



Accelerating Coatings Innovation with Data Management and AI



Jon Weis

Director of Solutions Architecture

[Albert Invent](#)



Agenda

01 Pillars of Digital Transformation

02 Digitalization Case Studies

03 Transformation Case Studies

04 Value Scaling Case Studies

05 Conclusion



Our mission is to accelerate
the innovation of new materials.

Global team of **140+**
chemists and engineers

Empowering scientists
in **50+** countries

Used by over **250**
organizations worldwide



Nouryon



THE WALL STREET JOURNAL.

NEWS

February 25, 2025

Backed by J.P. Morgan, Albert is transforming chemical R&D with AI-driven innovation.

The growth-equity group's latest deal more than doubles the value of the AI-driven engine for research chemists

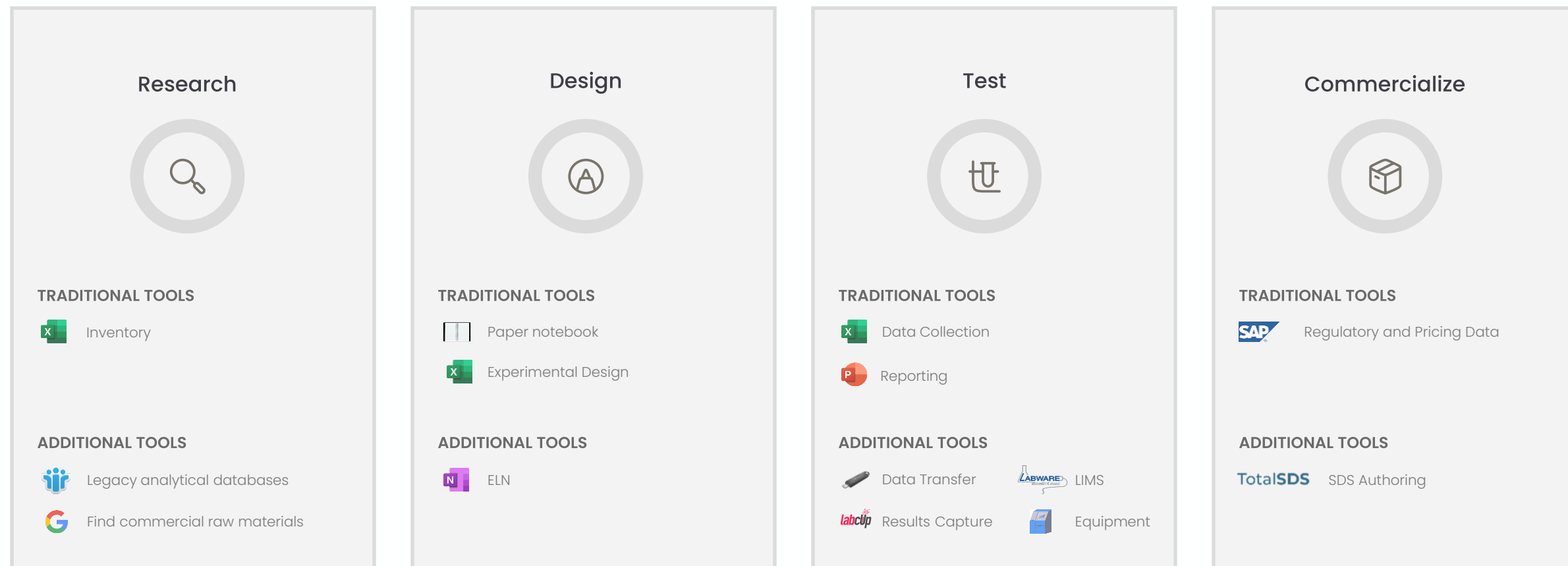
"J.P. Morgan has deep roots and history in the Chemicals industry, dating back to 1823. We believe technology is essential for the material development and how build materials that power our



Oakland, Calif.-based company uses AI and machine learning to aid chemists in the research and discovery of new formulations and materials.

