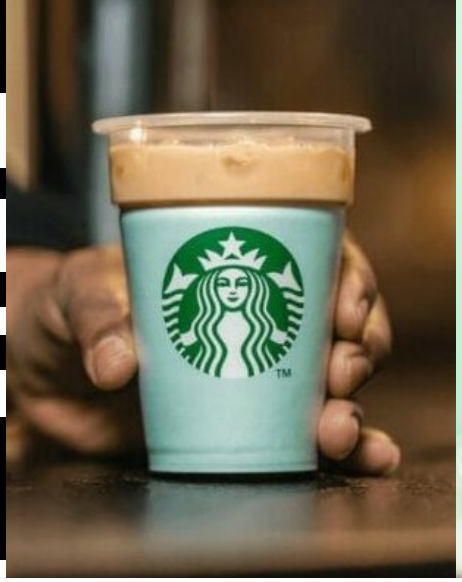

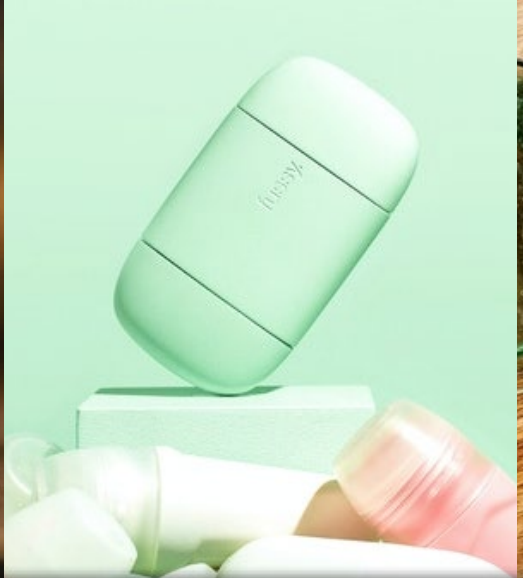

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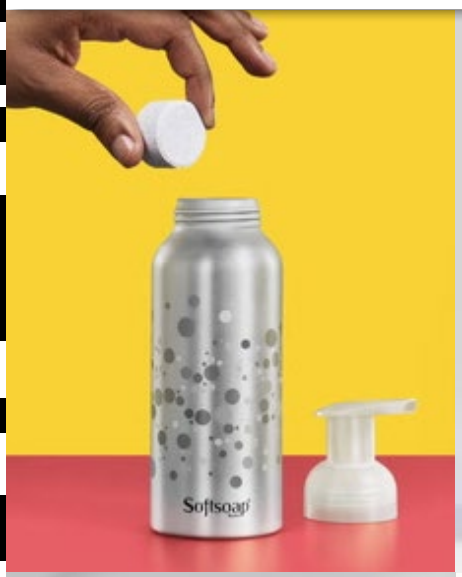
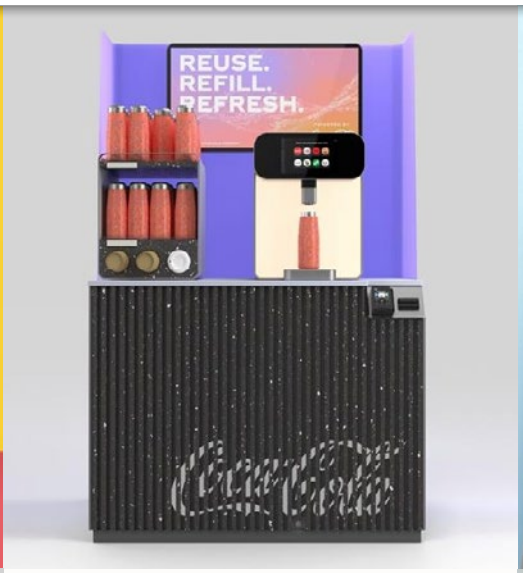
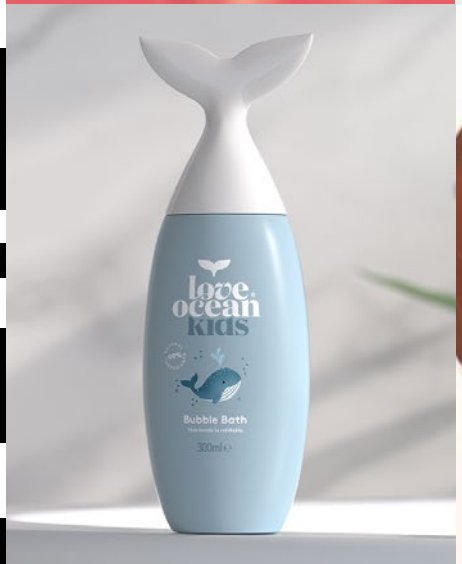
Refillable & Reusable Packaging Compendium

