies that provide more sophisticated traceability of every manufacturing touch point from "field to fork" to enable even more sophisticated tracking and accountability in future.





I can see clearly...

Although skin packing is not new, SealPacs FlatSkin® system uses a printed cardboard base with a transparent skin film to package meat, poultry, seafood and cheeses providing maximum product visibility. Moving to a cardboard tray (vs standard black plastic) enables the packaging to provide additional cues of freshness, provenance or whatever the manufacturer wants to say. Whilst reducing the need for additional labels and telling a "story" to support the product, it also improves recyclability.

In the future...

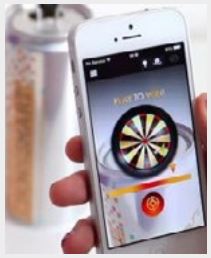




Secure Inks

In the future, anti-counterfeiting, tamper evident and traceable ink technologies could be applied on pack to improve pack traceability through the supply chain. There are many variations of this emergent technology which are already available, developed by innovators IQDEM, VerifyMe and HP.





Smart Packaging

Will become more prevalent, leveraging the instantly accessible digital world via increasingly sophisticated smart phones. This will give brands more opportunities to generate high quality relevant content that supports brand equity or affirms product authenticity at the point of purchase or use. Companies such as "talking Things" are pioneering a new era of packaging with this in mind.

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How to get started

Could reconsidering the source of your packaging material as part of a sustainable circular economy represent a significant win for your business? Do you have a positive story to share with consumers about where your product comes from?

If you wish to understand how the origins of your packaging can benefit your business in the future, start by considering:

- Is there sufficient knowledge and engagement regarding packaging sustainability within your team?
- What are your packaging requirements in terms of volumes, product protection, functionality, look and feel? Are you aware of more 'responsible' material choices - either existing or next generation - that could deliver on these requirements as effectively as your current material?
- Could you – or your packaging suppliers - incorporate greater recycled content?
- How might a change to your packaging material affect consumer experience?

If you wish to consider how packaging could help you celebrate the origins of your product, start by thinking about:

- How transparent is your supply chain in terms of where things are being sourced from and could you do anything to improve the situation?
- Do consumers shopping your category feel the need for a greater level of connection with these sort of details, to improve aspects of provenance or authenticity?
- What is the most suitable method for connecting consumers with this information?
- How tech-savvy is your target audience (and by target, we do not necessarily mean age!), and how much time are they likely to spend interacting with your pack?

Activity

Conduct an audit of your packaging and product facilities to understand where opportunities for these questions lie in the short, medium and long-term.

Write your thoughts...









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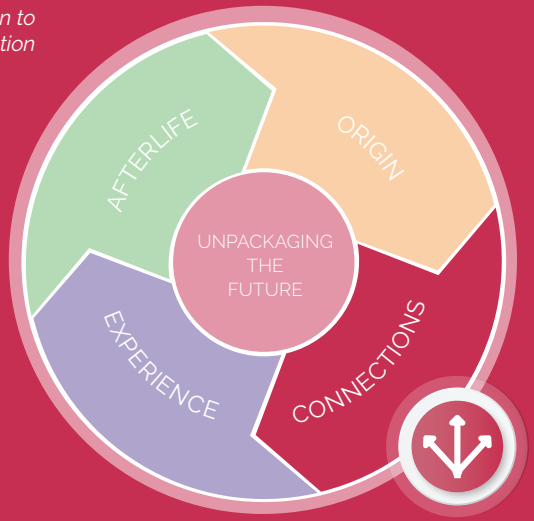


Connections

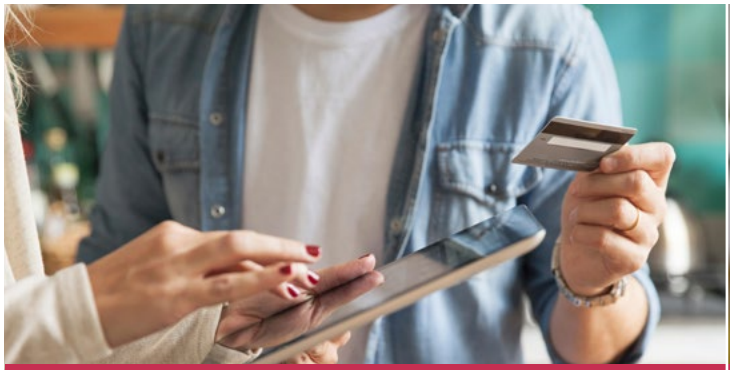
Connecting products with people via packaging

Against a backdrop of increasingly diverse and busy lifestyles, it is no surprise that we are in a period of exponential change in how consumers are accessing products, services and experiences and how brands are attempting to **connect** with consumers.

The way in which consumers encounter, browse, select, purchase and receive a product is changing with more options to connect brands via **personalisation** and **customisation**. We are also seeing an increasing number of routes to market.

