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# THE FUTURE OF PACKAGING: BALANCING SUSTAINABILITY, COST, AND INNOVATION

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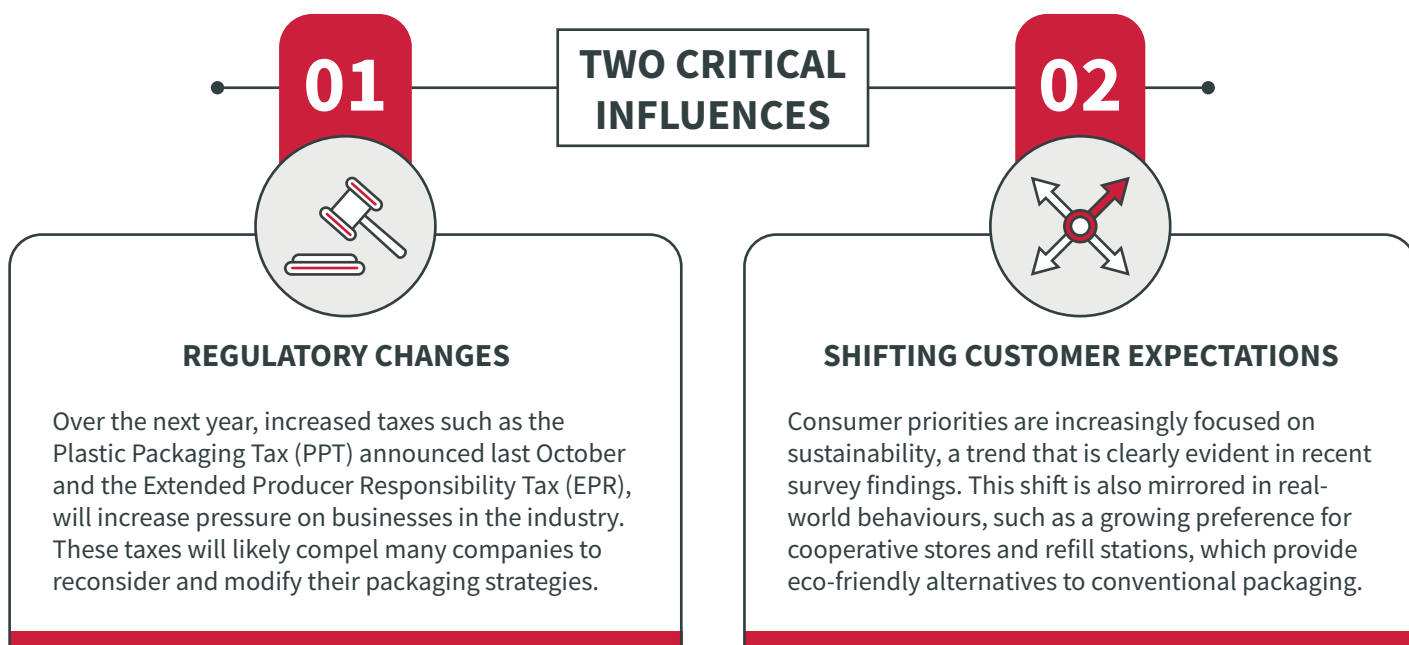


# Introduction

Over the past two years, the Food and Beverage industry has faced significant challenges in maintaining stable prices amidst rising inflation. With new regulations and rapidly evolving consumer expectations, the challenges ahead will only grow, placing additional pressure on businesses, their cost structures, and the need for innovation.