Volume 2







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Tell me about you and your reuse history

My career has been a journey touching three areas. One, I've got background in government affairs and politics both in work history and education, including a master's degree in political management here in Washington, DC. I always thought I was going to be a political guy, but wound up in trade associations, particularly with the fruit and vegetable industry. Government affairs roles have always been a nice fit for me.

It requires some diplomacy, working with the broad strokes of members, representing that diversity for common issues in the market. My work in reusable packaging started when I moved from a trade association to the company IFCO Systems. I was involved with IFCO as a lead in new business developing reusable plastic containers (RPCs) for perishable food commodities from farm to retail.

I was able to be in the field working in product development bringing to market new RPCs for bananas, fresh eggs and strawberries, for example. I really understood the practicalities of not only design for performance packaging, but its system development to be effective in the real-world reuse environment.

I always draw from experience of being in the field and really understanding what it takes for a complex reusable system to work and to be effective in the marketplace. I brought that experience when I joined the Reusable Packaging Association, marrying the trade association role that I've had in the past with the work that I performed developing reusable packaging systems.

When at IFCO, I was involved in RPA as a member. I understood what the organisation was about, as I was part of its history and strategic planning. When I joined RPA I had a good understanding of the association's business and what it took to advance its objectives.

It's such a detail-oriented business as far as developing reuse models. I was able to experience the complexities firsthand and ultimately how to go about the design, development, and execution.

What role does your organisation play?

The Reusable Packaging Association is a nonprofit trade organisation that was established in 1999. Over 20 years, we've been active as advocates of reusable packaging systems. Our focus has been on supply chain business-to-business, distribution of products and commercial goods in the market.

We focus more on products like pallets, intermediate bulk containers, bulk bins, RPCs, racks, trays, totes and anything that's moving goods continuously through the supply chain. As a nonprofit, we bring our members together to raise awareness about the opportunities of reusable transport packaging systems.

We collaboratively work across our diverse membership on projects that are going to advance the common business interests of our members and make an impact in positioning

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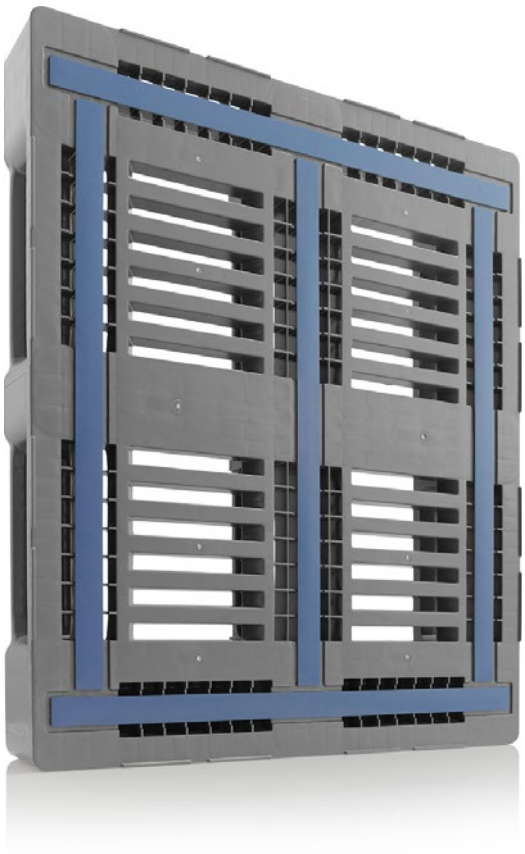

the industry for a stronger, more competitive marketplace. We do a lot of marketing and promotions and a lot of communications around the benefits of reusable packaging.

Our members come in different market segments and sizes. We have a nice core of manufacturers and suppliers of reusable packaging products, and we are becoming more diversified to include more companies servicing the reuse system. That includes services like washing, cleaning and sanitisation equipment for commercial operations, logistics, transportation, and technology providers.