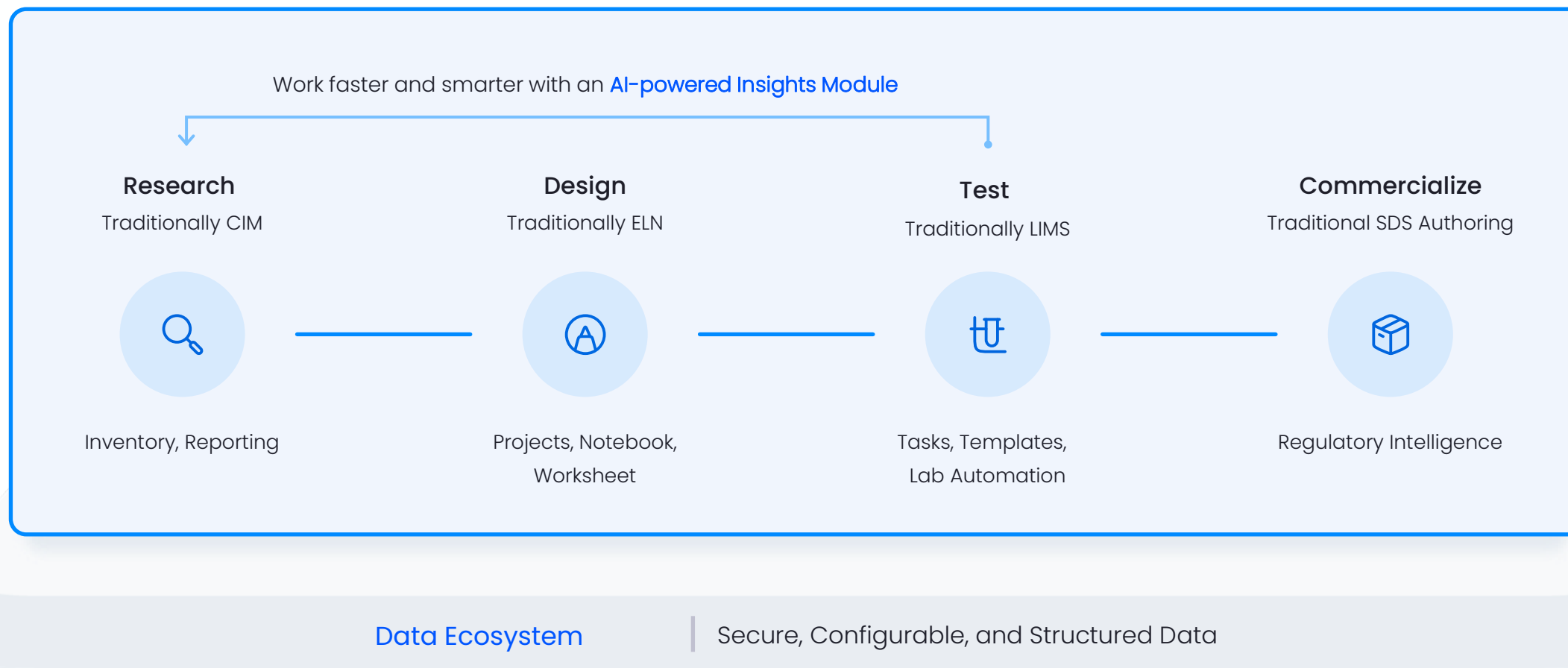
The Root Problem

Scattered Tools and Unstructured Data Slow Down R&D Innovation



Removing Barriers: An End-to-End R&D Operating System

True Digital Transformation Requires a Single Source of Truth for R&D Data



Value of Being a Data-Driven Organization

Impact on R&D Businesses

(McKinsey)

DATA-DRIVEN COMPANIES

19x

More likely to be profitable

6x

More likely to retain customers

23x

More likely to acquire customers compared to their competition

EXAMPLES OF RISK REDUCTION AND INCREASED SPEED TO MARKET WITH ALBERT

Opportunity: **15%+ decrease in Operational Risks**

Opportunity: **20%+ increase in Speed to Market**

CUSTOMER PROOF POINT

Up to **50% increase** in Speed to Market, **6% margin increase** with new product launches

The return on modernizing R&D.

