

WHITEPAPER

Lucky Cow: The Future of Zero-Waste Packaging

Lucky Cow redefines the way in which we create food, packaging, and services to reduce—dramatically—the environmental footprint of consumer packaged goods (CPG). Our goal is to create great products that people need and want, engineer packaging that is simple to reuse or dispose of responsibly, and help shoppers better understand the conservation steps taken by manufacturers throughout their supply chain.



Introducing Lucky Cow

Lucky Cow is a conceptual dairy company, created with a mission to define zero-waste future food containers. Lucky Cow's first product is a family of yogurts—dry, solid, and fresh—each with a different form factor and package created to meet consumer needs with a radically low-environmental impact.



So Why Yogurt?

EPAM Continuum has a long history designing new product experiences, from [Daisy Brand Squeezable Sour Cream](#), to the [Swiffer](#), to the [Insulet Omnipod](#). Each of these projects came with their own challenges: food safety, universal design, cold chain considerations, and multiple packaging formats. Yogurt, that tried-and-true staple, runs the gamut in terms of challenges and opportunities for innovation.

Globally, yogurt is an \$88 billion dollar industry, with nearly a dozen primary types available in every manner of tub, tube, and pouch. From our research with customers, we know that yogurt is beloved for its versatility, its health impact, and its great taste. Although yogurt is convenient as a quick meal replacement or ingredient, it's not without its drawbacks. Yogurt tends to be consumed regularly which leads to a lot of visible waste, and the sanitary requirements for yogurt are high, which precludes more rudimentary sustainable solutions.



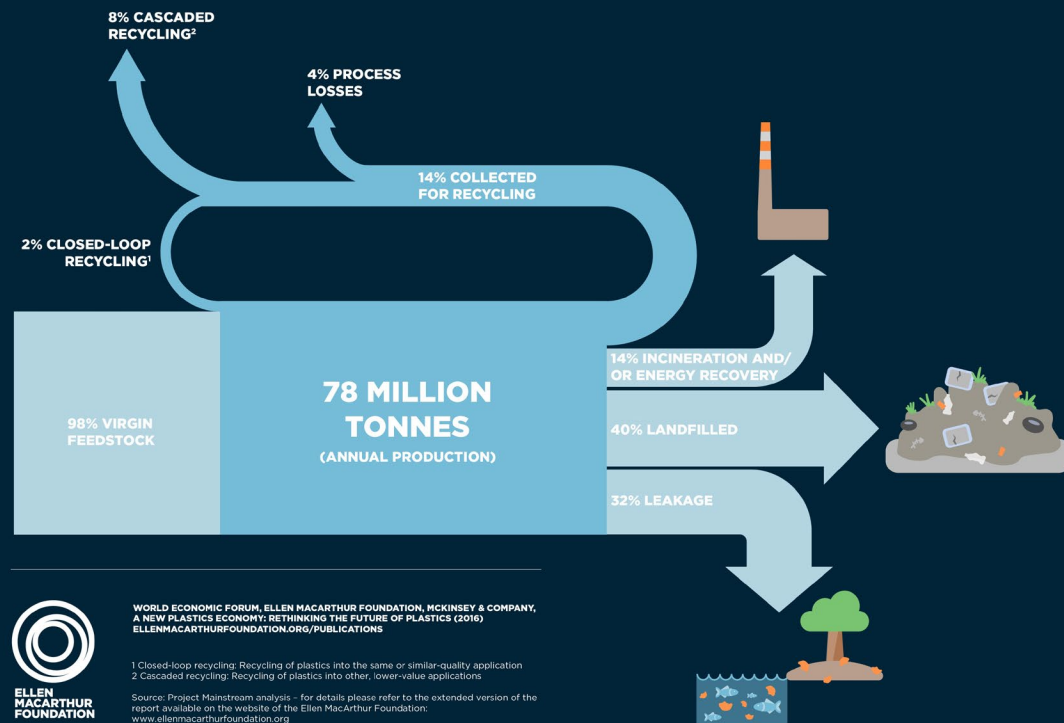
We can't recycle our way out of the environmental and economic impact of plastic.

THE IMPACT

We will have to think differently: beautiful packaging and smart design is no panacea for the challenges created by the sheer amount of plastic we generate—8.3 billion metric tons over 60 years¹; the waste it creates: about 300 million tons per year², approximately the total weight of every human on earth; and the damage it does to our ecosystems: 8 million metric tons of plastic wind up in our oceans annually³. The devastating impact of plastic is not constrained to the natural environment. The global economic loss due to 95% of plastic having short, single use life span is between \$80-120 billion (2016) annually⁴. There is an upside though. \$10 billion can be saved globally if just 20% of plastic is replaced with a reusable alternative.⁵

Recycling alone will not get us out of this mess; we need solutions that radically change our relationship with plastic and the self-awareness of our individual contributions to the massive complexity of the plastic ecosystem.

TODAY, PLASTIC PACKAGING MATERIAL FLOWS ARE LARGELY LINEAR



Recycling By the Numbers. It's Not Pretty.

The current state of recycling plastic packaging makes it clear that our current process, systems, and habits have failed to meet the ideals of recycling.

78 million metric tons of plastic packaging is produced globally each year.⁶

Only 14% is recycled and **only 2% of plastic is recycled "effectively"** meaning it becomes something of equal use to its initial purpose.⁷

8 million metric tons of plastic flow into the oceans annually. At this rate there will be more plastic than fish in the ocean by 2050.⁸

The type five polypropylene plastic container (indicated by the #5 in the recycling symbol on the bottom of your yogurt) means that **only 3% of the plastic can be recycled**⁹

¹ <https://www.nationalgeographic.com/science/article/plastic-produced-recycling-waste-ocean-trash-debris-environment>

² <https://www.unep.org/interactive/beat-plastic-pollution/>

³ <https://www.weforum.org/agenda/2021/07/reusing-plastic-waste-pollution-economy-value/>

⁴ http://www3.weforum.org/docs/WEF_The_New_Plastics_Economy.pdf

⁵ <https://archive.ellenmacarthurfoundation.org/explore/plastics-and-the-circular-economy>

⁶ <https://www.nationalgeographic.com/environment/article/food-packaging-plastics-recycle-solutions>

⁷ <https://www.weforum.org/agenda/2021/07/reusing-plastic-waste-pollution-economy-value/>

⁸ <https://www.weforum.org/agenda/2021/07/reusing-plastic-waste-pollution-economy-value/>

⁹ <https://yesstraws.com/blogs/news/types-of-plastic-plastic-numbers-guide>

Sustainability alone isn't enough to make a product desirable.

