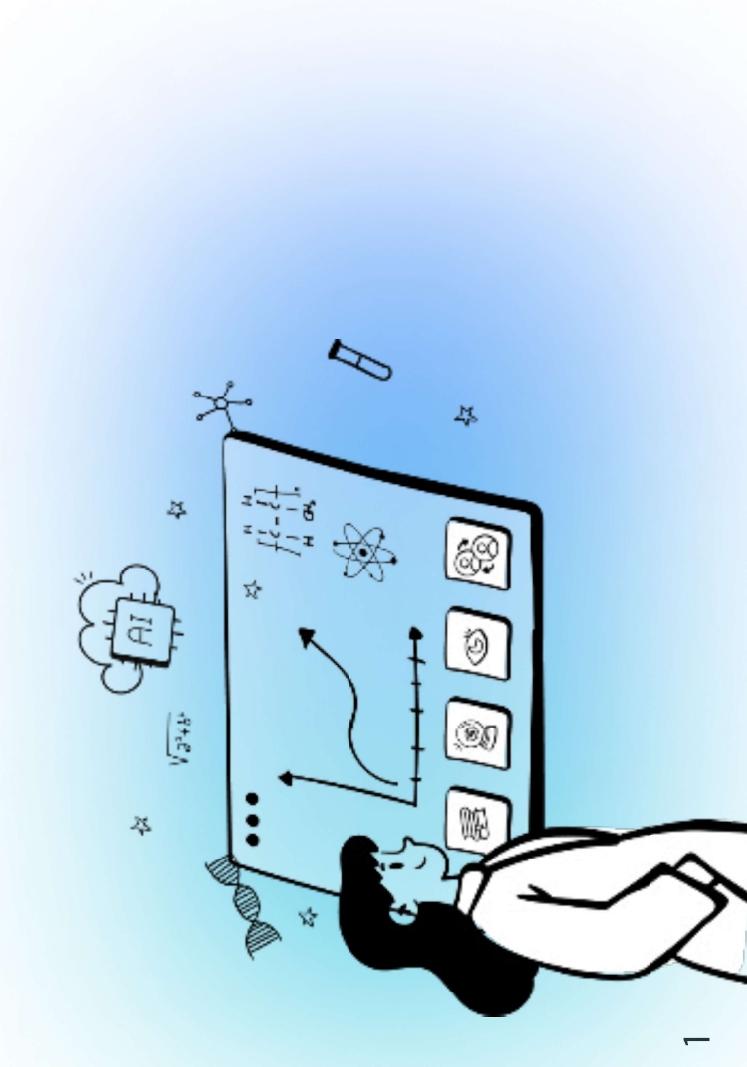




Revolution in cosmetics: AI-Driven Solutions for Smarter Formulations

Bring Your Products to
Market Better and Faster

March 18, 2025 | 10:40AM



The Challenges of Cosmetics R&D

External Pressures



- Fast-changing consumer trends
- Regulatory compliance hurdles

Process Struggles



- Long testing cycles
- Complex ingredient interactions

Formulation Tradeoffs



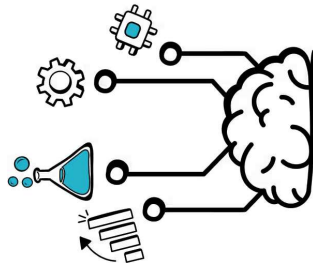
- Stability vs. performance
- Safety vs. efficacy
- Sustainability vs. cost



“These challenges are not unique to your industry!”



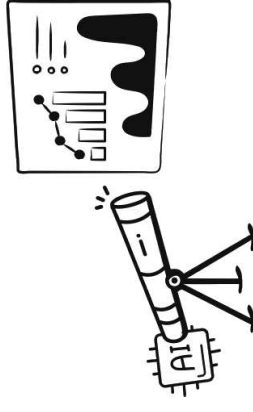
The Answer to the Challenge



Team of Subject Matter
Experts, 8 years
experience with leading
global organizations and
research teams