19x more likely
to be profitable

23x more likely to
acquire customers

6x more likely
to retain them

Accelerate Product Velocity

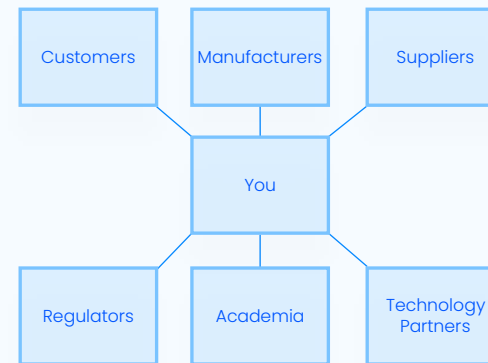
- Standardize data and workflows to align R&D teams and eliminate fragmentation
- Generate and optimize formulations based on defined performance targets
- Reduce development cycles and get products to market faster

Attract and Empower Talent

- Automate low-value work so technical teams can focus on insight, not admin
- Equip scientists with modern, intuitive tools that support how they want to work
- Create a high-performance environment that draws and retains top-tier talent

Ecosystem Leadership

- Mature companies are a partner of choice in digital ecosystems



Adapt to Market Change

- Quickly respond to supply chain disruptions and regulatory shifts
- Modify formulations and development plans in real time to meet requirements
- Keep projects on track without losing momentum, even in volatile conditions

The Pillars of Digital Transformation

Pillar 1

Digitalization

Builds the technical foundation for modern R&D by standardizing data, connecting systems, automating labs, and enabling advanced analytics and AI.

Pillar 2

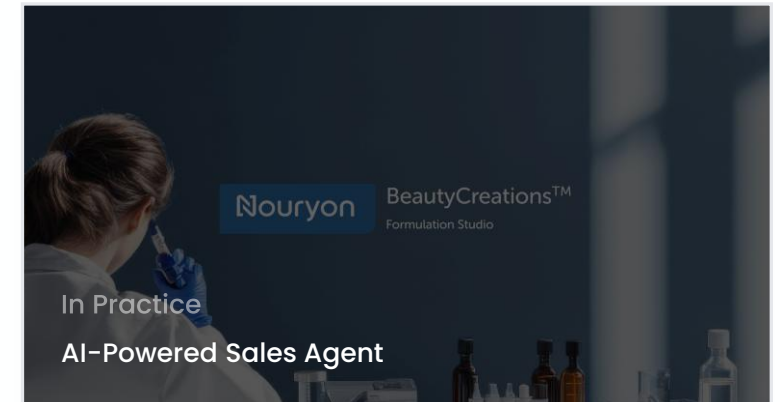
Transformation

Drives the cultural and organizational shift needed for change through leadership alignment, digital fluency, collaboration, and change management.

Pillar 3

Value Scaling

Ensures maturity delivers impact by integrating market feedback, strengthening supply chains, enabling compliance, and connecting external partners.



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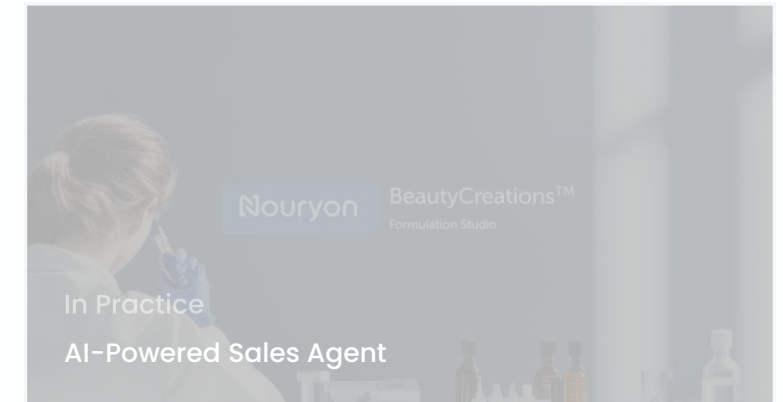
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The Path of Digitalization

Partnering with Albert to methodically drive increasing business value

Step 1

Centralize & structure your R&D data

Modernize by replacing paper notebooks, Excel, and disconnected tools.



