



Bell Flavors & Fragrances is a family-owned flavour house founded in 1829. With our flavours we co-create the unique identities of our customers' products.



INDUSTRIAL NEWS AND INSIGHTS

Baked and better-for-you chips are among the fastest-growing segments in Europe (~6–10% CAGR), driven by health-conscious consumers.



EU regulation is tightening in key areas, including acrylamide mitigation (Commission Regulation (EU) 2017/2158), mandatory nutrition labelling (Regulation (EU) 1169/2011), emerging front-of-pack schemes, and stricter packaging and recycling rules, pushing manufacturers to reformulate products and redesign packaging.

Business INSIGHTS

SUSTAINABILITY & CAPACITY INVESTMENTS

European snack producers are investing in energy efficiency, sustainable sourcing and new plants to support growth.

In this environment, Bell supports this shift by creating cleaner, efficient seasonings that meet sustainability goals without sacrificing flavour or performance.

French crisp makers have announced capacity expansions to serve export markets. CO₂ reduction, circular or recyclable packaging and responsible potato sourcing are now standard expectations from European retailers and food manufacturers.



GLP-1 medication

The rapid uptake of GLP-1 (Glucagon-like-Peptide-1) medication for weight management is expected to reduce overall spontaneous calorie intake, including snacks. At the same time, consumers who snack will be more selective and will trade up to “less but better” products.



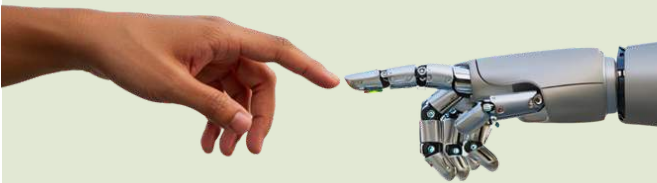
FEEDING THE FUTURE: WHEN AI BECAME THE INDUSTRY'S SECRET INGREDIENT

Artificial intelligence (AI) in the food sector began as simple automation and evolved through the 2010s into predictive analytics and real-time decision systems. Since then, it has been applied across the value chain – from supply-chain operations and manufacturing to packaging, procurement, logistics, and even sales – helping companies cope with rising demands around complexity, speed, quality, traceability, and reliability. Only recently, however, have we seen the first attempts at a true “qualitative leap”¹ in a long “digitally underserved”² area: the R&D department.

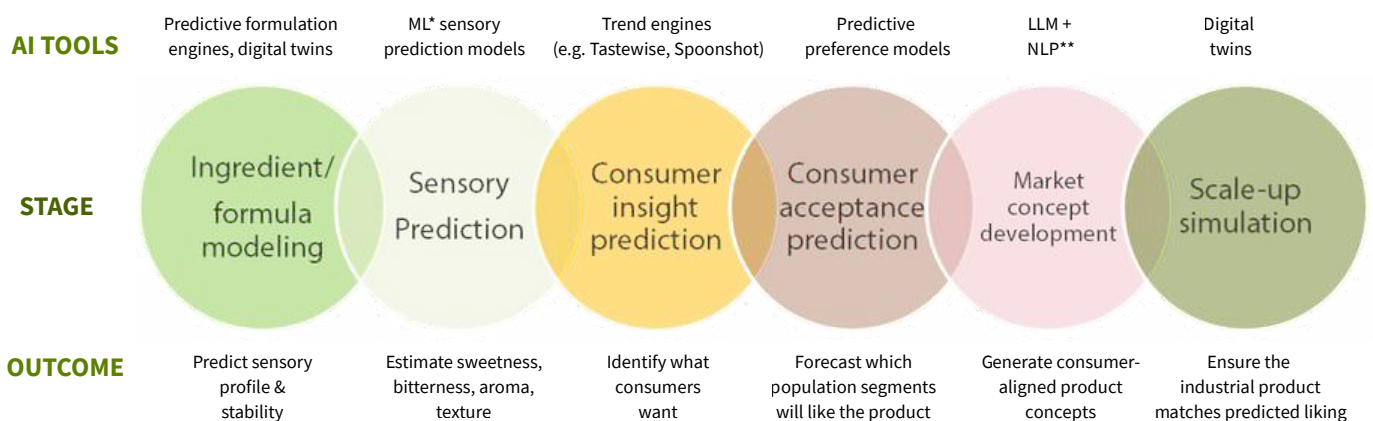
REFINING INNOVATION

Among the early adopters are Carlsberg, Mondelez, Coca-Cola, Nestlé, PepsiCo and Unilever, all of whom began using various AI tools over the last three to five years for one of the industry’s most critical activities: new product development (NPD). Long regarded across the food sector as a domain reserved for highly skilled professionals working at the intersection of science and art, NPD remains a resource-intensive creative process – driven by trial and error, continuous evaluation and refinement and extensive physical testing.

And even though companies operate in a complex environment – shaped by regulations, quality standards, manufacturing limitations, and shifting consumer preferences – modern AI systems like Large Language Models (LLM) and Large Reasoning Models (LRM) still promise to cut new-product- development resources by 70–90%.