In this new era, there is a danger that packaging becomes inefficient. But in the future, developing the right pack formats will open up possibilities for brands to significantly reduce their impact and connect in increasingly relevant ways with consumers.

In this section, we share some of the trends and 'new-news' relating to distribution, and retail of FMCG products which has changed the way we use packaging.



Channel ready

Purchasing products without visiting a bricks & mortar store is now a popular option for consumers across almost every category. This now happens at the touch of screen with e-commerce purchases increasing and retailers taking an omni-channel approach to ensure that consumers can buy whatever they want, from whatever they are using. Even appliances like next-gen smart fridges are potentially set to order their own food stocks in the future!

This means redefining the purpose and function of packaging. We are seeing packs move away from simply 'rewrapping' traditional retail packaging, towards something that is perfectly suited to – and even enhancing - the new experience of shopping online. From a marketing perspective, brands are starting to consider on-screen aesthetics, which is very different from traditional competitive settings in-store. Some enterprising brands use the physical packaging to engage consumers once products are received at home, compensating for a reduction in brand engagement in traditional retail settings.

Changes are also occurring to ensure that products move through next-generation supply chains safely and securely and offer consumers easy, convenient delivery.

Find out more >



Packaged for you

Consumer behaviours, preferences and tastes are more likely to be influenced today and in the future by geography and experience than age - meaning that brands targeting a specific generational cohort could potentially be limiting themselves.

Packaging **technology, such as digital printing**, will allow brands to have more targeted appeal to the individual, regardless of specific age or gender…whilst **modular and customisable design** will enable the individual to browse and curate products, in a way that suits them, according to their own unique preferences.

Find out more >



Low-impact distribution

With an increasing number of products being packaged and shipped to individual home addresses rather than bulk deliveries to stores, there is a risk of increased strain on the environment…however careful consideration of packaging structure and technology could help to reduce impact.

As brands consider shipping stock in more flexible ways, from using shared third-party transport to adopting new drone technology, packaging is **engineered for optimum space efficiency** to avoid shipment of excess air and to increase storage capacity for customers.

Refills and concentrates are being developed in order to increase consumer convenience, variety and loyalty. Since the immense success of Nespresso, many brands are exploring the advantages of 'systems' such as this. When bespoke, branded packaging works in conjunction with a product system, it has the added advantage of 'locking' consumers in.

In the future, reducing the shipping of excess water (and avoidable weight) via concentrated product formulas and refill packs has just as much appeal for many producers.

Find out more >

Connections | Channel ready

Now





Letterbox Friendly

New letterbox sized packs are emerging across numerous categories – from wine to flowers. The most exciting letterbox friendly packaging examples are those that can be addressed directly, thus do not require secondary packaging. Amazon are specifying that products which can be delivered via the letter box have packaging that is 'right sized' to facilitate many more products being delivered via postage networks vs bespoke delivery, which creates efficiencies.



Frustration-free

Amazon's commitment to next-gen packaging is an initiative designed to alleviate "wrap rage" by incentivising suppliers to put products in packaging that's easier to open and with less material. The company wants to minimise the number of secondary shipping containers and make primary packaging from suppliers "fit to ship".



Brand engagement at home

Snack delivery pioneers Graze cleverly utilise print on the internal space of the delivery packaging to bring consumers a taste of the brand and connect with them via the packaging.

In the future...



Fridge friendly packaging

RFID (Radio-Frequency Identification) technology could eventually replace barcodes. "Smart fridges" of the future could have RFID readers embedded to **read the packaging** and update consumers via their phone on food integrity, use-by dates as well as having the potential to auto-reorder finished items.



Packs that fly!

We expect ecommerce retailers such as Amazon to develop more drone delivery options with increasing sophistication in protective packaging and increased efficiency. This will be particularly relevant for rural or remote settings. African countries such as Rwanda anticipate drone delivery being the preferred method for many items within the next decade after the success of Zipline already delivering specially packed medical supplies by drone.

< *Back to Trends*

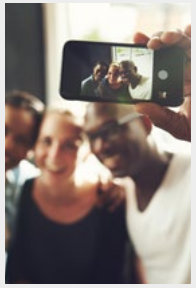
Connections | Packaged for you

Now




Tailoring and personalisation

Australian innovators Vinnovate have developed a new functional screw cap bottle closure with a built-in, on-demand dispensing system that allows people to tailor wine aroma and flavour, or remove preservatives at the push of a button.

DIY packaging

Latest digital printing technology allowed Kit Kat to launch an online campaign around sharing - supported by their packaging – in which consumers could upload a photograph of themselves to appear on their own exclusive pack.



Made for you

Beauty brand Nu Skin is offering consumers a skincare system called AgeLOC Me that lets them mix a unique combination of serums at home according to their requirements and other factors (such as age, skin type and habits) for a truly personalised experience. This transforms the way beauty products are packaged to allow them to be combined and personalised via a delivery system.