Stepping Back

Sustainability. It's a trendy buzzword currently flying around in business circles, but what exactly does it mean for our organizations, our consumers, and our planet? To answer this complicated question, we conducted ethnographic interviews and an anonymous survey with our global EPAM community.

A resounding 79% of people responded that it is at least somewhat important that their packaged goods are zero-to low waste, yet they also responded that environmental footprint and package format are not strong factors in their yogurt purchase decision. So, what is going on here?

Going Forward

Consumers feel a compelling desire to do their part for the environment, but it's not always clear just what that part is. Environmental impact is defined broadly and the impact of any individual consumer action is hard to see. For this reason, most consumers are hesitant to give up any existing core values of the current yogurt experience. **The ideal path forward is through the value of the product.**

Yogurt table-stakes

Creating a Culture of Sustainable Yogurt

Lucky Cow's family of yogurt products adhere to three core principles that align with our respondents' needs:

- 1** The yogurt is above all tasty, delivering on the single most important factor for yogurt purchase.
- 2** It is also clean to consume, and doesn't introduce additional barriers to use or dispose of.
- 3** Critically, the packaging and its materials were thoughtfully considered to ensure recycling them was mindless and fit into existing behaviors.

1. Tasty

No spoilage,
saving money

2. Clean

No mess,
saving stress

3. Mindless

No new behaviors,
saving time

A new relationship to empower behavior change without changing habits.

The Circular Economy for Plastics

The Lucky Cow project and concepts builds on the vision created by the Ellen MacArthur Foundation to:

Eliminate the plastic we don't need
by scaling innovative new models that deliver products to customers with reusable or no packaging.

Circulate the plastic we do need
to be reusable, recyclable or compostable.

Innovate at unprecedented speed and scale
new business models, product design, materials, technologies, and collection systems.

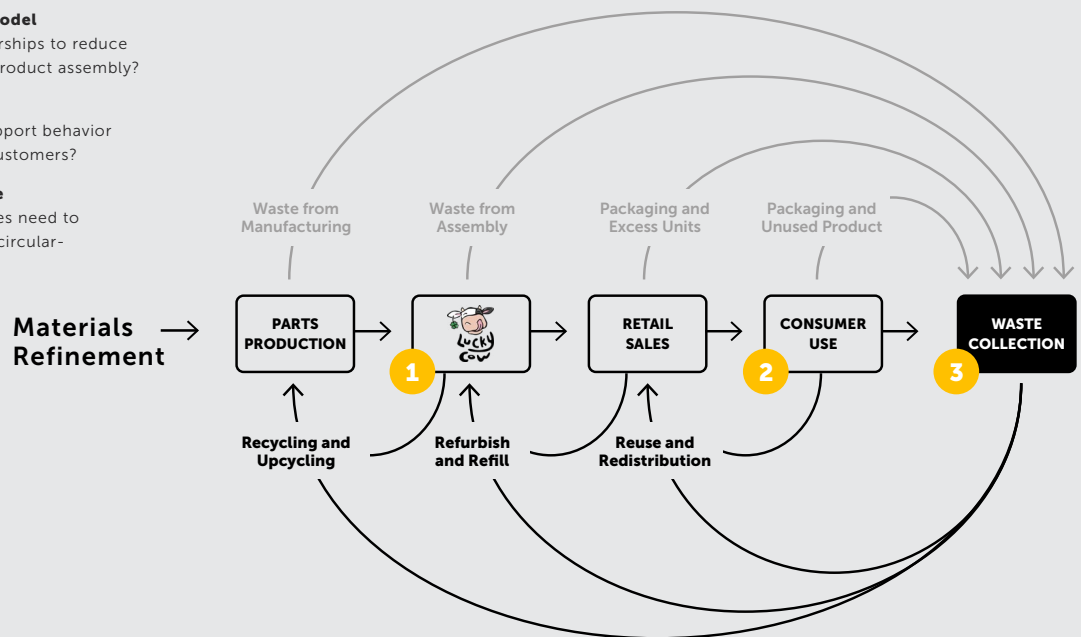
The circular economy benefits our planet, the people living on it and the businesses that consume its resources. It has the potential to reduce the volume of plastics entering our oceans by 80%, reduce greenhouse gas emissions by 25%, and generate savings of 200 billion annually.

To make sustainability in CPG work, we must redesign the system and the product. Fewer steps, smaller loops, and less waste are necessary tactical decisions. To make it stick, we must also take a human-centered approach to build new relationships and nudge old habits.

Lucky Cow Dairy is a conceptual dairy company aimed at replacing the plastic used for packaging yogurt, reducing food waste through non-perishable yogurt, and rethinking the supply chain of yogurt packaging by putting humans at the center and building solutions around their needs, values, and behaviors.

¹⁰ <https://www.newplasticseconomy.org/news/study-confirms-need-for-urgent-transition-to-a-circular-economy-for-plastic>

- 1 Redefining the Commercial Model**
How can we create new partnerships to reduce waste coming into and out of product assembly?
- 2 Redefining Context of Use**
How might we envision and support behavior change and consumption for customers?
- 3 Redefining Product + Package**
How do the products themselves need to change in order to make them circular-economy-ready?



At EPAM Continuum we are grounded in making the future real. The concepts in this report, inspired by research with customers, are meant to be thought starters—the beginning of an ongoing conversation and creative collaboration. We invite and implore you to challenge our ideas, our hypotheses, our solutions and add to them.