In the retail market, more companies are looking at consumer packaging products that have reusable, refillable models. We are looking at how you can leverage existing B2B operations of reuse or models within existing retail infrastructures. For example, if you've got a retail store in which the consumer is participating in reuse and refill models, well, in many stores behind the scenes, you've got pallets, bins, crates and totes that are already moving through that operation.

Can you leverage that to extend to B2C applications? I always liken supply chain reuse programs as the trunk of a tree that can provide the scale and infrastructure to support those branches going out to primary packaging and consumers. There's an opportunity to have a more holistic reuse program as it pertains to both transport and primary packaging.

Our organisation is looking at e-commerce and the area of omnichannel distribution systems that retailers are bringing forward, and we're looking to support those primary packaging reuse initiatives as well.

We do represent major companies and leading innovators in the pallet industry, and operators of pooling systems for pallets and RPCs. RPA's technology-based membership is the fastest growing member category. With a growing network of companies and experts in the reuse community, many primary (end) user companies like OEMs, consumer brands, and retailers can tap into RPA resources and derive value out of joining the RPA for a more collaborative industry effort.

Do you think that the industry needs to collaborate more and how would you suggest getting organisations to work together more effectively?

I do. I think we're at a critical time really in our lives, but also in our business. In terms of working together to solve some of these major complex problems, if not crises together, it goes beyond just representing a particular industry or market but coming together to solve problems and to bring forward solutions that are going to be sustainable, that are going to be lasting, and that are most impactful in terms of meeting the requirements of both business and customer satisfaction.

RPA provides the legal hub where partners and competitors can work together to bring more collaboration around those common areas of industry which could include education and bringing facts to the market for consideration about reusable packaging. More so now than ever before, I think it's that collaboration that's going to allow us to advance the big issues in our industry, to solve these problems and work with the marketplace on ways to integrate innovative types of reusable packaging solutions.

We do work very collectively among our members, but also in partnership with other organisations. When you're looking at organisations working together, we do partner and are involved in other more broader groups that share the common interests that we have. As an example RPA is an active member of the U.S. Plastics Pact, which is an offshoot of the New Plastics Economy from the Ellen MacArthur Foundation.

We're representing reusable models in terms of the common objective of implementing a circular economy for plastic packaging. We want to build greater networks and lend our expertise and our skill set as it pertains reuse models to organisations that share that common vision

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of having more source reduction capabilities for packaging and to address the solid waste, pollution and climate change crises that we face.

Collaboration is a big step. You pretty much cannot manage a reusable packaging program on your own as it generally takes multiple parties, especially if you want to optimise or make things more efficient. It's bringing those multiple parties together to ultimately work together and find the most optimised way to achieve the benefits of both economic and environmental, and of course, social as well related to reusable packaging.

It sounds like you are the glue holding all of these organisations together

Yes, we believe so. We're all adjusting within the market, and we try to stay as nimble as possible because the market demands it. With so many rapid changes that we're seeing in accelerations over the last few years, whether it's the Covid-19 pandemic and supply chain disruptions that we're facing in the global economy, or the acceleration of technology and how people are working differently, for example, the demands of automation in robotics because of a challenging workforce, in the market today.

Could primary packaging be improved to reduce environmental impact?

Absolutely, that's the easiest question to answer regarding primary packaging being improved to reduce environmental impacts such as waste and pollution. We as consumers see it every day in our own lives as we look at the excessive disposable and throwaway packaging and the costs and difficulties in waste management practices like recycling.

The fact that many of the things we have, especially plastics, end up in landfill anyway, even if we do put them in a recycling program. There are a lot of things that can be done on the primary packaging side, just look at the statistics about the millions of tons of plastic that are escaping the waste stream and entering the oceans every year.

These are in many cases consumer-based products. There's certainly the amount of solid waste that's created and will continue to increase over decades based on the trends, demographics, populations and the market as well. It's no doubt that primary packaging can be improved significantly on the environmental side, through design innovation and of course, a systems approach to managing products, not just the raw materials.

It really is about design. Design the ideal system first then move onto the packaging to develop the optimal product that can achieve the most out of that system. Ultimately, consider how it can achieve the desired functionality at each stage of its handling, transport, use, retrieval, and reconditioning for another use.