In the future...

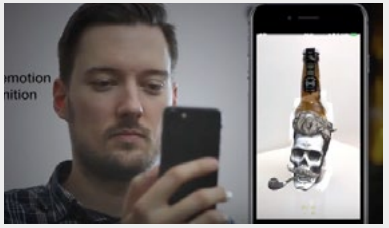



DNA matched products

We predict DNA matched products increasing in sophistication, with the trend for DNA "matched" customised products increasing and packaging playing a crucial part in this.

We are already seeing companies like Vinome use your DNA to select wines that best suit your unique palate! Likewise, KUVEE are pioneering touchscreen refillable wine bottles that relay a multitude of information beyond what can be contained on a 2D label matched to your wine preferences.

We predict functional food, beverage and cosmetics that leverage DNA matching with futuristic packaging that takes advantage of tailoring product information to particular consumer needs or preferences.



talkin' things

Packaging that knows how you feel!

MCC (multi colour corporation) are developing a label that uses Augmented Reality facial recognition. It adapts the AR experience and video content (which would launch automatically on your smart phone depending on your mood!) in an attempt to engage and sell the brand via the pack in authentic, relevant ways based on how you're feeling at that moment!

< Back to Trends

Connections

Low-impact distribution

Now



Space efficient packs

German Supply chain experts Arvato SCM Solutions have a pressure sensitive unit to measure and automatically cut shipping packaging into the exact size required for a delivery. For retailer C&A, this has led to a reduction of materials as well as the ability to better optimise shipping, cutting transport volume by around 250 truck journeys per year.





Shipping less water

Drinkfinity are revolutionising the way consumers access flavoured beverages. A reusable water bottle interacts with proprietary, recyclable pods containing dry flavourings which are released into the water at the moment of consumption. The pods use approximately 65% less plastic per ounce of beverage and 7 times fewer trucks to deliver vs an average 500ml RTD drink.



Dilute at home

Brazil based cleaning brand YVY range uses 40 millilitre capsules that contain super-concentrated formula that are inserted into a reusable PET bottle and diluted in-home. Aside from reducing the amount of plastic by around 2.26kg, this system also means shipping 90% less water.

In the future...



Self-sizing packaging

Ebay USA has introduced a new AR app that helps sellers decide on the correct UPS Flat Rate shipping box to use for their items, simply by letting their phone size up the item for sale and advise on the correct box to comply with US postal requirements.

Ebay says this technology will help sellers reduce the time required at the local post office looking for the right-sized box, and provide real-time calculation of shipping costs, creating efficiencies for everyone involved.



Shipping refills and concentrates

There have been pioneering innovations to develop a concentrated formula for beer despite this flying in the face of the integrity of the brewing process for many. Commercial brewers are keeping an eye on technologies that could revolutionise product delivery and the cost of shipping liquids in future.





Packaging Free 'Printed' Products

3D printing is rapidly evolving. As innovation in this area continues at pace, consumers are able to buy their own printers for in-home use that can print basic everyday items, **mitigating the need for packaging and delivery altogether!** We are also starting to see the beginnings of 3D printed food designed in shapes which are difficult to achieve by hand or with a conventional mould. (See the Avocado Octopus example). 3D printed food technology could also have a significant impact on food and packaging waste in future.

< *Back to Trends*

How to get started

How prepared is your business for the changing ways in which consumers are connecting with products? Are you making the most of the opportunities for brand engagement and sustainability that e-commerce could offer? How are you currently set up to respond to individual tastes and preferences of your potential consumers?

If you wish to future-proof your packaging to enable consumers to connect with your products in the best way possible, it's worth finding out:

- How suited to the e-commerce channel is your packaging? Is it optimised for on-screen browsing, security, safe transit and convenient delivery?
- What can packaging offer to compensate for consumers missing out on the in-store experience? How can you elevate how your consumers encounter, browse, select and purchase products online?
- What is the impact of e-commerce on your supply chain? Can packaging be optimised to reduce shipping excess air, weight or water?

Activity

Order a product of your own online (this may be via your direct website, or via an online retailer) and consider whether the experience - from browsing and purchasing to transit, delivery, opening and disposal – reflects the brand in the way you would ideally like it to.

Write your thoughts...









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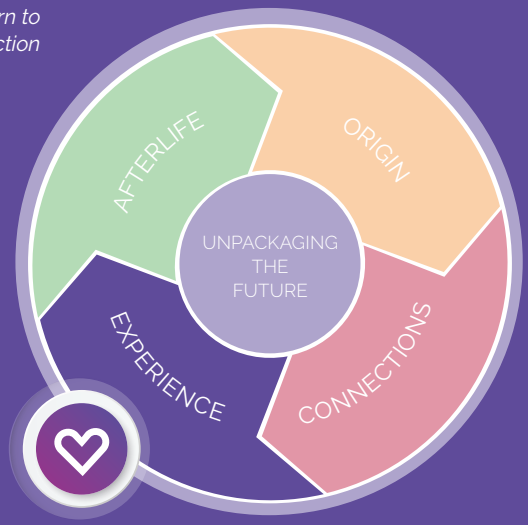


Experience

Enhancing perception of products and brands...