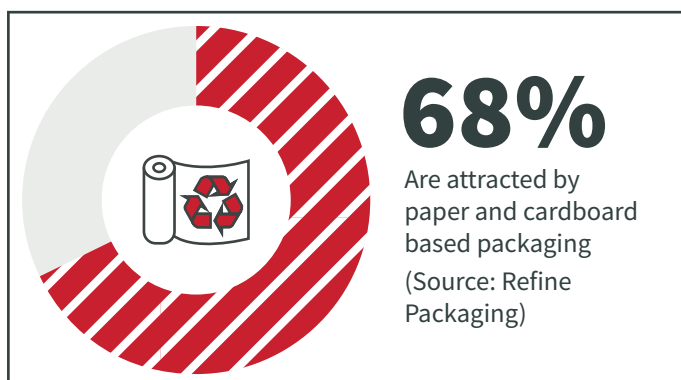
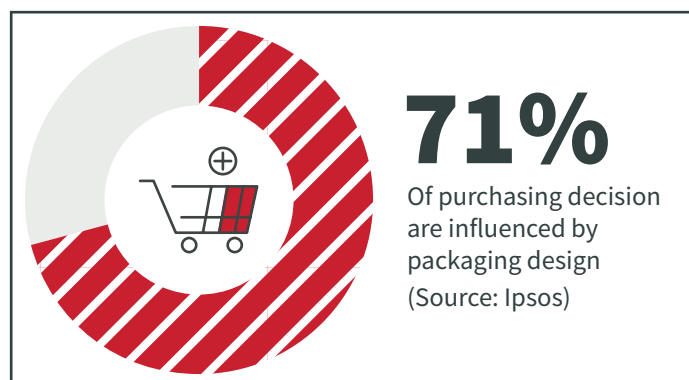
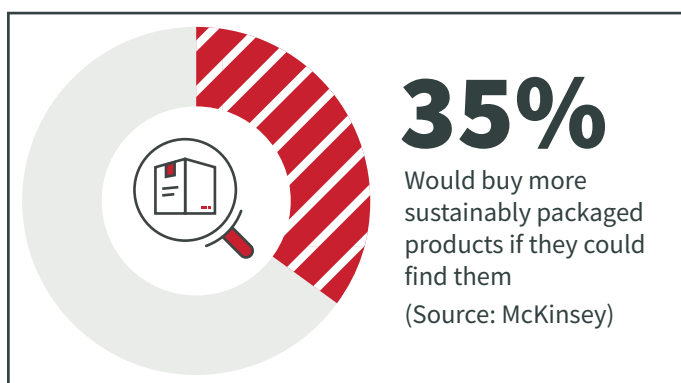
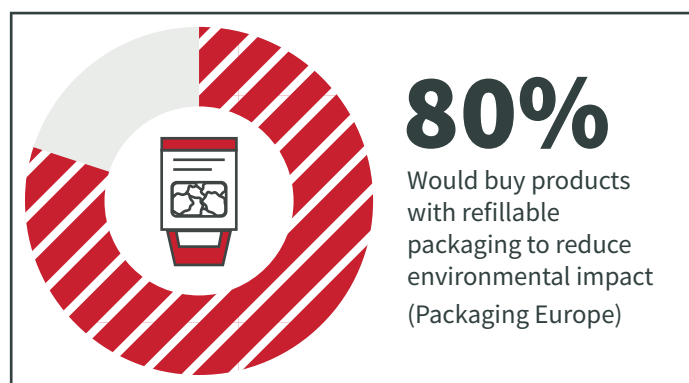
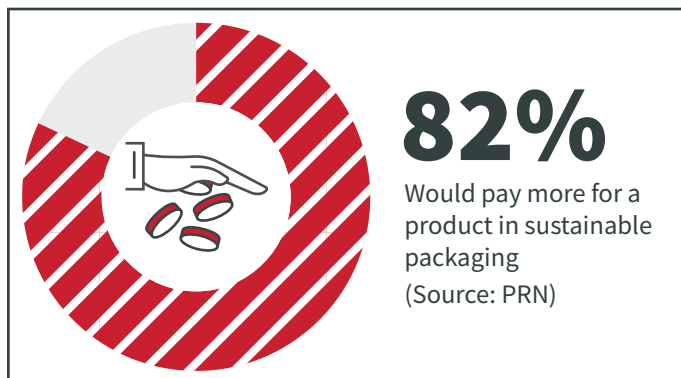
In this paper, we will explore how businesses can more effectively navigate an evolving market landscape by critically evaluating their existing packaging strategies and exploring innovative alternatives.

By adopting a proactive, data-driven approach, companies can uncover opportunities to improve efficiency, enhance sustainability, and stay aligned with both regulatory requirements and consumer demands. Through a comprehensive analysis of packaging materials, design, and methodologies, this paper offers insights into how organisations can drive meaningful innovation — addressing present challenges while strategically positioning themselves for long-term success.





## SHIFTING CONSUMER BEHAVIOUR IN NUMBERS





# Considering different levels **of packaging innovation**

**B**y carefully reviewing their current packaging and thoroughly assessing potential alternatives, food and beverage manufacturers can better navigate the challenges they face in today's dynamic market. This proactive approach allows them to identify opportunities for improvement, enhance sustainability, and ensure they meet both regulatory and consumer expectations.