WHERE WE ARE TODAY:

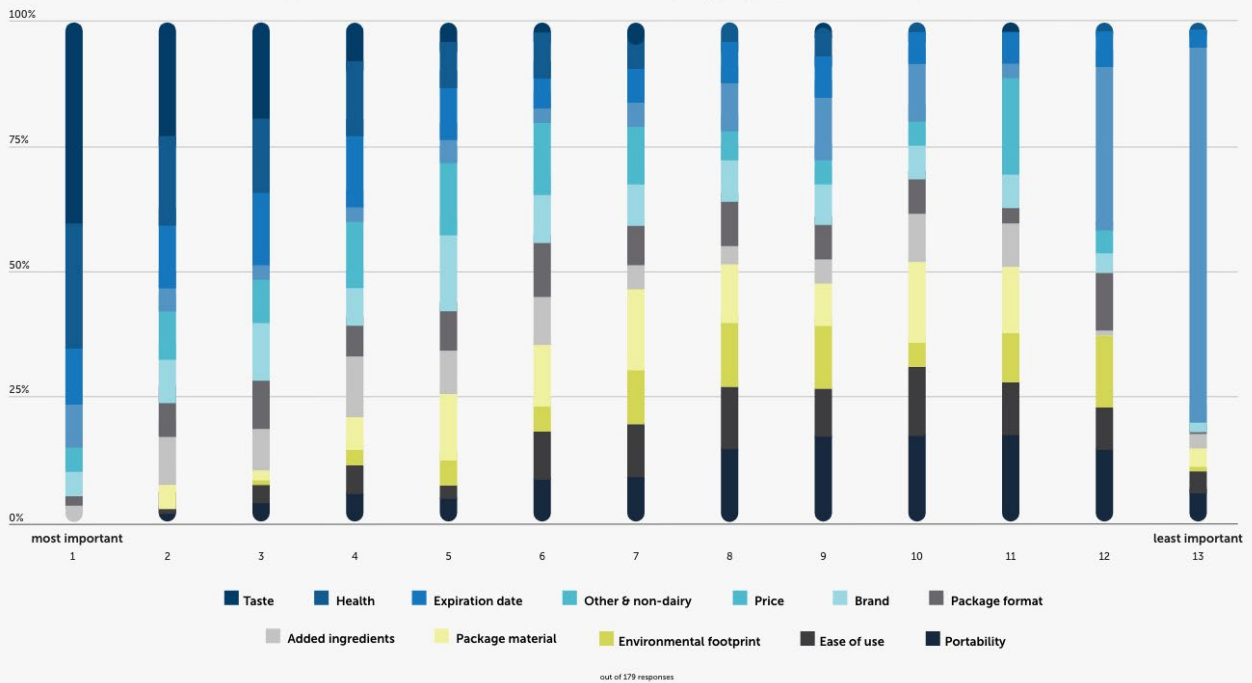
Package, Product, and Consumer

WHERE WE ARE TODAY:

Determining a New Value Proposition

To create a product that truly resonates with customers—particularly if it’s new to the world—we need to go back to basics. What support do they require? What are their unmet needs? From our research (yogurt and beyond), most participants put sustainability as one of their top goals, but when compared to other considerations such as price, taste, health, form factor, and function, being “eco-friendly” quickly falls near to the bottom of the list.

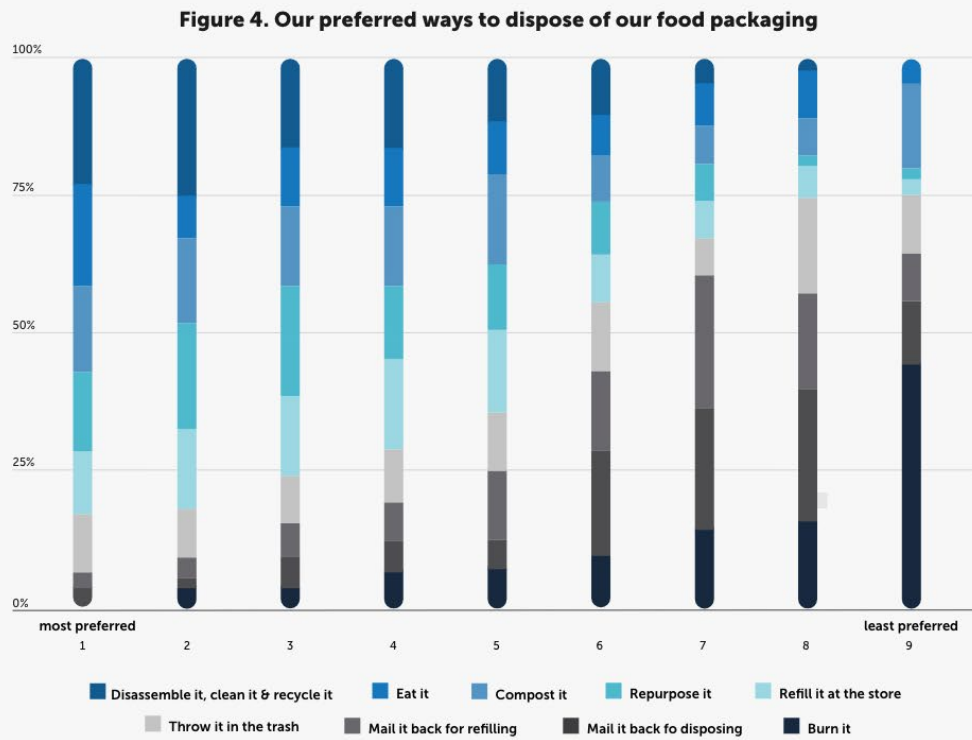
Figure 1: Our main considerations when buying yogurt, in order of importance