Amongst new generations of consumers more value is placed on the **experience** a product can give. As we have already established in looking at the themes of ORIGIN and CONNECTIONS, packaging plays an intrinsic part of the overall experience of a product. Brands are therefore needing to rethink how to be competitive and differentiated via packaging in future.

Packaging 'experience' is set to go far beyond current functional conventions to provide brands with new and novel platforms for engagement, offering consumers connection with others, improved communication and product delivery, and possibly even enhancing the sensations of consuming a product.

In this section, we detail the key packaging trends and 'new-news' relating to usage and experience and how packaging will be a major influencer here.



Bringing consumers closer

We have seen physical packaging enabling consumers to share products with each other, the recent Walkers Tear and Share pack is a great example of this.

Increasingly we envisage packaging being used in more creative ways to bring people together.

This opens up opportunities to share more than the physical product itself and creating a more immersive interactive sharing experience via social media.

Find out more



Back to basics

There is a general trend toward getting 'back to basics' especially in the area of food and drink with consumers being much more conscious about what they are consuming, and with a greater desire for no frills simplicity, whilst retaining convenience benefits wherever possible.

In light of recent environmental scares about over-packaging, manufacturers are also reassessing the role that packaging plays – either by stripping it back or by making packaging work harder to preserve freshness and avoid food waste.

Packaging also plays a pivotal role in communicating origin and ethos, with many companies adopting a "back to basics" aesthetic to reassure consumers.

Find out more



New sensations

Packaging provides opportunities to ensure the consumer experience of a product is as memorable and as relevant as possible…

Developments in materials are allowing technology and innovations in structual design to enable brands to **influence and even improve the sensorial properties** of a product whilst it is being consumed.

From crispier crisps, to colder beer, a brand or product equity is made more memorable in an increasingly competitive global FMCG market place.

Find out more

Experience

Bringing consumers closer

Now



New technology with old fashioned values

Cadbury used Amcor's MaXQ digital packaging technology to bring an added extra to their valentine's packaging this year. By scanning the pack, consumers can attach a personal video message to the box – elevating the gifting experience and eliminating the need for a card. MaXQ technology also allows consumers access to product information, promotions, and even allows them to have a live conversation with the brand online.





Near Field Communication (NFC)

Near Field Communication (NFC) offers information at the moment it is required by holding a device (such as a smart phone) near packaging that has been NFC enabled.

Fitness brand Six Star is using NFC on its packs to increase functionality. When the pack is tapped with a consumer's smartphone device, users can launch a range of bespoke digital services including videos, recipes and product reordering.



Snap-chat ready packaging

Pepsico are targeting younger, social media savvy consumers with selected packs during the latest NFL season. Consumers are encouraged to unlock digital content and share the brand online – when they take and share a photograph of the specially coded pack, they will be assigned an NFL team, and if their team wins, they win rewards.

In the future...



Voice controlled packaging

Taking a nod from the popularity of in-home voice activated technology (e.g. Alexa, Google Home), Jim Beam have created a special edition smart decanter that serves shots upon demand. Perhaps not a pack that will reach the mainstream, however this demonstrates the possibility of merging of the packaging world with popular consumer technologies.



'Anti'-Social media at the dinner table

Although it has only been generated for the purposes of a social media campaign, Dolmio used a high tech pepper grinder at dinner tables to disrupt family devices for the duration of the meal time, in order to create their memorable campaign idea – Pepper Hacker.

While we don't see this becoming a mainstay for future disposable packaging, it's important to recognise that some brands are going to be on the lookout for ways to help people physically connect and facilitate more family time scenarios as a point of difference in an increasingly 'digital' future.

< *Back to Trends*

Experience

Back to basics

Now



Stripped back information

In order to prevent consumers from discarding perfectly edible fresh product, Tesco will be removing the Best Before information from 70 fresh items in-store.



Freshness detection

Insignia Technologies have developed smart labels which use colour change to enable packs to indicate to consumers how fresh the contents are after opening – from 'fresh' to 'still fresh' to 'past best'. This label technology is to be adopted by Sainsbury's in order to vastly reduce the amount of sliced ham that is wasted every year in the UK.



Cooking from 'Scratch'

There has been a surge in scratch cooking options giving consumers a more involved cooking experience, whilst taking hassle out of the meal making process. Brands like Gousto and Simply Cook are using their packaging to play a major role in facilitating ease and convenience both in delivery and simple step by step usage to get consumers back to the basics of cooking, but empowering them to attain great results with ease.

In the future...