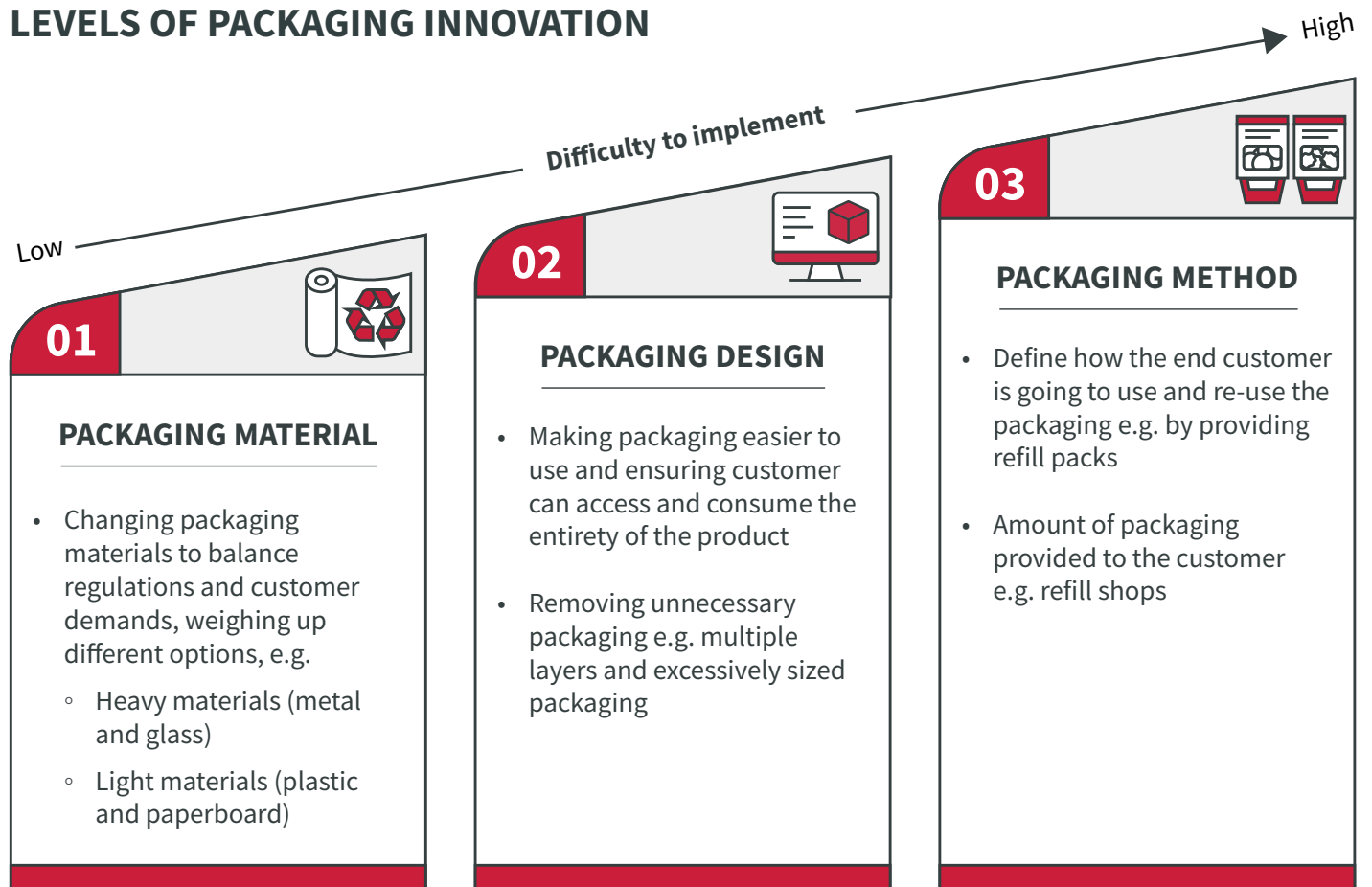
Packaging redesign or innovation can range from minor adjustments to more substantial changes, each requiring different levels of investment and commitment.

Gaining a clear understanding of the available options, their potential impact, and customer preferences will be essential for making informed decisions that balance both cost efficiency and consumer appeal.





## LEVELS OF PACKAGING INNOVATION



# Understanding alternative **packaging** **material** options





**F**ood and beverage manufacturers considering a shift in packaging materials must take a comprehensive approach in evaluating the potential impacts of various alternatives. While the move away from plastic packaging may seem like a logical decision in response to growing environmental concerns and the introduction of new taxes, it's important to recognise that other materials come with their own set of challenges and considerations.