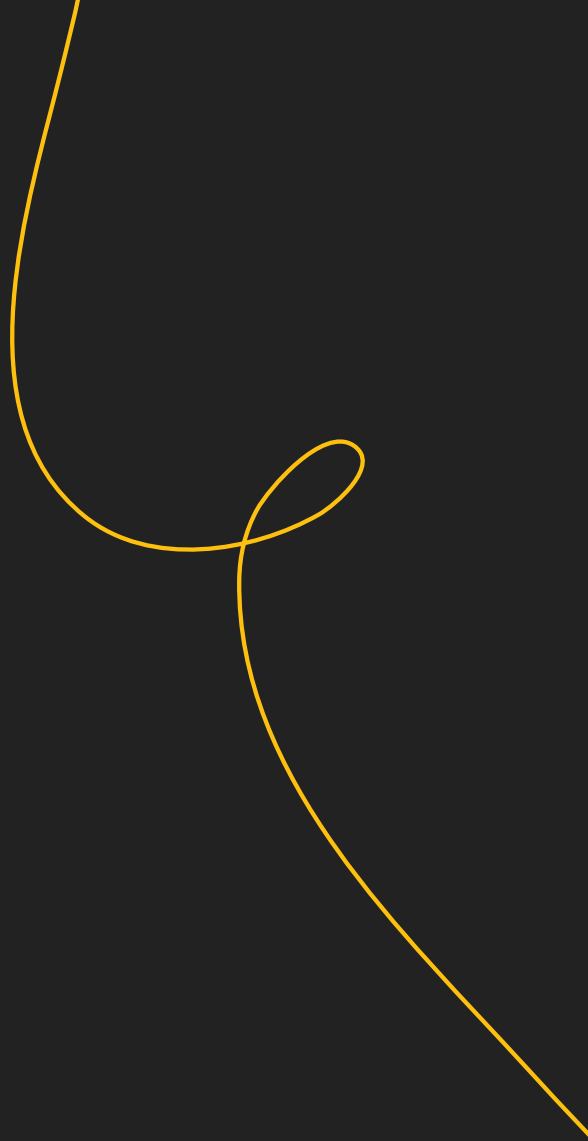
WHERE WE ARE TODAY:

Factoring in Disposal

Consumers want something that creates less mess and less waste without compromising taste, convenience, and health benefits. The most preferred method was to disassemble, clean, and recycle which aligns with the desire for no additional work and wanting what they are already familiar with. We also found that 20% of people would be amenable to eating the package itself and 20% would be open to re-purposing it, which opens the door for a compelling new yogurt experience.



out of 179 responses



CONCEPTS:

Three Formats. One Platform.

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Three Formats. One Platform.

Problem:

Economically, single-use plastics generate \$80-120 billion in losses annually. From a human perspective, they are part of complicated recycling program with seven classifications that has a steep learning curve and is complex to do right.

CONCEPT



From Single to Multi-Use

Replace the single-use plastic container with a reusable glass jar and a service ecosystem that follows the successful Milk Man model. This creates two choices for the customer: Return the jar to market where it was purchased or keep it home for a new use.

¹¹ http://www3.weforum.org/docs/WEF_The_New_Plastics_Economy.pdf

¹² <https://www.nationalgeographic.com/environment/article/food-packaging-plastics-recycle-solutions>

CONCEPT



From Single to Multi-Use

Recycling how it should be: easy and effective. Aluminum has the highest recycle rate and can be recycled infinitely. This means metal tins will seamlessly integrate into existing behaviors, habits and processes.

Problem:

The current recycling ecosystem can't keep pace with humanity's production of 78 million metric tons of plastic packaging waste annually. And the energy, water, and transportation costs just add to the harm.

CONCEPT



Back to Nature

Design a package that benefits the environment regardless of its final destination in the compost bin, recycling center, incinerator, or landfill.

CONCEPT:

Bottomless Refills

From Unnecessary Plastic to 100% Reusable Glass

Yogurt packaging today uses an enormous amount of plastic, most of which ends up in the landfill—only 3% of the plastic per individual yogurt container can be recycled provided the container has been cleaned before being placed in a recycling bin and is free of containments. Because of the low recyclable value, many curbside recycling programs no longer recycle the type five polypropylene plastic container used for yogurt.

To solve this problem, we're proposing a service ecosystem centered around refillable durable jars that can be reused at home or returned to the store for a discount on the next purchase. Plus we know food just tastes better from a glass container. To manage logistics, the Lucky Cow loyalty platform tracks usage, rewards, and personal preferences.



BENEFITS

Eliminates the plastic we don't need in service of reducing the growth of plastic use by 50% by 2040.

Easy-to-understand choices to avoid creating more waste.

Globally, replacing 20% of single-use plastic with reusable alternatives represents a conservative estimated USD \$10 billion savings.



¹³ <https://yesstraws.com/blogs/news/types-of-plastic-plastic-numbers-guide>

¹⁴ <https://plastics.ellenmacarthurfoundation.org/breaking-the-plastic-wave-perspective>

¹⁵ <https://archive.ellenmacarthurfoundation.org/explore/plastics-and-the-circular-economy>

1. Tasty

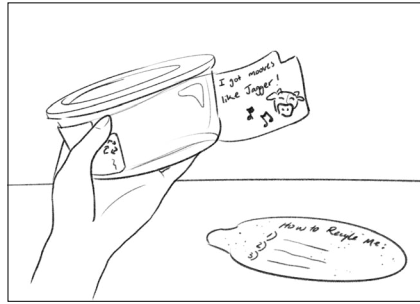
No spoilage,
saving money



With our changing preferences in flavor, convenience, and use, we're always on the search to find just the right yogurt—a search that can be wasteful and costly. **Lucky Cow allows you to customize your profile for personalized suggestions on new and existing flavors.** Fresh yogurt also comes in two sizes—a single-serve jar and multiple use jar. And we know from our research with consumers that yogurt from a glass jar just tastes better than plastic.

2. Clean

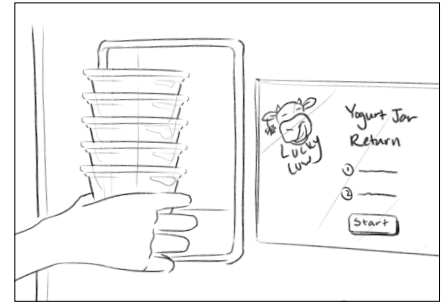
No mess,
saving stress



People are often unclear about how to recycle food-soiled plastic packaging. Rinsing out the container is necessary, but instructions are either unclear or it's just an unpleasant experience to do so. **A simple rinse out is all you need: When it's returned it will be professionally cleaned and sanitized.** We also incentivize a rinse out with QR codes, jokes, and stories that can be revealed at the bottom of the jar once empty.