I approach reusable packaging as really having a firm understanding of all of the touch points that packaging goes through to complete its full cycle. Each individual touchpoint actually has an opportunity for improvement and design needs to take all of that into account. It's understanding that if we change product design and even change system design, we can optimise ultimately the flow, the performance, the acceptance and the value creation of that product all the way through, but you have to walk that entire step. That generally involves engaging with your partners, and understanding their handling and their needs of packaging.

It could be as simple as understanding their racking system within their warehouse to develop ways to make it more efficient in terms of palletising the product, unit loads, cube utilisation, trucks and stacking capabilities of the product. That includes ensuring the primary packaging is created for durability so you can eliminate packaging, eliminate dunnage, but still have quality product protection through the rigorous handling that some of these commodities and products have to take.

There's some great innovation and capabilities within artificial intelligence software that's being planned, and it's great to see. But when we're talking at the level of trying to make single-use waste more efficient, to me it misses

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the bigger opportunity of transformative systems change of not even having that waste to begin with. Let's go ahead and design around it where we can make it an optimised efficient program from the very start.

No doubt, primary packaging has ways to go. We need to take leaps, not steps in terms of transforming to a more source reduction packaging system, with recycling as the last resort in how packaging waste is managed.

What legislation or rule changes would help to make reuse more mainstream?

There's a lot of discussion and movement on the legislative front. Specifically, we see significant action in Europe with the circular economy initiatives, extended producer responsibility, two leading policy initiatives that are providing direction and guidelines. In many cases, requirements about shifting the economy into something that provides resource conservation, that's more about product utility and extension, whilst avoiding unnecessary waste and recycling needs. We prefer to reuse the value of the material and production that's already gone into that manufactured product.

I think things like extended producer responsibility are very important if done right because it shifts ultimately the burden to those who are generating and moving the single-use waste into local communities, in terms of managing that waste rather than the taxpayers at a local municipal level. It would help to encourage more thoughtful design and systems change around that source reduction of eliminating unnecessary packaging, and reusing packaging that has already been created.

Systems like reusable packaging are value-creating, and allow for growth with decoupling from natural resources or raw material consumption. When we can achieve economic growth with superior product performance and capabilities, without environmental impacts like waste and pollution, that's the end zone and the direction we need to take.

If we can just take a leap to get there that's going to be very important. I think policy can help us with that because if left unchecked on its own, the market is going to be very slow to get there.

Would standardisation of packaging design help implementation, return and cleaning of primary packaging, and how important is it to set international standards?

Standardisation is an interesting topic. There is a need for interoperability of reusable packaging

based on consistency of certain elements in design and application. I feel that in many forums and industry discussions, there's this call for greater standardisation than what's necessary, having everything universal in design and operation.

What I try and find is this middle ground in which we want things to be interoperable to make it the highly efficient process of different products and different applications in the marketplace, but we've got to be careful not to over standardise if it takes away from innovation and continuous improvement.

What we've learned is you may develop a reusable packaging product that addresses many of the benefits and interests in the market, but it may be the first generation in which there may be future design improvements, material improvements that are in the pipeline, or that a second or third generation product can be even better in performance and value.

We should be careful not to standardise something that's going to limit the continued development of new technology, design, materials and production capabilities that may change the design because they're simply better, more effective, and in greater demand by product users.

We see that throughout the history of reusable packaging. When it comes to standardisation of packaging, we need to be thoughtful about the extent in which we're seeking to provide common sets of rules or specifications for products. I would err more on less standards, only to allow for competition and the market to bring ultimately the best product to the market.

I do have faith in business to continue to innovate and bring new ideas to the forefront that may, in some cases, replace prior thinking. If you have standards that maybe are so rigid or not flexible enough, then it may diminish bringing together those new innovations into the marketplace.

Things like ease in return and cleaning of packaging, the standardisation may come in the equipment or the wash machine for example, and innovations that allows for different size products, different openings of products to be able to wash in a single unit. It's about that holistic system, not necessarily just about the product, it's looking at what those opportunities are at every touchpoint.

Clearly, standards have an important role. I think looking at interoperability of products within different markets is an important consideration, having more of an application standard is the way to go versus, say, a product standard. I don't think that's shared across our industry. I've seen it though in that real world experience about how generations and new design innovations can lead to better reusable products.

I would hate to squash that improvement potential because we're trying to make things universal so that they're standard compliance across all aspects of the market. What I'd like to encourage is our industry looking at standards more from an application standpoint rather than just product specifications.