More than groceries on your doorstep

We envisage more and more fresh food delivery direct to consumers becoming viable in most European markets. Brands like Able & Cole in the UK and Farm Box in the US are already pioneering this with simple stripped back basic 'brown box' packaging, that's engineered to be flat packed and collected for reuse by the delivery service.



Packaging make-overs

Urbapothecary is a direct to consumer cosmetics business, that tailors products and packaging to the customers' request. In future we envisage more companies offering a 'back to basics' option with minimised packaging that's fully recyclable or biodegradable, at the consumers request.





Good Hydration..

Consumers have recently adopted a 'back to basics' stance in terms of staying hydrated, simply by drinking more water more regularly. In future, brands like DrinKup will combine the best in packaging technology with stripped back simplicity to inform consumers on hydration levels, manage health and wellbeing, and help tap water taste fresh and natural.

< *Back to Trends*

Experience

New sensations

Now



Packs that jump out in store

Polish brand Mila are experimenting with wi-fi enabled packs. An inbuilt proximity sensor could make the pack shake and jump when a consumer approaches in store to mimic the movement of recently caught (live) fish. It's a radical example of how packaging and advances in technology could help to engage consumers in totally new, sensorial and innovative ways to draw attention to their products in store. We expect similar pack gimmicks to become popular for smaller brands who want to invest in packaging that gets them noticed (and listed) in a sea of sameness.



Crispier chips

US potato company Lamb Weston's patented packaging solution uses a series of air vents to keep their chips hot and crispy for up to 30 minutes – vastly improving the consumer experience in the food delivery context during which the delay between cooking and eating means that the quality of the product can deteriorate.



Smooth texture

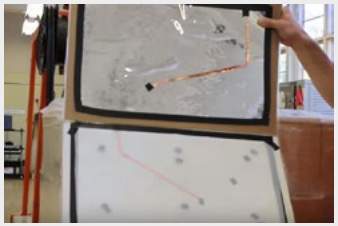
Nescafe Azera's new launch Nitro uses nitrogen-infused cans, activated upon opening, to deliver a uniquely smooth textured RTD coffee drink. This technology is planned to be rolled out across on-trade environments such as cafés and bars as non-alcoholic beverages begin to feature as prominently as alcoholic ones.

In the future...



Sounds Refreshing

Indian mineral water brand Himalayan Sparkling has launched a 'sound cap' bottle designed to play the sound of wind from the upper reaches of the Himalayas when you twist open the cap of the bottle to evoke the source of the product! Although products like this are limited-edition currently due to the cost of integrating technology, in future we anticipate brands finding low cost ways to create more evocative brand experiences and sensations that support brand equities.



Packaging that can power itself

Researchers in Carolina, USA, are developing a process to generate electrical charges in a packaging material when it comes into contact with friction. Still years away from completion, this technology will open possibilities for sensorial enhancement via packaging – bringing light, scent, heat and sound to packaging in future.



Self-cooling and heating

Developments in self-cooling and heating technology are progressing, California based company Joseph have a more commercially and technically feasible solution for the mass market. RTD coffee and tea businesses are now working with them to explore the possibilities for revolutionising the category – and indeed the entire OTG drinks category across the globe.

< *Back to Trends*

How to get started

How well do your products respond to your consumers today...and tomorrow? Are you as close to your consumers as you would like to be? Is the consumer experience of your product as memorable as it should be?

If you wish to understand how packaging can play a role in bringing you closer to consumers and their lifestyles, helping you to enhance the experience of your product, start by considering:

- How much do you know about how consumers use your products? When, where, with whom, how, why...
- Have you considered whether your future packaging initiatives could be better integrated with your digital strategy?
- Do you have a product that needs to communicate and provide a freshness experience? Do your products match or outperform competitors in this area. If not, how could they?
- What sensorial properties are most important to your product, and what do your consumers expect from the category? Texture, temperature, scent...

If you have concerns around evolving the consumer experience via packaging, it is important to ask:

- What level of packaging complexity do you feel is relevant to your product/ brand/category?
- Are you generating packaging for novelty/impact or a sustained consumer benefit?
- How are changes in your packaging - in line with sustainability goals - going to affect the consumer experience of your product?

Activity

Consider the way your products are currently packaged. Do they enhance the sonsorial properties of the product or do they detract from the desired experience? In an ideal world, what would you like the packaging to do to elevate the overall product experience or enhance the way consumers used it?

Write your thoughts...











click to return to the introduction



Afterlife

A responsible contribution to the future

Although, in many cases, packaging represents a small proportion of most manufacturer's overall impact (vs the production of the product itself) it is often the only thing that remains in consumers hands or households once food or drink has been consumed. Packaging is therefore a clear and immediate representation of a brand's commitment to sustainability... Considering the 'afterlife' is therefore as crucial as every previous step in the packaging lifecycle.

