



REDEFINING THE ROLE OF PACKAGING IN A DEMANDING PHARMACEUTICAL LANDSCAPE

PHARMAPACK 
by informa 

PARIS | 21-22 JAN 2026

Ahead of this year's Pharmapack Europe conference on Jan 21-22, 2026, **Sherma Ellis Daal of Informa Markets** discusses the role of packaging and drug delivery systems in the wider pharmaceutical industry, offering insights on how key trends and pressures are changing thinking and redefining what makes a successful project.

As the pharmaceutical industry enters 2026, packaging and drug delivery systems have moved decisively from being a developmental afterthought to a strategic focus. What was once treated as a downstream execution challenge is now recognised as a key factor for patient experience, sustainability performance, regulatory readiness and supply chain resilience. This shift has been driven by several pressures that have intensified simultaneously – the increase of complex biologics and chronic therapies in the pharmaceutical pipeline, tightening environmental regulations, the digitalisation of healthcare and rising expectations for usability and access.

The conversations taking place across the sector suggest a growing maturity

with less emphasis on statements of ambition and greater scrutiny of whether or not innovation can be delivered at scale, within regulatory constraints and with measurable outcomes. This transition from intent to impact marks a defining moment for pharmaceutical packaging.

A SECTOR DEFINED BY CAUTIOUS OPTIMISM

The prevailing mood across the pharmaceutical packaging and drug delivery industry is characterised by cautious optimism. Companies now recognise that the challenges they face, whether environmental, regulatory or logistical, are systemic rather than temporary. At the same time, there is confidence

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that solutions are emerging, driven by advances in materials science, device engineering, digital tools and cross-industry collaboration.

This mindset reflects a broader change underway in the wider life sciences sector. After several years of disruption, from pandemic-era volatility to geopolitical instability and supply-chain stress, the industry is placing greater value on resilience and long-term viability. Packaging decisions are increasingly evaluated not just on cost or speed to market, but also on their ability to withstand regulatory change, support global distribution and meet sustainability expectations throughout the product lifecycle. In this context, optimism comes from the recognition that progress is being made incrementally, pragmatically and often through collaboration rather than competition.

HOW THE ROLE OF PACKAGING IS CHANGING

Against this backdrop of cautious optimism, pharmaceutical packaging and drug delivery teams are operating under unprecedented pressure. Their role is expanding well beyond execution, as they are increasingly required to balance sustainability goals, innovation expectations, patient needs, regulatory complexity and supply chain resilience – often simultaneously – with limited room for compromise.

Rather than responding to isolated challenges, developers and manufacturers are now navigating a convergence of trends that are reshaping how packaging and delivery systems are designed, approved

and deployed. These trends overlap, reinforce one another and, at times, pull in competing directions. Understanding how they interact is becoming a core competency for organisations seeking to future-proof their portfolios.

A Sharpened Focus on Sustainability

Sustainability has moved decisively from a peripheral consideration to a defining constraint in pharmaceutical packaging. What distinguishes the current phase from earlier efforts is the level of accountability now attached to environmental claims. Packaging decisions are increasingly expected to stand up to regulatory scrutiny, investor expectations and internal governance, all of which demand evidence rather than merely stated intent.

This shift is elevating environmental measurement from a specialist exercise to a strategic requirement. Lifecycle assessments and product carbon footprinting are no longer confined to pilot projects or sustainability teams; they are becoming central inputs into packaging design, supplier selection and portfolio planning. For packaging teams, this represents a fundamental change in how success is defined, as environmental performance must now be assessed alongside cost, manufacturability and compliance.

Regulatory developments are accelerating this transition, particularly in Europe, where new requirements around recyclability, material reduction and waste management are forcing concrete design choices. These rules rarely align neatly with pharmaceutical safety and quality frameworks, increasing the complexity of implementation. In many cases, the challenge is in the uncertainty around how far innovation can go without compromising product protections or inviting regulatory risk.