A development workflow enhanced by AI integration may look like this:



*Machine Learning

**Natural Language Processing

¹ p. 26, Abrahms, Saul: The AI Shift in food R&D, Food Science & Technology, Volume 39, Issue 4, page 26-31, Oxford Academic 2025

² p. 26 Abrahms, Saul: The AI Shift in food R&D, Food Science & Technology, Volume 39, Issue 4, page 26-31, Oxford Academic 2025

Leaving aside how employees might feel about AI: with a people-centered approach, positioning AI as a supportive accelerator. One that streamlines workflows, reduces bottlenecks, boosts ideation and enhances human decision making which creates substantial opportunities for process optimization. In summary, a use case not so different from optimizing supply chains, procurement and sales. But can AI also be creative like humans?

PROPOSITIONAL VS. NON-PROPOSITIONAL UNDERSTANDING

Where AI truly excels is in pattern-based creativity – the mental-routine side of innovation, such as generating 100 concept variations, scanning competitors ingredients, checking formulation constraints or producing rapid prototypes.

However, even with these strengths, today's AI tools still lack sensory grounding or real sensory experience; their understanding remains purely propositional (“text-only”), meaning they process patterns in language and respond with linguistically informed outputs.

The architecture of their cognition is very different from humans - Human understanding is embodied, we learn from perception, action, emotion, memory, social experience and lived context.

Future embodied AI may narrow this gap by integrating real sensory inputs – vision, touch, sound and learning through physical or simulated interaction. Unlike LLMs, these systems anchor intelligence in a body that can sense and act.

OPPORTUNITY SEASONED WITH RISK

While multinational companies may have the resources to build their own AI systems, small and mid-sized businesses often must rely on off-the-shelf solutions – and therefore have every reason to prioritize risk mitigation, especially protecting their intellectual property. Yet with AI evolving at a breath-taking pace, even custom-built internal systems can become obsolete surprisingly quickly. Without continuous “recipe refreshment” and investment, companies risk falling behind competitors who keep their AI capabilities current and adaptive.



At Bell, we are building our AI in a secure sandbox model, protecting our intellectual property. As it evolves, it will empower our teams to analyze sensory data, predict raw material combinations and refine our formulas better and quicker. But its greatest promise lies beyond speed – it opens an arena where human creativity can truly flourish.



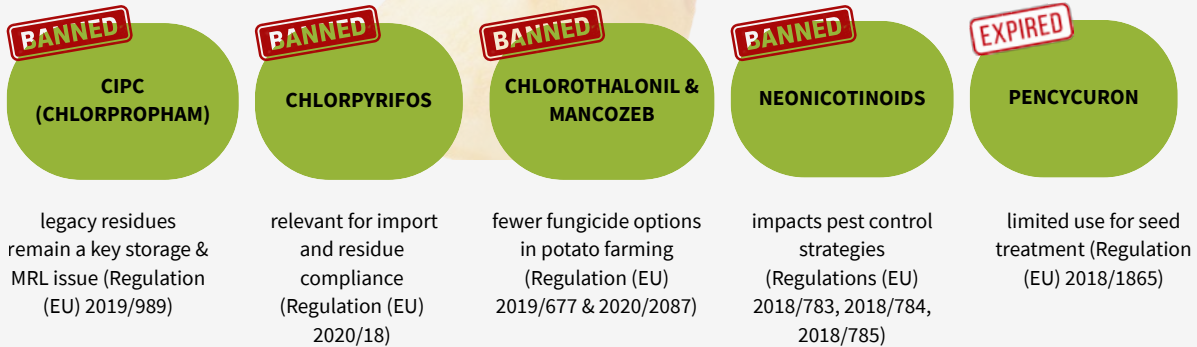
Climate change, geopolitics and regulation are reshaping the food industry. Consumers increasingly express social and political values through their food choices – driving the rise of snacktivism.

CONSUMERS CONSULTED

Bell's sensory testing is carried out in-house using expert panels trained to DIN EN ISO 8586 standards. Our standard and specialized panels work alongside consumer tests and market research to deliver well-rounded insights. Recent studies show that 43% of global consumers actively engage with brands in product development. Snack leaders like Lay's, Mondelez and Nestlé use co-creation platforms, online voting, and consumer panels to test new flavours early. Initiatives such as Lay's 'Do Us a Flavor' and Mondelez pilot launches help validate concepts, reduce risk and better match regional preferences, making consumer-driven innovation a key success factor in European snacking.



EU CROP PROTECTION RESTRICTIONS – POTATO & CHIPS



HUNGRY FOR INSPIRATION?

DISCOVER OUR LATEST DEVELOPMENTS & CONCEPTS FOR ON-TREND SAVOURY SOLUTIONS

- Missing the smoke: Natural smoke flavour solutions
- Puttin' on the fizz: Sauces with a soda spark featuring lemonades and energy drinks
- Dig a little deeper : New truffle flavours and seasonings
- Clean label umami: Trimming the list while keeping the bliss
- Cross-continental creaminess: Mayo reimaged - from classics to global tastes
- A pawisitive upgrade: Our new pet food catalogue
- Our business case for better cheese flavours: Vegan, versatile, valuable
- Smoked, spiced, and market-ready: The vegan pastrami portfolio