3. Mindful

No new behaviors,
saving time



A glass jar minimizes waste, and the service ecosystem around it makes it convenient to return the glass to the grocery store. Mass yogurt packaging currently meets the needs of manufacturing: The type five polypropylene plastic container is ideal for durability, and the plasticized foil seal on top is an economical and superior barrier to protect and preserve the yogurt. However, these materials are hard to recycle, and while they meet functional demands, their impact on the environment is consequential.



CONCEPT:

Long-Life Versatility

Reusable and Recyclable By Design

Never pass the expiration date again: Ditch the tub, grab a tin. For your all-purpose needs, we're introducing long-life dry yogurt. These freeze-dried dollops can be combined with water, milk, or cream and reconstituted to use as a snack or an ingredient (and they're tasty enough to eat as is). Measure out the right amount in the gradated cap, or eat straight from the can.

As for the aluminum can, it's a superstar in the recycling world. It has a recycling rate of 74% and it can be infinitely recycled which has allowed for 75% of all produced aluminum to remain in circulation. So, When you're done, you can toss the fully aluminum can straight in the recycling bin with confidence it will have yet another life in just 60 days.



¹⁶ <https://aluminiumtoday.com/news/international-aluminium-institute-publishes-global-recycling-data>

BENEFITS

Making a new aluminum can from old cans results in 90-97% energy savings, compared to making a new can from bauxite and other raw materials.

Recycling as it should be, easy and efficient. Making a can from recycled aluminum saves 90% to 95% of the energy needed to make a net-new can.



¹⁷ https://eurekarecycling.org/wp-content/uploads/2019/08/composting_factsheet_0.pdf

¹⁸ <https://www.treehugger.com/the-benefits-of-aluminum-recycling-1204138>

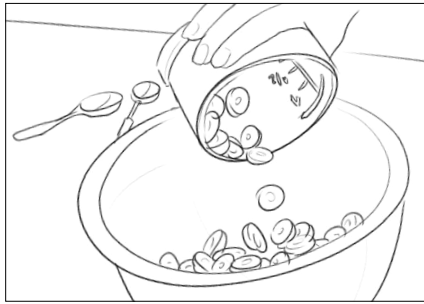
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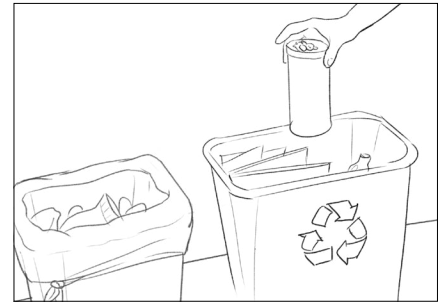
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3. Mindful

No new behaviors,
saving time



We buy yogurt for its versatility—nearly 60% of people used yogurt as a sauce or as a dip, smoothie, cooking, baking, or a dessert. The huge tub people typically buy it in has to be stored in a fridge, and it takes up space. If forgotten at the back of the fridge, the yogurt goes bad and gets wasted. **The pellets have a longer shelf-life and they can live in the pantry for easy access whenever they're needed.**

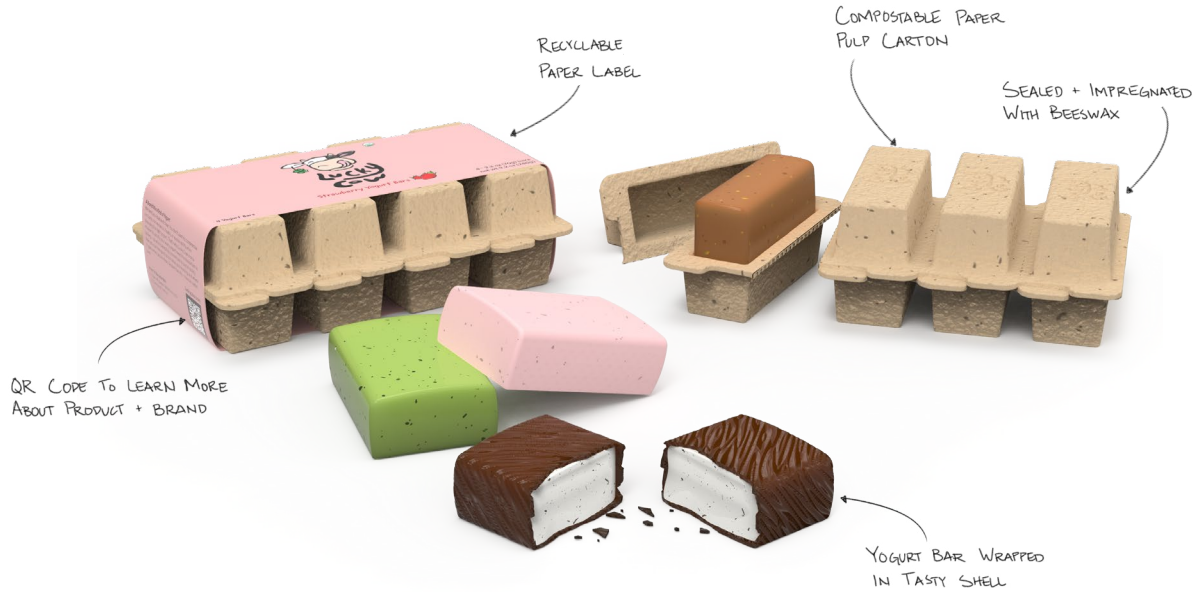
In freeze-dried dollops, there's little mess to begin with. The built-in measuring cup cap makes portioning out the right amount a simple task. Yogurt easily dissolves into the mixture and incorporates to bring its tangy goodness to any food adventure.