Crucially, sustainability is no longer framed solely as a materials challenge. While advances in polymers, monomaterial formats and barrier technologies

remain essential, attention is shifting towards systems-level thinking. Logistics optimisation, pack-size rationalisation, reuse or take-back models, and end-of-life pathways are all coming under scrutiny. This broader perspective reflects a growing recognition that meaningful environmental gains often lie beyond individual components, requiring co-ordination across packaging, operations and supply chain functions.

Embracing Innovation Under Constraints

Innovation in pharmaceutical packaging and drug delivery continues at pace, but the environment in which it must succeed is becoming increasingly demanding. Novel technologies are no longer evaluated primarily on ingenuity; they are judged on their ability to deliver tangible value under real-world conditions.

The rise of complex biologics and chronic therapies is driving demand for more sophisticated delivery systems that combine precision, usability and reliability. At the same time, interest in smart packaging and connected devices reflects a broader push towards data-enabled healthcare, where packaging plays a role in adherence, monitoring and traceability rather than serving solely as a means of containment.

However, adoption remains uneven. Digital functionality introduces new layers of complexity, including data governance, cybersecurity, interoperability with healthcare systems and regulatory approval pathways. Similarly, material and format innovations must demonstrate consistency at scale, compatibility with existing manufacturing infrastructure and resilience under global distribution conditions. The bar for success is high.

As a result, innovation is increasingly constrained by the realities of implementation. The question facing many organisations is not whether innovation is possible, but whether it can be deployed responsibly, cost-effectively and at scale. This has led to a more pragmatic

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approach, where incremental improvements and integration with existing systems often take precedence over radical redesign.

A Growing Demand for Patient Centricity

Patient-centric design has become a central expectation in pharmaceutical packaging and device development, reflecting the continued shift towards self-administration and long-term disease management. However, the industry's understanding of patient centricity is evolving.

Design teams are being challenged to move beyond assumptions about a "typical" user and instead account for a wide range of patient capabilities and contexts. Ageing populations, reduced dexterity, visual impairment and varying levels of health literacy all influence how packaging and devices are used in practice. In this context, usability is directly linked to adherence, safety and therapeutic outcomes.

This expanded definition of patient centricity introduces additional complexity. Packaging and device solutions must balance ease of use with regulatory requirements, manufacturing constraints and cost pressures. Demonstrating usability across diverse patient populations requires early and rigorous human-factors engineering, often involving iterative testing and cross-functional input.

As healthcare systems place greater emphasis on outcomes and value, the role of packaging and delivery systems in supporting correct use of the drugs they contain is coming under closer scrutiny. Poorly designed packaging can undermine even the most effective therapy, with one-third of reported medication incidents stemming from confusion over packaging and labelling.¹ Meanwhile, an intuitive, accessible design can improve patient confidence and compliance, as shown in medication adherence rising from 63% to 71% when packaging interventions such as blister packs and pill organisers are used.² These findings have elevated patient centricity from a design principle to a strategic consideration.

Escalating Regulatory Complexity

Regulation remains one of the most influential forces shaping pharmaceutical packaging, and its impact is intensifying.

Environmental legislation is increasingly intersecting with established pharmaceutical regulatory frameworks, often without full alignment, creating new areas of ambiguity and risk.

Packaging teams must now interpret and reconcile requirements related to safety, quality and sterility with emerging rules on recyclability, material composition and waste. These frameworks were developed with different objectives in mind, and navigating the overlap between them requires careful judgement, as late-stage changes to address regulatory misalignment can be costly, disruptive and time-consuming.

As a result, regulatory intelligence and foresight are becoming critical capabilities. Organisations that integrate regulatory considerations early in the development process are better positioned to make informed trade-offs and avoid reworks. Rather than simplifying decision-making, regulation is forcing teams to document their rationales more rigorously and defend their choices in detail.

Those that treat regulation as a downstream hurdle risk delays and non-compliance. In contrast, companies that embed regulatory expertise into their packaging strategy are more likely to adapt effectively as requirements continue to evolve.