We cannot see into the future. We have no idea what reusable packaging, design, and material innovations are to come. All we have is our perspective of today and what it means for reuse, but we've got to allow for continuous improvement.

If somebody comes in with a product that is better, lower cost, higher performing, smarter, easier to wash, do we say "You can't do that because it's against the standard"? Well, that's not where we need to go as an industry to maximise the reuse impact and value.

What changes or improvements are needed in the supply chain?

We need to change the way we consider packaging in the supply chain and the need to transform from a linear system to a circular one. Largely today, we work under the concept of lowest cost is the most important objective. Design packaging and bring a pack to market that's going to perform its minimum obligation at the lower cost.

In many ways, we act in a linear economy in that we provide the service, provide the packaging, but as cheaply as possible is the foremost objective. We're going to continue to take pennies out of packaging. To me, that's where system change needs to happen, thinking less about cost of a packaging product and more about creating new values out of a system in which that product operates.

That's where I think that transformative change is needed and how we view packaging and its application in the supply chain. That's where reusable packaging comes in, where you can design for durability, for feature-rich properties because if you reuse that higher cost, more valued packaging over and over again over time, it's going to become a cheaper product to use on a per use basis than going for the cheapest one-time use option.

The issue is that it requires a change of behaviour and a change in culture. It requires thinking about packaging as not a disposable item, but a valued commodity, a valued asset. That's ultimately the improvements we need, with packaging not being something that is designed to be used once and thrown away, versus something that can be designed to be used over and over again.

There are many break-even points. That's the other thing when we talk about standards, with people saying "it's considered reusable if it's used X number of times or Y number of times". Every application is different in terms of where that break-even point is both on economics and environmental impact.

There are so many different variables involved in that assessment, but if you're designing the product in the system, you can then achieve something that's going to deliver for a long period of time, and ultimately provide not only return on investment but a cost-benefit along the way.

I caution people when they say "We're running a life cycle analysis on this reusable packaging to compare it to single-use, and it has to be better". There needs to be recognition that the LCA you're performing today will not be the LCA that's performed a year or two from now as that reusable system continues to improve.

You may add warehouses, you may reduce transportation, you may increase scale, you may have more volume efficiencies, and suddenly, that LCA in terms of its environmental impact changes significantly. You need to look at reusable packaging with an eye towards that continuous improvement. The LCA is a snapshot in time and what we do know about reusable packaging systems is there are so many opportunities to increase the scale, reduce environmental burdens, and improve performance and impact.

One example I have from the real world and marketplace is a reusable plastic container, where all we did was change the base design to allow for an improved stacking profile. You could get more reusable container units on a pallet at a lower stacking height. It gave an 18% efficiency gain in transportation because you can get more product in a full truckload. All of a sudden, just from one design change on the base and folding structure of that container, you've got an 18% gain in the environmental impact. Fewer

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emissions on a per asset or product basis being transported across the country.

I respect LCAs. I think they're critical information, very insightful, but I'm also hesitant at putting too much stock in it, because LCAs are just a function of inputs, and a simple input change can change the results of an LCA. In many cases, we make assumptions about the collection and use of datapoints, and those assumptions or those estimates can have real meaningful impact in the results.

How can smart packaging ease the transition to reuse, and how is it used in transportation now?

Tremendous! Technology-enabled smart packaging really is a game changer today. We're at an inflection point in the reusable packaging industry. In this case, technology is able to automatically identify, monitor, and track the condition and the movement of reusable packaging products.

And it's not just the packaging asset, but also the tracking of the inventory or products inside that packaging where there's opportunity for a truly digital supply chain. Which is something we've seen the last couple of years with the pandemic-triggered supply chain disruptions of not knowing where our inventories are, not understanding the velocity in which cargo's being moved, and understanding delivery dates.

When you're able to bring that smart awareness or that visibility of your products in the supply chain, it really opens the opportunity for digitisation of our business and our transactions. It creates a level of data and awareness that's not been seen before. It can be shared among trading partners so that everybody understands in real time where that product is.

The technology is just getting started as far as those capabilities on more cost-effective basis. Devices are being manufactured smaller with more capabilities so there is less interference in terms of being tagged or moulded or placed during the manufacturing process where it's embedded into the asset.

In many cases these technologies are breaking through barriers. They're no longer requiring a line of sight or going through a stationary portal in a warehouse. They're connected to the Internet of Things and providing data in the cloud anywhere in the world. It's breaking free of boundaries and allowing for those capabilities.