Inventory



Projects & Notebook



Worksheet



Tasks

\$ Foundational ROI through IT consolidation.
preservation of institutional knowledge

Step 2

Increase the productivity of R&D

Adopt AI and automation that redefine workflows and accelerate innovation.



Regulatory Intelligence



Analytics



Lab Automation



Breakthrough

\$\$ Strategic ROI added through efficiency
gains and increased speed to market

Step 3

Enable new business models

Fundamentally change how you serve your customers and bring products to market.



Customer Portal



AI Sales Agent



LLM Product Finder

...and more

\$\$\$ Transformational ROI through new
revenue generation and margin expansion



Henkel Connects Global R&D Under One Digital Roof

Henkel

Pillar 1 | Digitalization

Henkel, a Fortune 500 global leader in adhesives and materials science, became the first major chemical company to unify global R&D through a centralized digital platform — building the foundation for new workflows and accelerated innovation.

Global Rollout

3,000+

Scientists, technicians & engineers

10.5M

Clean & structured data points collected

100+

Labs across 41 countries

225,000+

Products invented across 170 technologies

Henkel Accelerates High Throughput Testing and Product Development

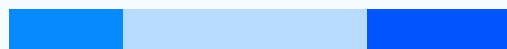
Henkel

Pillar 1 | Digitalization

Henkel is reaping the benefits of its digital foundation through a 30% reduction in semiconductor product development timelines. Albert also serves as the backbone to their automated lab, enabling both higher throughput and quality for routine testing.

30%

Reduction in development timeline



Before Digitalization



After Digitalization

■ Requirements Definition ■ Development
■ Validation ■ Launch

60k+

Annual high throughput samples

Weeks to same day

Reduced testing timeline

64

Net Promoter Score

“With automation, I can work more efficiently – freeing me to explore new directions and unexpected formulations.”



Karen Midori
Product Development Technician
Henkel

Applied Molecules Uses AI to Reinvent Their Go- to-Market Motion



Pillar 1 | Digitalization

Applied Molecules used AI-powered experimentation to accelerate the development of high-performance materials — enabling broader market exploration while drastically reducing formulation time. **Automated SDS generation** also enables working with large customers, who had historically been unreachable.

Dampening Materials

22 existing formulas referenced

30 AI-generated formulations tested

3 iterations performed in software

3D Printing

60 existing formulas referenced

45 AI-generated formulations tested

12 iterations performed in software

Development reduced from 3 months to **2 days**



"If you gave me 5 years, I never would have tried this formula. But it worked."

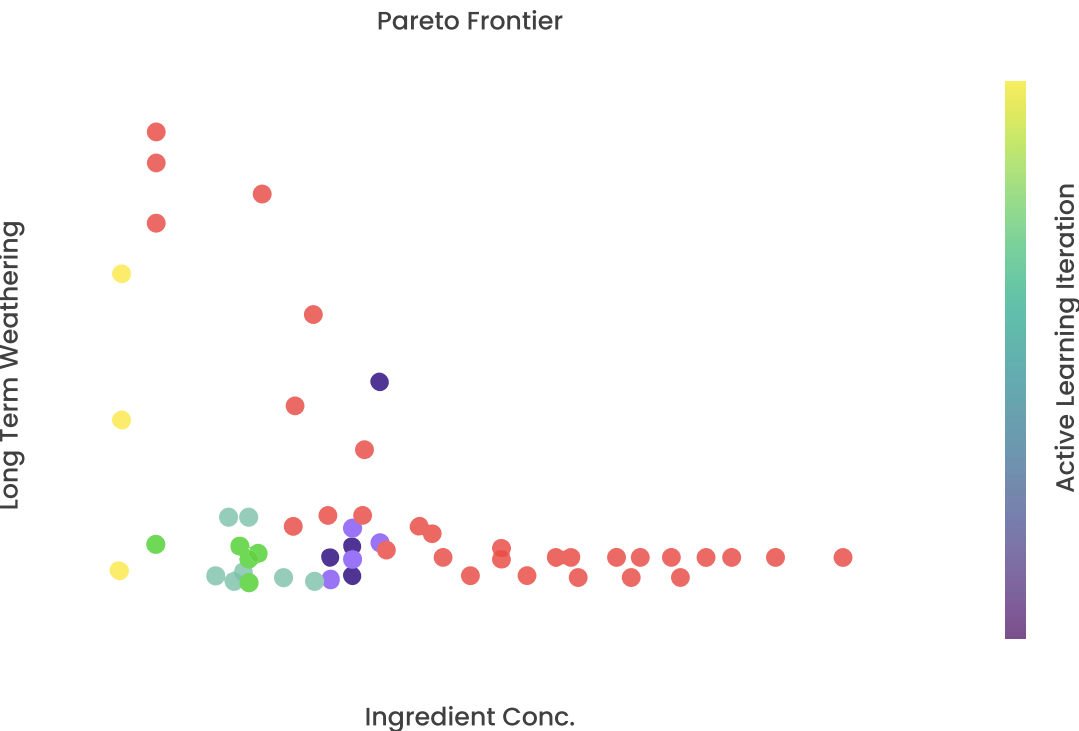
Nicholas Gripp, Senior Scientist, Applied Molecules