Help to Centralize Data
within the organization



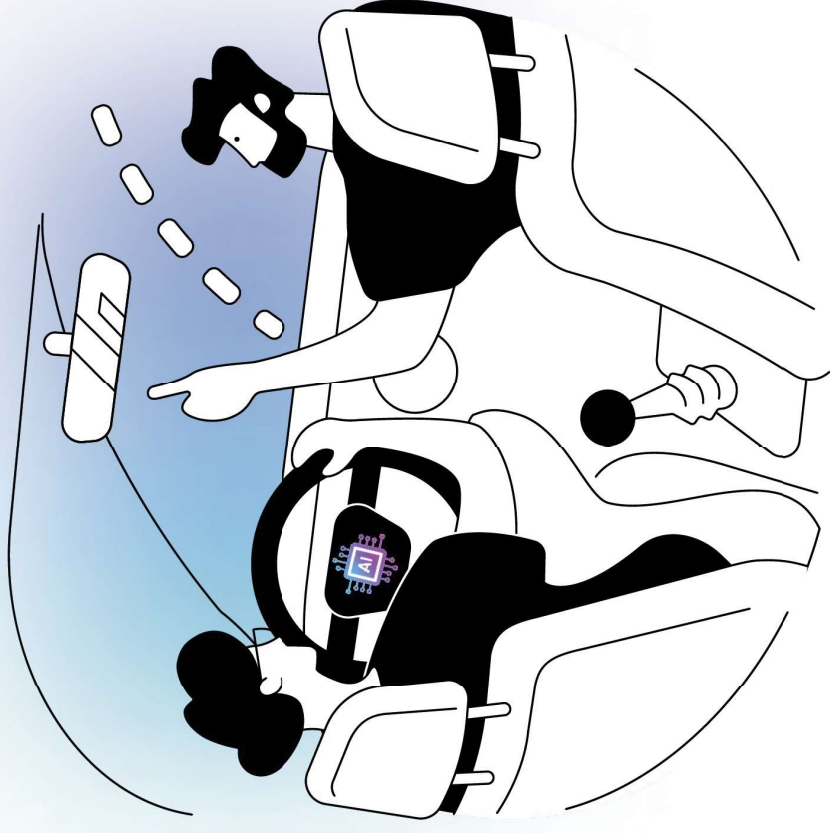
Process acceleration
with AI/ML
(More than just LIMS/ELN!)

Goal: Bring Better Material Products to Market Faster



AI is the vehicle that gets you to your destination faster.
Where do you want to go?

- ✓ **Avoid Lengthy DOEs**
- ✓ **Target-Focused Suggestions**
- ✓ **Reformulation Predictions**



MaterialsZone™ Solution

It's all about materials data and value creation accelerated by AI

Materials Knowledge Center

- ▶ Consolidate internal/external data sources, one coherent structure
- ▶ Materials and process specialized data architecture
- ▶ Persona-driven access

Predictive Co-Pilot

- ▶ AI modeling of the whole R&D process
- ▶ Predict experimental results, reduce iterations
- ▶ Forecast outcomes for informed decision-making

Visual Analyzer

- ▶ Gain insights, data-driven decisions
- ▶ Cross organizational, multi-dimensional analysis
- ▶ Detect patterns within the R&D process

Collaboration Hub

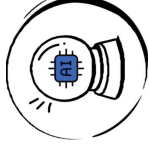
- ▶ Cloud-based and real-time
- ▶ Cross-departmental collaboration
- ▶ Organizational memory of data, process and insights