In a successful circular economy, the end must integrate with the beginning – and there is no truer expression of this than recycling. Packaging technologists and scientists are working alongside governments to **improve our global recycling rates.**

When recycling is not possible, some brands are considering **compostable** pack materials, to generate **efficient and positive** outcomes instead of harmful waste, whilst other manufacturers are more actively considering the future of closed loop systems that greatly increase the number of times a pack and materials can be used.

As consumers become increasingly engaged in sustainability, then perhaps there are opportunities for more significant changes in their behaviours and routine... we might even see the **disappearance of packaging altogether** for many products that are overpackaged today.

In this section, we detail the key packaging trends and most exciting 'new-news' relating to disposal.



Unpicking recycling

There are significant regional variations in recycling infrastructure across the globe.

Even within individual countries intentions to make packaging more compatible with recycling infrastructure or put more infrastructure in place are often deprioritised or not cohesive with other regions.

Current infrastructure isn't able to deal with all forms of recyclable material. **Selection of a material** – in particular when choosing a certain type of plastic – is key to having confidence in what will happen to it.

Packaging is most simply recycled when it is made from a single "mono" material, and so **selecting mono material or easily separable formats** results in a higher chance of it being fully recycled.

In the spirit of supporting the circular economy, investment is being made to **break down materials more comprehensively** to create ultimate flexibility and maximum value, enabling the optimum value to be retained when materials are recycled back into mainstream FMCG material commodities, rather than being downcycled into lower value industrial products such as drainpipes or car bumpers.

Find out more



Biodegradable or compostable

When recycling is not a possibility, it is essential to consider where the waste packaging will go as excessive landfill is fast becoming a global environmental and political issue especially where engery recapturing facilities are not available.

In the event that packaging cannot be recycled, you need to consider biodegradability and the infrastructure available.

Biodegradable means that something will break down with the help of micro organisms and biological processes.

Most things will biodegrade, but this often takes a long time.

Compostable means that something is not only biodegradable but that it can decompose relatively quickly. It can also act as a fertiliser or soil enrichment in the best scenarios.

Therefore, when packaging formats can't be recycled, manufacturers are being encouraged to invest in compostable packaging. But what can be truly classified as compostable is under scrutiny.

Find out more



Reuse or return

Reusable packaging is emerging across almost every category. This has exciting implications for the volume of packaging circulating within the food and drink industry.

Packaging that can be reused requires a change in established consumer behaviour. Brands are incentivising not only **returns** but also the use of **reusable packaging** formats by designing them for a **more premium or permanent look and feel**, or even offering **optimised functionality or convenience.**

Adopting reusable packaging on a wider scale, requires **consideration of the entire infrastructure involved**. Brands selling online are developing delivery packaging in conjunction with their supply chain and infrastructure to create a holistic solution.

Find out more



Future consumers... the end of packaging?

With changing attitudes toward sourcing, accessing, experiencing and the after-use of product and packaging, there are indications that consumers would be willing to make dramatic changes in their behaviour.

What if packaging as it is today – predominantly disposable, and widely unrecycled – were to **disappear?**

Certain categories are beginning to operate with reduced, or even eliminated, packaging – considering **new approaches to each moment of the packaging lifecycle**, from initial brand engagement, product protection to consumption experience – **offering** exciting new opportunities throughout!

Find out more

Now



Consider what material is most likely to be recycled

Polypropylene, a common packaging plastic, is cheap to produce in the first place, but therefore has a low value as a recycled material. So, it is far more likely to be sent for landfill or incineration.



Make it easy

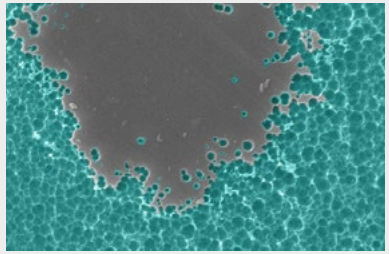
When mono-materials aren't possible, materials and components that consumers are able to separate into mono materials will ensure individual component recyclability. Yeo Valley have tackled this issue on their yogurt pots with an easily separable sleeve, and Waitrose have recently made their sandwich boxes more easily and intuitively separable.

In the future...



New methods

Unilever are partnering with Ioniqa Technologies and Indorama Ventures to pioneer new ways to recycle PET back into transparent virgin grade material on an industrial scale, with the exciting potential to make the PET stream fully circular.



Natural solutions

A potentially ground- breaking development from the University of Portsmouth could revolutionise PET recycling. A plastic-eating enzyme has been discovered that is able to 'eat' PET. Although recyclable, discarded PET remains for 100 years before it eventually degrades. This enzyme is the first known protein capable of digesting polyethylene. The team are now working on improving the enzyme further to allow it to be used industrially to break down plastics much more quickly.

< *Back to Trends*

Afterlife

Biodegradable or compostable – what does it mean and what's best?

Now



Naturally Flexible

Nature Flex flexible pouches are made using FSC wood pulp and can be composted at home and at industrial facilities depending on their specification. Its carbon footprint is just 43% of of the level of cellophane, yet it still has an excellent gas and moisture barrier.