Persistent Supply Chain Challenges

Supply-chain resilience continues to shape packaging strategy, influenced by geopolitical uncertainty, material availability and manufacturing capacities. Recent disruptions have exposed vulnerabilities in global sourcing models, prompting renewed interest in alternative materials, regional suppliers and dual-sourcing strategies.

However, building supply-chain resilience is rarely straightforward. Changes to suppliers or materials can trigger regulatory revalidation, impact quality systems and alter cost structures.

As a result, supply-chain decisions are increasingly intertwined with sustainability and regulatory considerations, rather than being addressed in isolation.

Digital tools and data analytics are beginning to support more proactive supply chain management, offering greater visibility into risk and performance. Yet technology alone is not sufficient. Effective use depends on organisational readiness, data quality and cross-functional co-ordination between procurement, packaging, regulatory and operations teams. For many organisations, the challenge lies in balancing flexibility with stability, building supply chains that can adapt to disruption without introducing unnecessary complexity or risk.

LEADERSHIP AND ACCOUNTABILITY

One of the most significant shifts underway is at the leadership level. Sustainability, patient centricity and supply-chain resilience cannot be delivered through isolated teams or pilot projects alone. They require sustained commitment, investment and accountability from senior management. There is increasing recognition that packaging and delivery decisions have long-term strategic implications, influencing brand reputation, market access and risk exposure. As a result, these topics are moving higher up the organisational agenda, with greater involvement from executives across R&D, operations, regulatory and commercial functions.

This leadership engagement is essential for overcoming internal silos and aligning incentives. Without it, even well-designed initiatives risk stalling at the implementation stage. Conversely, organisations that embed sustainability and patient focus into governance and performance metrics are better positioned to deliver consistent progress.

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COLLABORATION AS A COMPETITIVE ADVANTAGE

As challenges grow more complex, collaboration across the pharmaceutical packaging value chain is becoming less optional and more strategic. No single organisation holds all the expertise required to address sustainability, regulatory change, technological innovation and patient needs simultaneously.

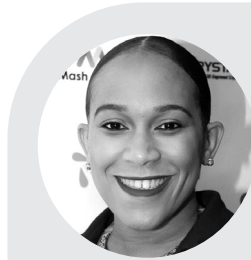
Pharmaceutical companies, device developers, packaging suppliers, material innovators and consultancies are increasingly working together earlier in the development process. This shift reflects a recognition that late-stage optimisation is often too slow and too costly to meet emerging requirements.

Cross-industry collaboration also plays a critical role in standardisation, whether in sustainability metrics, digital interfaces or regulatory interpretation. Without shared frameworks, there is a significant risk of fragmentation, duplication of effort and slower progress. Collaborative platforms are helping to align expectations and accelerate learning, particularly in areas such as circularity and environmental measurement.

Start-ups and scale-ups are an essential part of this ecosystem. They often bring specialised technologies or fresh perspectives that larger organisations may lack, but they also face barriers to adoption, including validation, scale-up and regulatory acceptance. Creating pathways for emerging companies to engage with established players is therefore essential for translating innovation into impact.

AN INFLECTION POINT FOR THE INDUSTRY

Taken together, these developments suggest that pharmaceutical packaging and drug delivery are approaching an inflection point. The industry is moving beyond broad commitments and isolated innovations towards a more integrated,



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accountable approach. The path forward is unlikely to be linear; trade-offs between performance, safety, cost and environmental impact will persist, and not all solutions will scale as expected. However, the direction of travel is clear – packaging and delivery systems are being redefined as strategic assets that must deliver value across multiple dimensions.

For industry leaders, the challenge is to build the organisational capability to evaluate, implement and refine them over time. This requires investment in data, collaboration and skills, as well as a willingness to engage with complexity rather than seek simplistic answers. As the sector enters 2026, the most meaningful progress is likely to come from those organisations that treat packaging and drug delivery as integral

components of a broader commitment to sustainable, patient-centric healthcare.

Industry experts will further discuss these themes, challenges and more at [Pharmapack Europe](#) on 21–22 January in Paris, France.

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WHERE CONTENT MEETS INTELLIGENCE



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