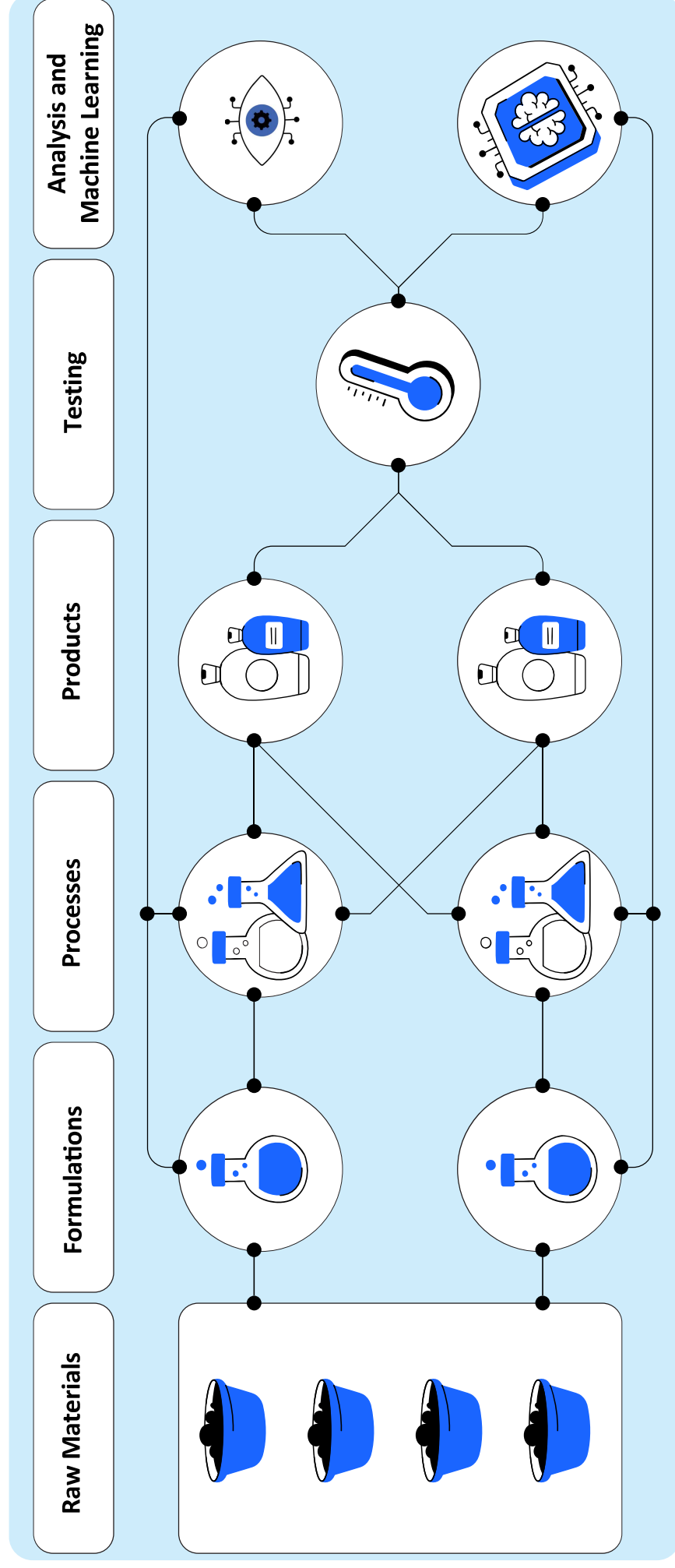
Predictive R&D Co-Pilot

Guiding Intelligent Decision Making

- **AI-Driven**
Leverages ML regression models and Bayesian optimization for materials development
- **Comprehensive Modeling**
Combines R&D data with material availability, pricing, regulations, and sustainability
- **Actionable Insights**
Optimizes cost, performance, and sustainability while reducing reliance on costly experimentation
- **Empowered Decision-Making**
Enables researchers to adapt to market demands and replace non-compliant materials efficiently



How it Works



Reformulate Quickly

MaterialsZone

Home Apps Items Table Settings

1 items selected Clear

View as: Add filters

Search

Generate AI Suggestions

>><< Ingredients				>><< Formulation Details				>><< Properties			
Name	Water	Resin	Solvent	Pigments	Siccatives	Cost	Emission Factor	Viscosity	Hardness	VOC	
	%	%	%	%	%	\$/kg	kg CO2 / ton	\$	\$	%	
☒ Low VOC Project-1-Recommendation	18	37	10	28	1.5	10.675	24.7	96.8	93.7	9.29	