Plant Power

Vegware is a global manufacturer of plant-based compostable foodservice packaging. Cups, takeout boxes and food containers are made from renewable, lower carbon or recycled materials, and – crucially - can all be composted with food waste where accepted. Vegware supplies businesses in places as diverse as Edinburgh, Sydney and Hong Kong, with on-site composting and collection services across the UK.



Inspired by bananas

Snact packaging is not only biodegradable but also is compostable. Snact celebrate the fact that their packaging does both and therefore, whether it gets into land fill or is composted by consumers, the net result is that it disappears and (supposedly) leaves no trace of its existence vs conventional plastics wrappers

In the future...





Are compostables the answer?

Although presenting a potential solution to excessive landfill, compostable materials do not contribute to a successful, continued circular economy.

More than meets the earth...
Studies are also beginning to consider the impact of the micro-particles of plastic that remain after composting. Unless there is significant change and investment in infrastructure on a wide scale, compostable materials may have limited appeal in the future of packaging.

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Afterlife | Reuse or return

Now



Freiburg coffee cup

Pioneered in Freiburg to tackle the problem of unrecyclable coffee cups, this reusable – and recyclable - coffee cup system allows consumers to pay €1 for a reusable cup that can be returned to any participating business in the city. The scheme is now emerging across multiple cities in Germany.



Reward good behaviour

Mexico City have rolled out a deposit system innovation called Biobox across the city – consumers who deposit their used PET packaging are rewarded with free transport. For each PET container or aluminium can that the user deposits into the special Biobox collection boxes, they are rewarded with points for travel via bus, train or metro, which has become a very engaging incentive with plans to roll out 300 more!



Reverse vending machine

Co-op are piloting first-of-their-kind reverse vending machines for use at the top UK festivals this summer. Co-op will charge a mandatory deposit for the use of their disposable drinks bottles, and these machines will provide consumers vouchers upon return of their used packaging.

In the future...



Smart drink dispensers and payment enabling bottles

Coca Cola are piloting a reusable water bottle scheme across UK Universities. Refillable microchip bottles allow consumers to purchase drinks without money changing hands – setting up an online account linked to the bottle itself.



Retro innovation

Sometimes old innovations come full circle! We can expect a resurgence of water fountains in future, with many initiatives to make water more accessible in the desire to reduce single use plastic water bottles.

London's Borough Market has claimed that the introduction of free drinking water fountains is a big step towards the area becoming "plastic free". Borough Market intends to phase out all sales of single use plastic. Likewise fountains will be placed in each of Paris' 20 districts and other major European cities this year.

< *Back to Trends*

Afterlife | Future consumers... the end of packaging?

Now



Bulk buying

The drinks industry is exploring how bulk packaging may reduce single-use packaging. Borough Wines sell wine via large bulk containers in-store. Consumers purchase a single reusable glass bottle which can be refilled at the store each time.



Packaging-free supermarkets

Shops that are attempting to reuse or limit the use of packaging.

Encouraging consumers to provide their own containers when purchasing dry goods. In the mainstream, Morrisons in the UK will be piloting a packaging-free deli system, whereby consumers bring their own containers and simply receive a label to place onto it to indicate the product and price of their purchase.



Refill and go

Homecare brand Ecover enables consumers to reduce the amount of packaging via refill stations across the UK, stating that a single piece of refillable packaging can be reused more than 50 times. For extra convenience, they offer bulk packaging so that consumers can refill less often.

In the future...





Grass roots initiatives will gain traction

In future, communities will have more of a say about what is socially acceptable as people unite to find viable alternatives to plastic. We envisage lots of green grass-root initiatives that are emerging already such as the coffee cups in Freiburg Germany or initiatives like the GOGREEN campaign in the villages of Glasthule and Sandycove in south county Dublin, now being trialled as plastic free areas. This was started by a number of small businesses and traders who were passionate about seeing meaningful change. Brands that encourage this behaviour and adopt it for themselves will lead the charge and reap the rewards early on if they can get ahead of the curve now.



Business incentives will be the drivers for meaningful packaging change

With packaging innovation, the most significant problems seem to be associated with razor thin margins and commitments to existing infrastructure. Businesses need economic incentives to innovate. Increasingly, the incentives come from the demands of an educated and affluent consumer, but this is not a global trend. To accelerate the rate of adoption of innovation in packaging and materials, we need to see development of long-term economic incentives for businesses. This could include policy instruments, tax incentives or mandates and global alignment and investment by big businesses with global scale.



The next generation will inspire and catalyse action

Regardless of geography or socio-economic status, concerns about kids' health always take priority. In more affluent communities consumers are more concerned about the environmental impact of their packaging choices. The rise of the millennial generation supports this trend and it will likely continue to expand and gain more traction across the globe.

< *Back to Trends*

How to get started

Once consumed, how much of your packaging remains in the hands and homes of consumers? Does this packaging represent your business commitment to sustainability?