Real World Results

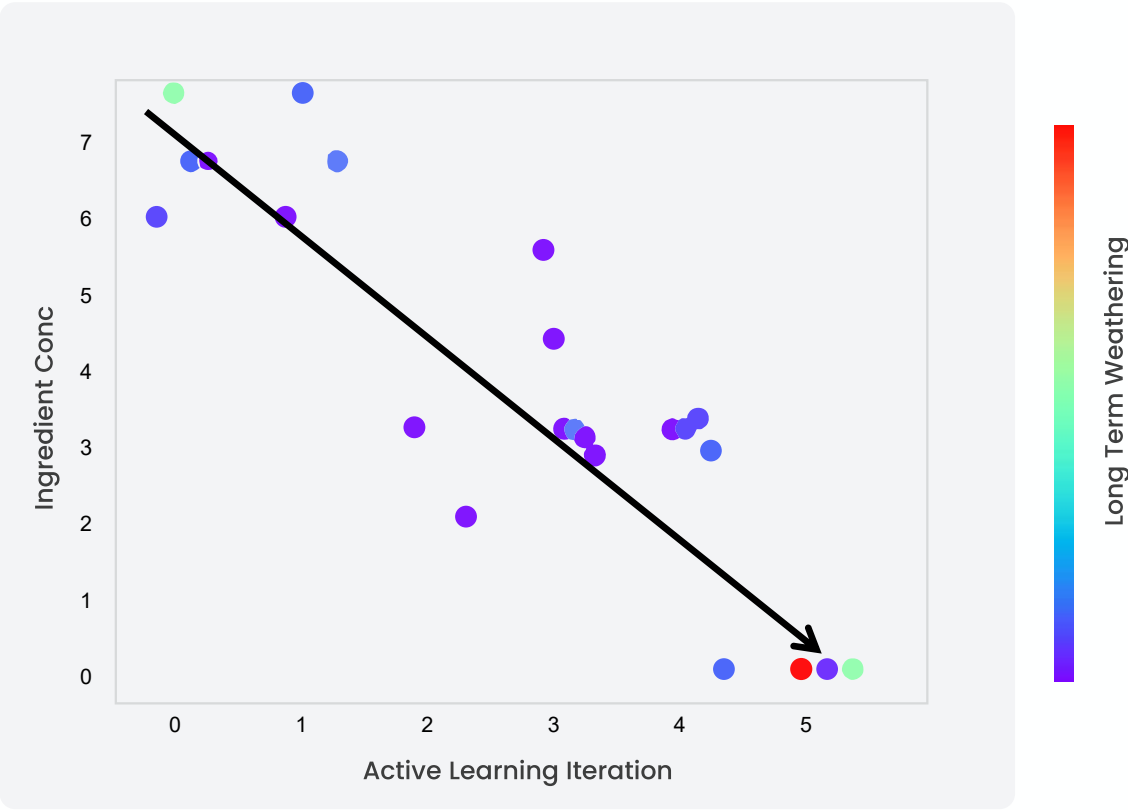
Fortune 500 Coatings Corporation



Using AI to guide the elimination of regulated ingredients while maintaining weathering performance



