

RESHAPING CPG FORMULATION: AI-POWERED DESIGN FOR THE FUTURE



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INNOVATING CPG: AI-POWERED FORMULATION FOR SUSTAINABLE SUCCESS

In the competitive world of consumer goods, innovation in formulation development is crucial for success. Companies are facing significant challenges due to **rapidly evolving consumer preferences**, **increasing demands for sustainability** and **complex regulatory requirements**.

Integrating AI-powered digital solutions is reshaping formulation design in the consumer packaged goods (CPG) industry. The advanced digital solutions enable CPG companies to:

- **Optimize product formulations.**
- **Enhance sustainability** by **identifying eco-friendly ingredients.**
- **Ensure regulatory compliance** with **greater efficiency.**

As we navigate this exciting era of innovation, the convergence of **digital technology** and **sustainable practices** is set to shape the next generation of CPG products and innovation.



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TACKLING CPG CHALLENGES

FOR INNOVATION EXCELLENCE AND COMPETITIVE ADVANTAGE

The consumer packaged goods industry presents unique challenges, particularly in the realm of formulation development. Companies regularly encounter several issues that hinder efficiency and productivity:



Data Management

Challenges in data search, traceability, and reuse hinder decision-making and process efficiency.



Lab Productivity

Low productivity delays formulation, slowing time-to-market for new products.



Market Adaptation

Rapidly changing consumer preferences demand agile and responsive product development.



Sustainability

Increasing sustainability requirements drive the need for eco-friendly ingredients, packaging, and reduced waste.



Regulatory Compliance

Strict regulations on safety, quality, and labeling add complexity to product innovation.

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STREAMLINE FORMULATION DEVELOPMENT WORKFLOW

FORMULATION DESIGN

Formulation Design, a cloud-native software solution operating on the 3DEXPERIENCE® platform, offers a comprehensive approach to formulation development:



Robust search functionality

Facilitates efficient navigation and utilization of organizational knowledge.



Intuitive user interface

Streamlines the formulation process, enhancing productivity and reducing the learning curve for new users.



Powerful calculator

Supports various formulation methods, offering flexibility and precision.



Simultaneous formula editing

Allows multiple formulas to be edited side by side, saving time and boosting productivity.



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BATCH MAKING AND TESTING

Coupling BIOVIA Formulation Design with BIOVIA ONE Lab has transformed batch making and testing processes:



Innovation batches

When working early in the innovation lifecycle, formulators can seamlessly transition from designing formulas to making batches.



Batch plan creation

Formulators can initiate batch plans with a single click, defining test specifications and routing plans for approval.



Batch making

Formulators can create GMP batches with integrated materials registration and inventory management.



Enhanced collaboration

The collaborative nature of this integration optimizes the formulation workflow and improves inter-departmental collaboration.

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AI-POWERED PREDICTIVE FORMULATION OPTIMIZATION

Advanced AI and predictive modeling capabilities driven by BIOVIA Virtual Companion and its data science features provide unique value for formulation optimization:



Real-time feedback for formulation optimization

Timely feedback on nutritional scores, cost calculation and target product profiles aids formulators in meeting objectives, thereby reducing development time and speeding up time to market.



Regulatory compliance assessment

Integrated FoodChain ID® regulatory compliance assessment provides instant choices for formulation optimization.



Predictive modeling

Predictive modeling allows formulators to identify more sustainable ingredients and optimize formulations before conducting lab experiments, saving time and resources.



Open and agile platform

Integrate your own models and algorithms with ease, while seamlessly connecting with PLM systems for streamlined formulation development and enhanced data management.



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ENSURING ACCURACY WITH INTEGRATED SPECIFICATION MANAGEMENT

In product development, ensuring accurate specifications is critical—from sourcing raw materials and formulating recipes to launching new products. However, **disconnected systems and outdated data** make it challenging for formulation teams to maintain the accuracy of finished product specifications.

With a **centralized and collaborative approach**, BIOVIA integrates Formulation Design, ONE Lab, and Specification Management on the **3DEXPERIENCE platform**, enabling:



End-to-End Traceability

Ensure compliance and substantiate claims (e.g., gluten-free, sugar-free, preservative-free) with full visibility into formulation data.



Accelerated Time-to-Market

Standardizing product specifications reduces approval delays and mitigates the risk of costly recalls.



Improved Collaboration & Knowledge Reuse

A single, accessible repository ensures formulation teams work with the latest, most accurate specifications, enhancing efficiency and product quality.

By **eliminating inefficiencies and ensuring accuracy**, brands can develop optimal recipes, **increase control over changes**, and confidently **fast-track product development** while maintaining compliance and quality standards.

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TRANSFORMING FORMULATION DEVELOPMENT

BIOVIA's formulation development solutions are revolutionizing the CPG industry, driving significant advancements and efficiencies.

20% reduction in product development time

Increased productivity

Streamlined formulation processes are minimizing time-to-market for new products.

30% reduction in sourcing costs

Resource optimization

A reduction in tests optimizes resources and enhances cost-effectiveness.

25% faster project completion times

Enhanced collaboration

Unified discovery and development, along with upstream and downstream collaboration, marks a paradigm shift in formulation practices.

50% reduction in physical testing through in silico modeling

Advanced understanding

Modeling and simulation capabilities, coupled with AI and machine learning, lead to more accurate predictions and optimized outcomes.

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OPTIMIZE YOUR FORMULATION DEVELOPMENT FOR SUCCESS

BIOVIA's powerful solutions are reshaping the formulation development landscape. With advanced capabilities and proven outcomes, BIOVIA leads the way in accelerating product development, reducing costs and fostering collaborative innovation within the industry.

Step into a future of formulation innovation, where limitless potential awaits to drive transformative breakthroughs.

Curious to learn more? Take the next step.

Contact us



Our **3DEXPERIENCE®** platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes is a catalyst for human progress. We provide business and people with collaborative virtual environments to imagine sustainable innovations. By creating virtual twin experiences of the real world with our **3DEXPERIENCE** platform and applications, our customers can redefine the creation, production and life-cycle-management processes of their offer and thus have a meaningful impact to make the world more sustainable. The beauty of the Experience Economy is that it is a human-centered economy for the benefit of all – consumers, patients and citizens.

Dassault Systèmes brings value to more than 300,000 customers of all sizes, in all industries, in more than 150 countries. For more information, visit www.3ds.com.



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