If you wish to know more about what really happens to your packaging after use, or are excited by the prospect of eliminating packaging altogether, it is worth considering...

- What do you know about the markets that you are targeting in terms of infrastructure and consumer recycling behaviour?
- Could your packaging – or any element of containment of your product throughout the supply chain – be reused?
- Have you considered whether your packs could be made from bio-degradable and/or compostable packaging if they can't be fully recycled?
- What are your competitors doing? Is this an area where you can own category shifting new news, that's attractive to customers and consumers alike?
- Is there a longer term category wide conversation that you could be starting, which may change the way in which packaging is used in future in your category or with your retail partners? What ideas do you have to stay ahead of the curve on this?

Activity

Consider how you currently use packaging to communicate your brand equities. Could you retain (or better still improve) these equities by considering your packaging's suitability in each of the afterlife scenarios here.

Write your thoughts...

Glossary

Augmented reality: a technology that superimposes a computer-generated image on a user's view of the real world, thus providing a composite view.

Bio-based: Material or product derived from biological or renewable resources.

Bio-derived: a material intentionally made from substances derived from living (or once-living) organisms.

Biodegradable: able to decay naturally and in a way that is not harmful. Biodegradable packaging helps to limit the amount of harmful chemicals released into the atmosphere.

Biomass: Biomass most often refers to plants or plant-based materials that are not used for food or feed, and are specifically called lignocellulosic biomass.

Biopolymer: a polymeric substance occurring in living organisms, e.g. a protein, cellulose, or DNA.

Blockchain: is an emerging technology that enables digital records to be attached to products at each point in the manufacture and supply chain allowing for detailed and real-time accurate tracking of the product from origin to final delivery.

Carbon footprint: the amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organisation, or community.

Carbon negative: a phrase used to describe any activity that removes more carbon CO2 from the atmosphere than you are responsible for creating.

Circular economy: an alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.

Closed loop: a production process in which post-consumer waste is collected, recycled and used to make new products.

Compostable: To degrade into an organic material that can be used as a fertiliser or soil enrichment.

Feedstock: Raw material (input) fed into a process for conversion into something different (output).

FMCG: Fast moving consumer goods.

Frustration free packaging: Amazon Certified Frustration-Free Packaging is recyclable and comes without excess packaging materials, such as hard plastic clamshell casings, plastic bindings and wire ties.

High-density polythylene (HDPE): a kind of thermoplastic which is famous for its strength and ability to withstand high temperatures.

Modified atmosphere packaging (MAP): enables fresh and minimally processed packaged food products to maintain visual, textural and nutritional appeal via a controlled environment within the pack, enabling food packaging to provide an extended shelf life without requiring the addition of chemical preservatives or stabilisers.

Mono-material: A package in which the body, cap, and label are all composed of the same material.

Near-field communication (NFC): a short-range wireless connectivity that uses magnetic field induction to enable communication between devices when they're touched together, or brought within a few centimetres of each other.

OTG: on the go

Polyethylene terephthalate (PET): High gloss, crack-resistant transparent plastic used largely in making bottles.

Polypropylene: a synthetic resin, which is a polymer of propylene, used chiefly for films, fibres, or moulding materials.

Post-consumer: noting or pertaining to a product after it has been used and recycled.

Radio frequency identification (RFID): Automatic identification technology, which uses radio-frequency electromagnetic fields to identify objects carrying, tags when they come close to a reader.

Renewable: A natural resource or source of energy that is not depleted by use, such as water, wind, or solar power.

RTD: ready to drink

SMEs: Small to medium-sized enterprises OR Subject Matter Experts

Virgin plastic: the opposite to recycled plastic. It is newly manufactured plastic.

Virtual reality: computer-generated simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way.

Closing comments

We hope this brief overview of the future packaging landscape, influenced by these 4 overarching themes has provided you with food for thought about how you and your business might respond. Touch and Bord Bia are working in collaboration to help businesses make the most of the new opportunities on the horizon, where packaging will play a significant role, and avoid the pitfalls and challenges that come with it. If you wish to get in touch for a consultation with either Bord Bia or Touch please contact:

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Good thinking on packaging template

Bord Bia
Irish Food Board

Good thinking...on packaging

touch
PACKAGING INNOVATION

1 DISCOVER

INSPIRATION What themes, trends and examples have you discovered which inspired you during the presentation?

TRENDS?
OBSERVATIONS?
COMPETITOR ACTIVITY?

2 DEFINE

WHY? Develop your thoughts about why this is inspiring and what the implications are for you.

PROBLEM?
PRESSURE?
POTENTIAL?

3 DEVELOP

IDEATION What would you like to challenge yourself and your company to do in response to this?

AMBITIONS?
POSSIBILITIES?
NEW WAYS?

4 DELIVER

RESOLUTION What can I do to move the ideas forward

Outline Plan & Next Steps

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