Several alternative packaging materials are available, such as glass, metal cans, paperboard, polyethylene, and film. Each of these materials offers distinct benefits, such as recyclability, durability, and sustainability. However, the environmental impact of these materials extends beyond their recyclability or biodegradability. In particular, heavier packaging options – which account for a larger proportion of the overall product weight – can lead to increased energy consumption during production and transportation, as well as higher CO2 emissions.

Given these complexities, it is crucial for manufacturers to not only consider the immediate environmental impact of packaging materials but also evaluate the long-term effects, including energy consumption, waste reduction, and transportation emissions. By thoroughly analysing the full lifecycle of various materials, businesses can make informed decisions that align with sustainability goals while also meeting consumer demands and regulatory requirements.





	Packaging as % of product weight	CO2 equivalent emission in g/item	Pros of material	Cons of material
 <b>METAL</b>	12%	141	<ul style="list-style-type: none"> <li>• Widely recyclable</li> <li>• Protect product and taste</li> <li>• Protect from physical damage</li> </ul>	<ul style="list-style-type: none"> <li>• Complex and expensive surface painting</li> <li>• Expensive manufacturing, storage and shipping</li> <li>• Risk of corrosion</li> </ul>
 <b>GLASS</b>	47%	532-894	<ul style="list-style-type: none"> <li>• Widely recyclable</li> <li>• Protect product and taste</li> <li>• Container transparent</li> <li>• Can be reused</li> </ul>	<ul style="list-style-type: none"> <li>• Limited design flexibility</li> <li>• Expensive manufacturing, storage and shipping</li> <li>• Risk of breakage at impact</li> </ul>
 <b>PLASTIC</b>	3-12%	71-253	<ul style="list-style-type: none"> <li>• Light weight – reduced transportation fuel</li> <li>• Good safety and hygiene</li> <li>• Resistant to chemicals, water and impact</li> <li>• Intelligent features, smart materials</li> </ul>	<ul style="list-style-type: none"> <li>• Not widely recyclable</li> <li>• Potentially harmful for health and environment</li> </ul>
 <b>PAPER</b>	4-11%	68-76	<ul style="list-style-type: none"> <li>• Widely recyclable</li> <li>• Light weight – reduced transportation fuel</li> <li>• Good safety and hygiene</li> </ul>	<ul style="list-style-type: none"> <li>• Poor Resistance to chemicals, water and impact</li> </ul>



# Innovating **Packaging Design and Method**

**W**hile changes in packaging materials can undoubtedly yield significant improvements, to stay ahead of evolving customer expectations, comply with regulatory standards, and maintain a competitive edge, businesses may need to embrace more innovative and forward-thinking solutions.

Companies can explore a vast array of options when redesigning their packaging, or even rethinking the packaging method. A prime example of such innovation can be seen in the redesign of sauce or condiment bottles, which now not only allow consumers to easily dispense every last bit of product by transforming a glass bottle into an upside-down squeezable plastic bottle, but also offer the added convenience of refillable containers, enabling customers to reduce waste and replenish their original packaging with minimal effort.

By focusing on a number of key success factors, businesses can drive innovation that not only addresses current challenges but also positions them for future success.