New candidates continue to push beyond the historical frontier and get progressively closer to eliminating the regulated ingredient and maintaining a low long-term weathering



Active Learning has helped to surface a progression of experiments where ingredient concentration has been decreased to zero while also providing low long term weathering candidates

Note: X-axis values are jittered for visibility

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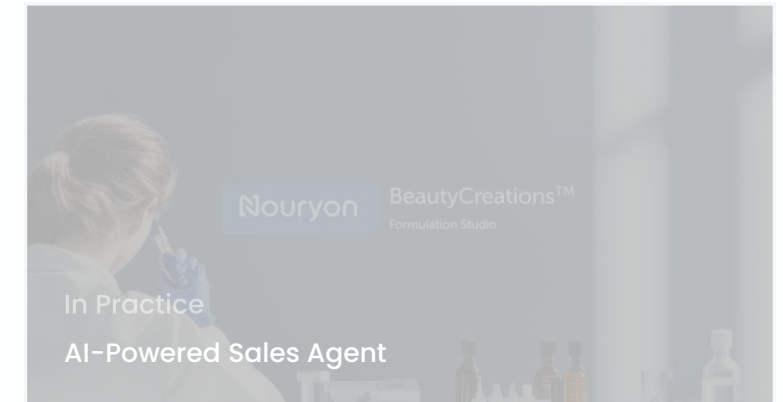
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People management drives data management

Pillar 2 | Transformation

From cross-functional collaboration to digital literacy to change management, digital transformations go beyond updating tech stacks and equipment.

“We invited teams across R&D, IT, and Regulatory to help build the digitalization vision: What tools will support your work?”



Stefan Wurtemberger
Executive Vice President of IT
Marabu Inks

Senior Scientist
Global Chemistry Company

“I didn’t see the value of digitalization until we were able to automate the data collection with an old piece of equipment. Now, I’m all in.”

“My new hires expect to work with modern platforms while legacy employees prefer to use familiar tools. [This software] bridges the gap in satisfying both groups.”



Maryalice Belluscio
Technical Service Manager
Personal Care, Nouryon

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In Practice

Global Deployment and Accelerated Innovation

In Practice

Effective Change Management

In Practice

AI-Powered Sales Agent

Nouryon

BeautyCreations™
Formulation Studio

Nouryon Launches 'BeautyCreations,' an AI-Powered Formula Discovery Engine

Nouryon

Pillar 3 | Value Scaling

Nouryon transformed customer engagement with an AI Sales Agent — a portal to streamline how their customers (formulators) discover products, explore ingredient options, and request samples.



Smart, interactive
formula discovery



Search by function,
application, & more



Download product
formulations



Request samples
directly through
the portal

"This initiative represents more than just a technological advancement—it establishes a new standard for supplier-formulator collaboration in the personal care industry."



Johan Landfors, CTO, Nouryon

73

Net Promoter Score

SKU Rationalization

Pillar 3 | Value Scaling

CHALLENGE

Identifying duplicate formulations through SKU rationalization of large historical database of formulations (from SAP)