Ready to recycle the can? Just drop it into the recycling with the rest of your household waste—it's that easy. Metal is easy to recycle and has the added benefit of a manufacturing process that is not closely tied with the negative perceptions of plastic.



CONCEPT:

Solid Choice



Natural. Renewable. Compostable.

Life is too hectic to worry about what to eat and the clean-up after. We've reimagined the yogurt experience by creating a high-density yogurt bar with the same nutrients and taste that you expect from traditional formats. The yogurt bar is a mess-free treat or meal on the go, packaged in an easily compostable dairy-safe container.

Nature Knows Best

Regardless of its final destination, compostable packaging has the least amount of impact throughout its entire lifecycle. Even if this package winds up somewhere other than a compost bin, the benefits of it being created from natural, renewable resources exceed the downsides of recycling.



Compost Bin

The ideal destination creates the condition to avoid the creation of greenhouse gas emissions. Healthier soil sequesters more carbon dioxide and uses less fuel to till because it's more workable.



Recycling

While meant to biodegrade into nutrients to help grow the next crop of resources that will make the next package, the paper pulp carton allows this package to be recycled as paper if it's thrown in the recycle bin instead of the compost bin.



Incineration

A chemical-free package made from natural sources makes burning a safe destination.

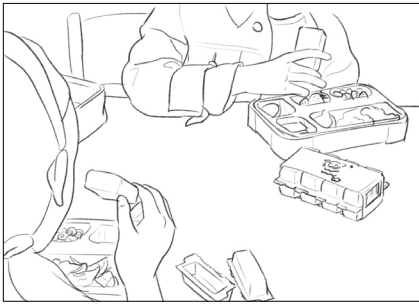


Landfill

The least ideal destination is offset by the elimination of any plastics, chemicals, or minerals being used to create the package.

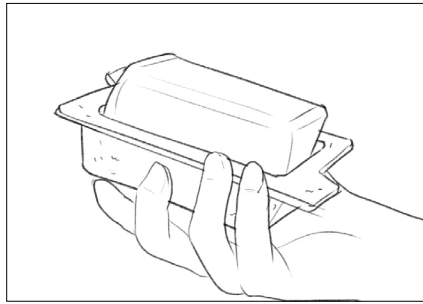
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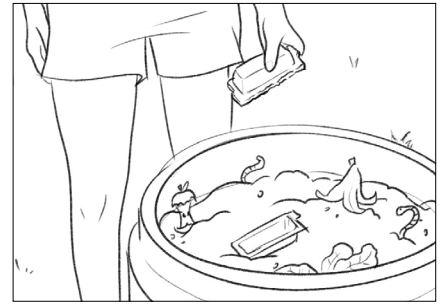
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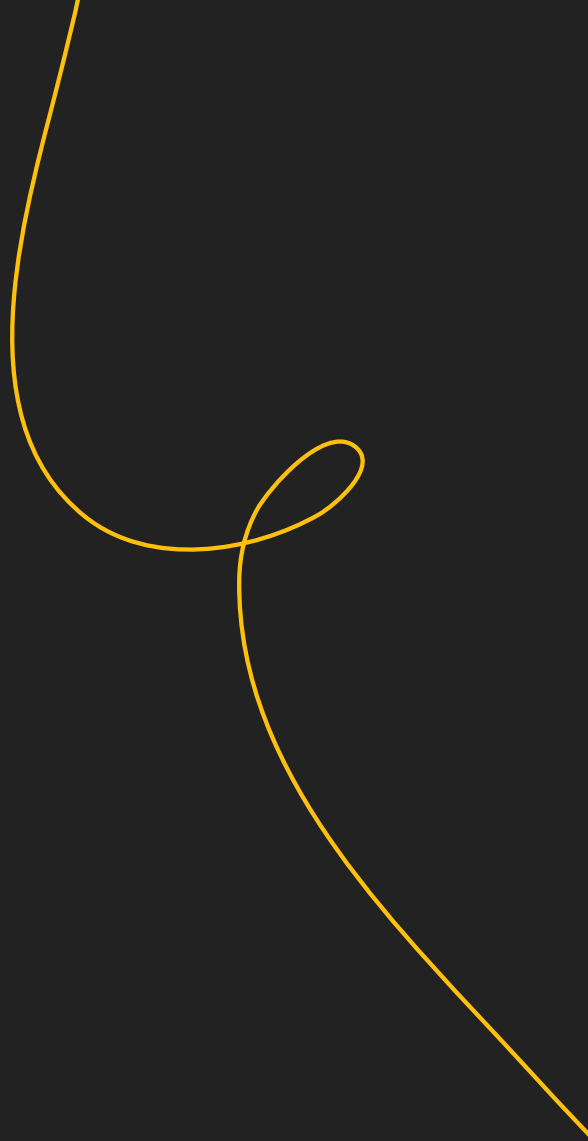
66% of people ranked taste and health as the top choice when buying yogurt. It can be exhausting to also have to prioritize other things like eco-friendliness. The constant search to find the right yogurt can be wasteful and costly. With the bars, there's no compromise; you get a variety of flavors and combinations that come in eco-conscious packaging.

Whether eaten on the go or given to kids, yogurt can get messy. **A solid format with packaging that doubles as a holder reduces smears and fears.** Yogurt in bar form brings a little bit of fun to this treat. In changing the form, yogurt now feels a little bit more like an ice cream sandwich or a candy bar, but healthy.

The packaging is 100% compostable—when you're done, just drop it in with your other food scraps and don't give it another thought. No rinse necessary. It saves time from start to finish. Since the carton is perforated it can be bought in bulk and disposed of individually with no additional steps or waste.



Completing the Ecosystem



Innovation creates new expectations and empowers customers to shift behaviors.