It's not being used in transportation at the level that I'm describing on a per asset basis. People certainly are putting GPS trackers on shiploads or pallets and they're able to track it, but we're at a point now where we're looking at technology at a case and unit level in terms of that pallet, packaging container or tote. That's really where it gets exciting because it allows for more effective management of that reusable packaging asset, but again, the contents inside that make us split up at a warehouse and move it into another location. It really is in this new era of digitising the supply chain and the packaging products that we have both from B2B transport to B2C interaction.

It goes back to that continuous improvement of LCAs or economics, in that with the data, you can then start making decisions about inventory size, needs and positioning, predictive analyses, understanding when you're expecting to get the containers back for reuse more precisely and allow for the planning of that inventory. That's going to ultimately reduce costs and provide better services in the market.

What improvements could be made to help reuse become more mainstream for consumers, and what reuse developments would you like to see in the future?

We need more education for the consumer to get them more into the decision-making process. We try and think on behalf of consumers, assuming that they won't accept it if its inconvenient when compared to the status quo. We need behavioural change that will ultimately produce a more convenient system, and not just in corporate settings, supply chains and operations.

Consumers will do more if they're educated about what to do, not just for the environmental implications but for the value that they're getting out of it. If they participate in the programme, it's going to ultimately better serve them with higher quality, better products and smart interactive products.

That's where education is needed. I hear too often that reusable packaging can only work if it's convenient or more convenient for consumers. I don't buy that. When you look at the fact that around the world, 9% of plastic packaging is being recycled? The rest is going into landfill or the environment.

We need to look at ourselves in the mirror and say, "Gosh, it's probably time that this convenience has gone too far. Let's inconvenience ourselves just a little bit in the short term during a systems transition so that we can stave off these crises that are really having a dramatic impact on our life, on our ecosystem and our health."

We need to find ways to make things convenient, but effective in addressing the problems and providing value. I also think we need to make reusable packaging affordable and accessible, even though those are issues that I think come with their own entanglements in terms of the social side of reuse acceptance.

Reuse shouldn't be exclusive. We need to find ways that they can work throughout all populations and be accessible in all geographies. That comes with scale, with economic efficiencies and improvements that we can obtain.

Consumers will go along with it. We have seen those polling numbers where consumers are even willing to pay more for a more sustainable packaging effort.

What are your biggest challenges?

This is a very difficult process, going from generations of a throwaway single-use linear economy. It's just something that is more reusable and circular to preserve the resources that we've made in products. I think the biggest challenge is turning that transition and moving at a quicker pace.

Today is a good example where businesses generally want to do the right thing, but businesses are also incentivised on short-term shareholder returns and profitability. If you're in a recessionary period that we're in today, it's going to come down to cost and making sure margins are protected.

That's fine, but that perpetuates the linear system where the biggest focus is on the cost of the packaging. It doesn't lend itself well for business leaders to say "Times are tough, we've got recessionary conditions in the market, but I'm going to go ahead and invest in changing our operations and becoming more circular. I'm going to do that not by 2030 or 2035, I'm going to do that today".

Once you look at the commitments around companies, it's always 5 - 10 years out. I understand it takes time to get there and that things won't change overnight, but if many of us truly believe that speed and action is required to meet today's opportunities, then I think we need to start looking at those systems change more aggressively today.

The cusp we're at now in these market conditions can be very difficult, but instead of pushing it years or decades down the line, we should aggressively make that change. I think that's a challenge we are at today, but instead of these steps forward, it goes back to making more giant leaps in systems change now, starting now because ultimately that just means you're going to benefit more quickly in the future.

We've got to look at those benefits as ultimately the result of system changes for your business, not just today but for the long-term. I think the marketplace, especially with a lot of the challenging times that are out there, sometimes can be discouraged from making that leap, instead taking a step forward but really pushing off massive or meaningful progress to much later times.

I would just stress again about reusable packaging. It is about creating new value, about a system that's going to generate more benefits than just continuing to optimise the linear system today. I would also just highlight something I've repeated earlier and think of reuse as a better system of the way we make and distribute products.

It's not just about more durable packaging. It's about the system of extracting optimal benefit in the way we distribute products from one point to another. System design becomes a very critical part to ultimately extract the benefit out of reuse.

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