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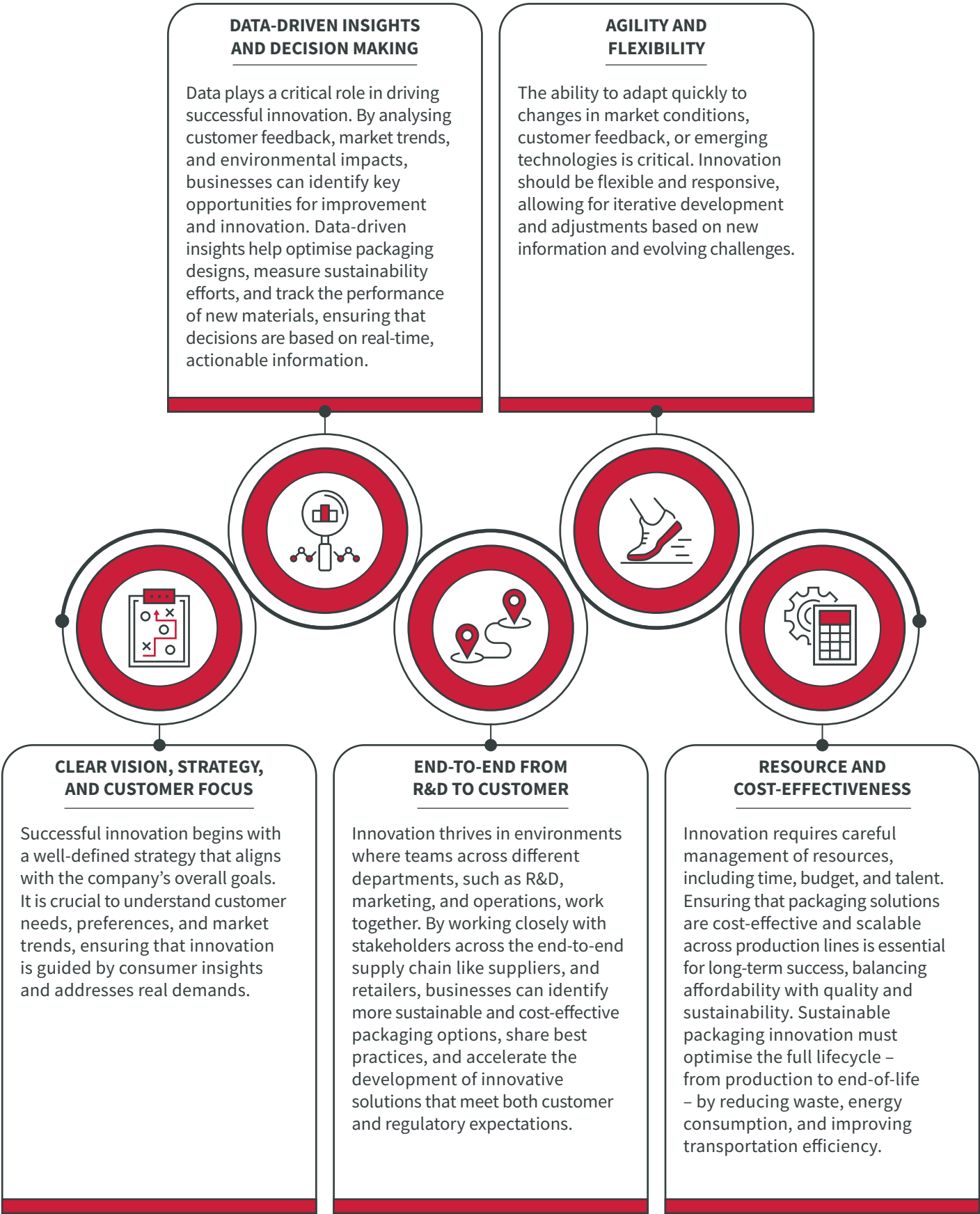
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## FIVE KEY SUCCESS FACTORS



# Conclusion

**A**s the demand for sustainable and efficient packaging continues to grow, businesses must embrace innovation at every stage of the process—from material selection to consumer engagement. By focusing on customer needs, leveraging data, and collaborating across the supply chain, companies can develop packaging solutions that are not only cost-effective but also environmentally responsible.

The future of packaging lies in striking the right balance between functionality, sustainability, and cost-efficiency. With the right approach, packaging innovation will not only drive business success but also contribute to a more sustainable world.

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## CONTACT VENDIGITAL

If you would like to learn how we can support you on your packaging optimisation and innovation journey, please reach out to us.



+44 (0)204 579 3558



[vendigital.com](https://vendigital.com)



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## About Vendigital

At Vendigital, we deliver data-led accelerated cost transformation. We achieve this by combining multi-disciplinary consulting expertise and our proprietary digital platform – through our Insights360 methodology – to generate and embed client-specific operational insights.

Core to our approach is our deep operational capability and industry experience, and in-house data science and data analytics expertise.

As part of Siemens Advanta, the professional services business unit of Siemens, we have access to an unrivalled combination of deep domain knowledge, the strong Siemens technology stack and a powerful ecosystem of partners around the globe.

Our consultants are industry specialists with extensive experience of working within the sectors we serve – aerospace and defence; automotive; consumer products; industrial manufacturing; private equity; technology, media and telecoms; and transportation and infrastructure.

Whether you're looking to make longer-term strategic cost decisions or drive operational efficiencies at pace, we work as part of your team to deliver measurable and sustainable results.



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