Blend Space™

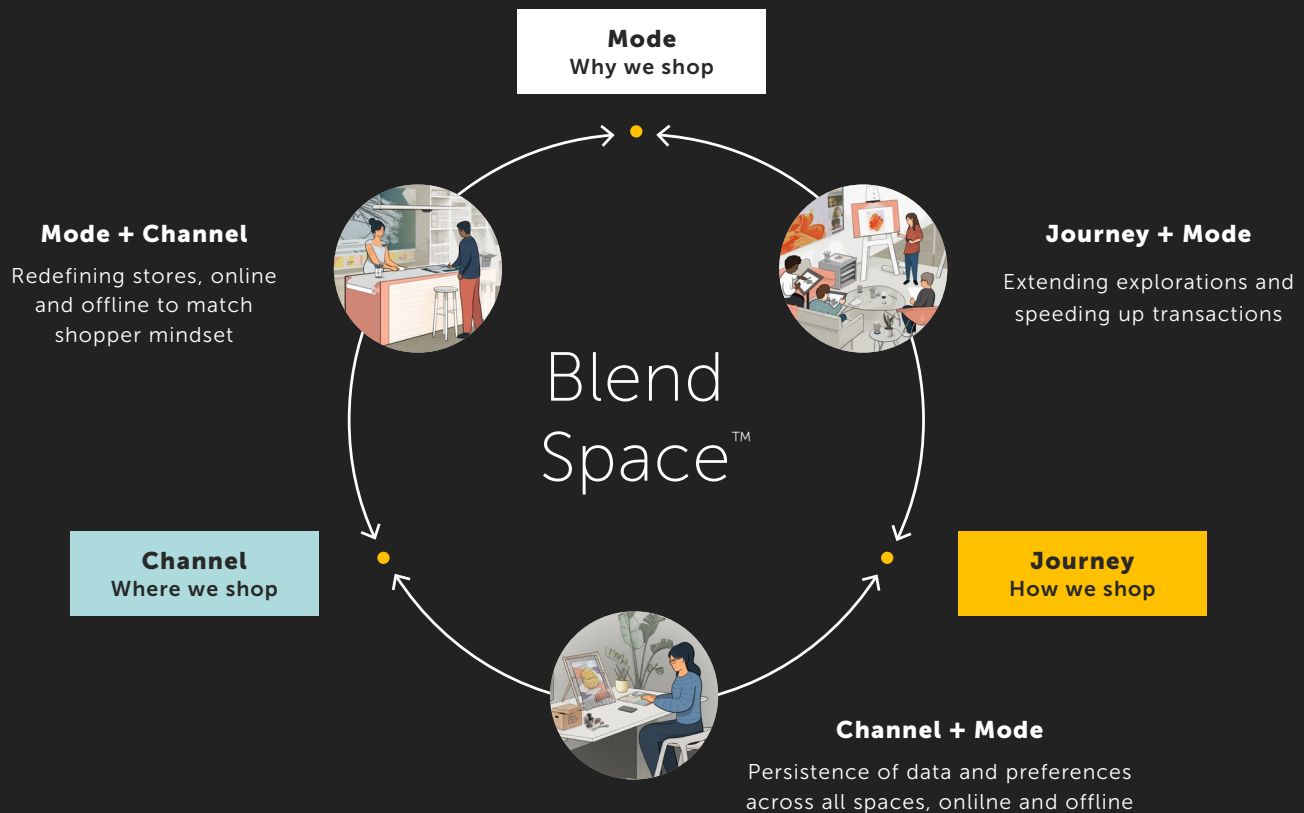
When done right, technology unlocks exceptional experiences especially at the blend of the digital and physical worlds. Blend Space is an approach to create more resilient retail operations and experiences. We've applied this method in multiple sectors, from cosmetics to kayaks.

Connecting Channels

There have never been more ways to engage with brands and each channel serves its own purpose. In-person retail, with its multi-sensory experiences and non-linear environments, is great for finding something new. Online shopping, with easy payments and an endless stock room, is ideal for repeat purchases.

To create truly great Blend Space experiences, brands can use digital and physical tools to drive engagement and efficiency, but only if applied at the right part of the journey.

For Lucky Cow, unlocking the benefits of Blend Space means, in-store, QR codes that allow customers to learn about sourcing and ethics practices and can establish stronger, more meaningful connections to the brand. Online, customers can easily locate where to purchase their favorite flavors. And, Lucky Cow can utilize in-store and online technology to simplify the return process and elevate the positive impact each customer is making. This holistic approach ultimately helps customers establish a new routine and provide the reward critical in establishing new habits—digital and physical tools to drive engagement and efficiency, but only if applied at the right part of the journey.



Connecting the Digital Ecosystem

Anticipate Needs, Exceed Expectations.

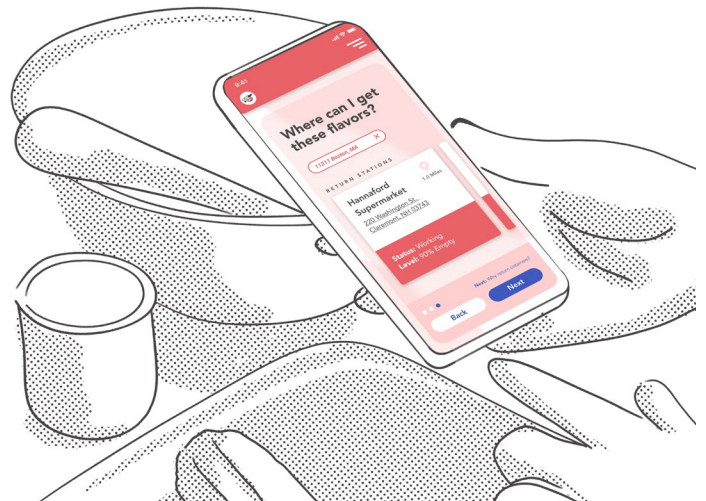
To create and strengthen the relationships Lucky Cow wants with customers, technology should be deployed to augment the human experience with the intent to help customers fulfill their needs and support them as their context and purpose shift between functional / emotional and transactional / experiential shopping modes.

The following concepts illustrate and explore how Lucky Cow might unlock the benefits of Blend Space.

HELP ME...

Find the Right Yogurt for My Needs.

Finding out which flavors are in stock at a store can be challenging. Customers can easily locate where to purchase their favorite flavors. We offer an updated view of which stores have the Lucky Cow flavor the customer seeks.