APPROACH

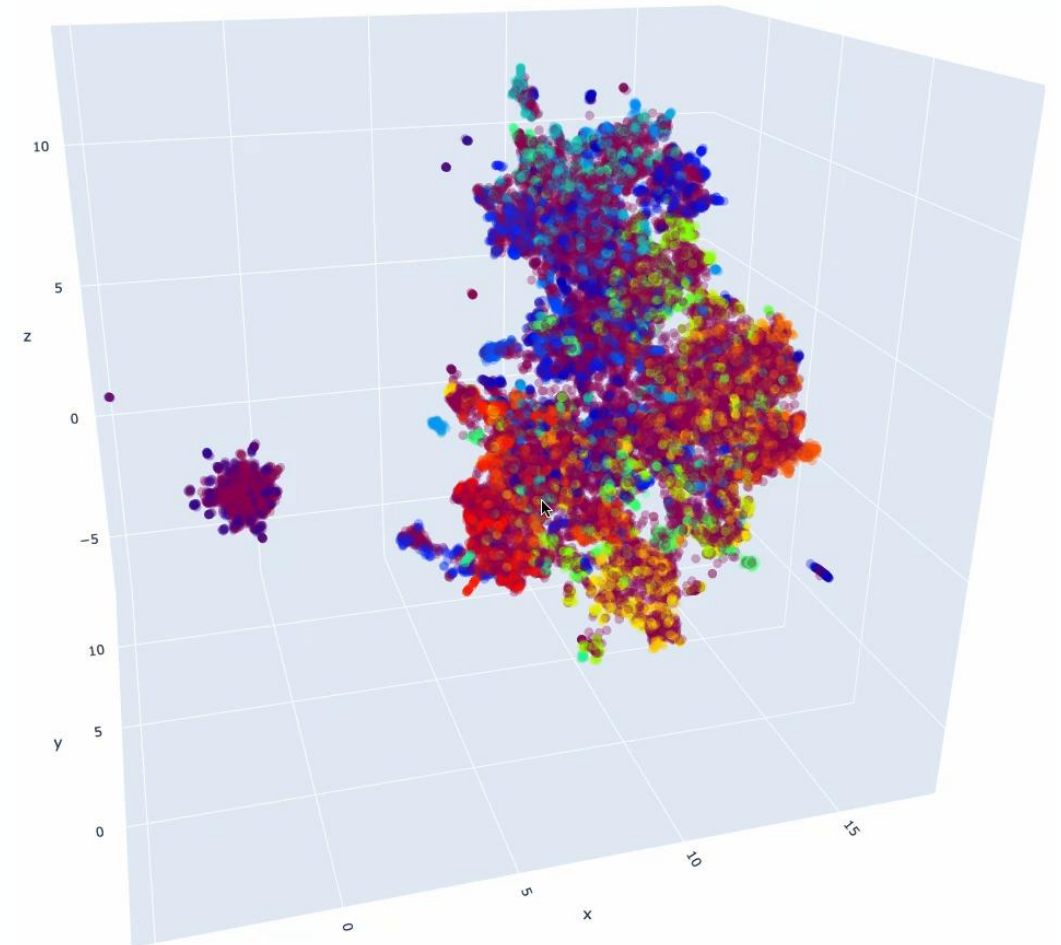
Leverage **Formula Embedding** model to identify duplicates (set formula similarity threshold to classify duplicates)

EXECUTION

Analyze 400K+ formulations from customer's legacy data system to identify duplicates (and identify optimal similarity threshold)

OUTCOME

Thousands of duplicate SKUs identified and removed



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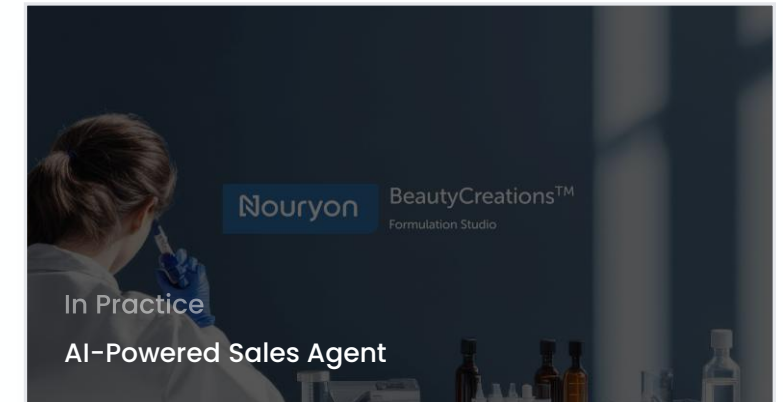
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Thank you.



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