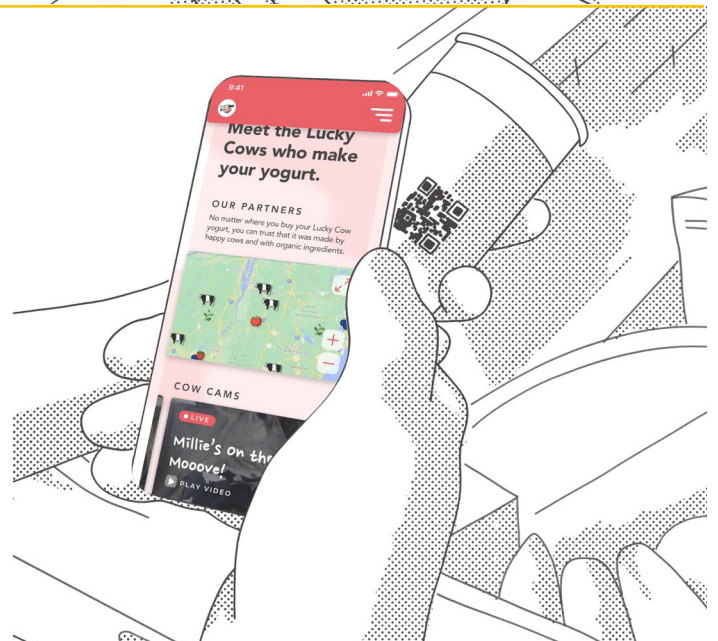


HELP ME...

Understand Lucky Cow's Brand Values.

Customers can establish a stronger connection with Lucky Cow by learning about the local farmers and their ethics that go into making Lucky Cow yogurt, whether it's milk, seasonal fruit, or other ingredients.

The farmers we work with love to showcase their cows and land. So we offer livestream videos whenever the cows are playing, being fed, or pasturing, and they are not shy!

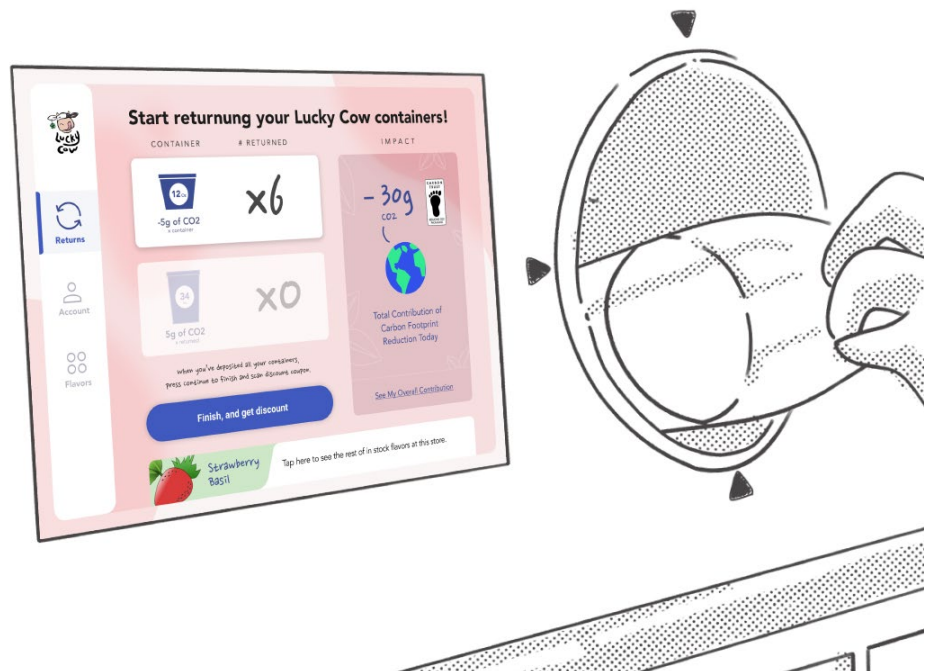


Return My Yogurt Containers.

Technology incentivizes customers to return glass containers. By simply taking a picture of the QR-code printed on the back of the label, customers can locate the nearest return station.

At the return station kiosk, customers can see right away the positive environmental impact they have by returning containers. Carbon Footprint Labeling shows consumers that Lucky Cow is accountable for having carbon-neutral business practices, from production to commercialization.

Customers can also browse flavors and easily determine which ones are in stock at that particular store.



Get Started from Where You Are Today.

Projects like Lucky Cow aren't an end-state, they're a process for creating a more intuitive relationship between customer and product. Truly disruptive value creation projects are a coordinated undertaking in strategy, product design, and manufacturing infrastructure.



Made Real Lab.

Accelerating product development by bringing ideas to life, the Made Real Lab is a global practice that is made up of prototypers, collaborative workspaces, tools & technologies, and a prototyping-centric methodology.

What We Do

The Made Real Lab prototypes new-to-the-world ideas, so clients and consumers can touch, feel and experience them for the first time, at scale.

Why It Matters

Physical and digital prototypes enable our teams and clients to make confident decisions, faster, by validating concepts, mitigating technical risk, and substantiating business value early and often.

Blend Space: Shopping in an Uncertain Future.

Brick and mortar isn't gone, but its purpose has changed. Part showroom, part neighbor, part shipping center: Stores are no longer a final destination in themselves; they're simply the most tangible node in a network of connected brand moments. And, just maybe, they sell things, too.

Blend Space isn't an end-state, it's a process for creating a more intuitive relationship between customer and brand. True omnichannel experiences are a massive undertaking in strategy, change management, and physical infrastructure. Having a future-state vision can get you there faster, but every near-term initiative and decision can move you closer to a human-centered retail.

EPAM Continuum integrates business, experience, and technology consulting focused on accelerating breakthrough ideas into meaningful impact.

The Future. Made Real.™

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**Interested in talking about delivering great retail experiences?
Get in touch with us if you'd like to discuss how to apply this to
your business or learn more about our innovation design work.**

epamcontinuum@epam.com

Join the conversation:

www.epam-continuum.com