Inputs

Water

Resin

Solvent

Pigments

Siccatives

Outputs

Cost

Emissions

Viscosity

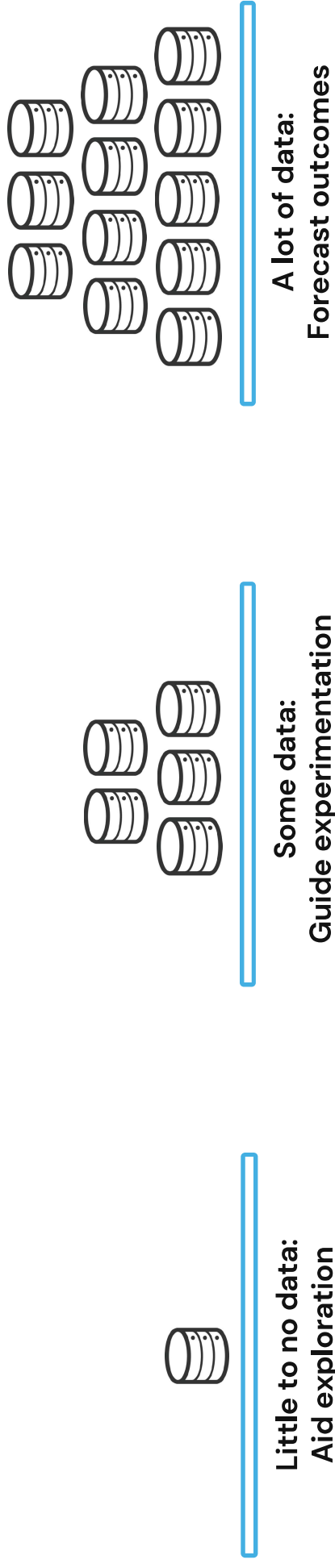
Hardness

VOC

8

8

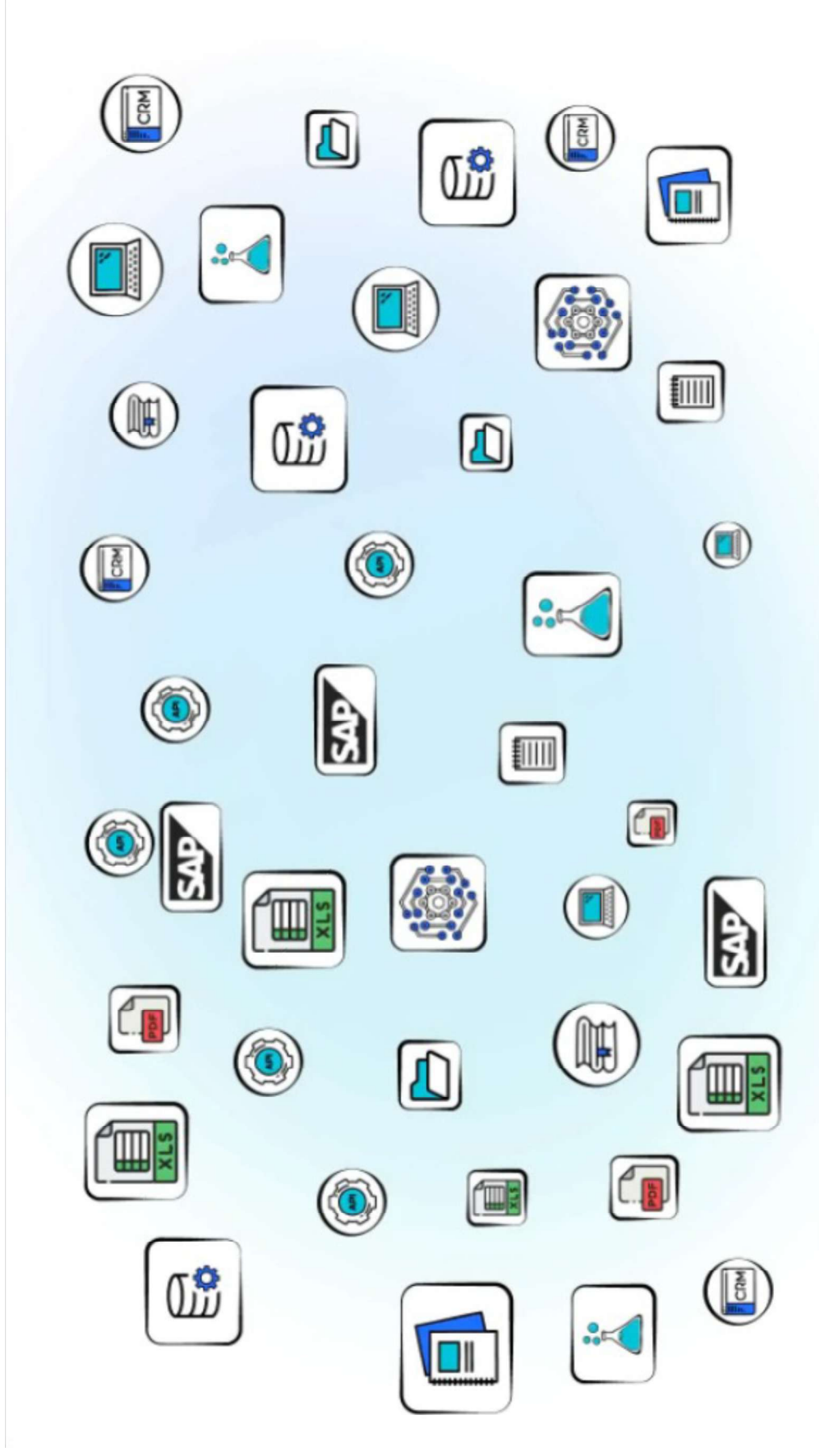
Do I need a lot of data to start with AI?



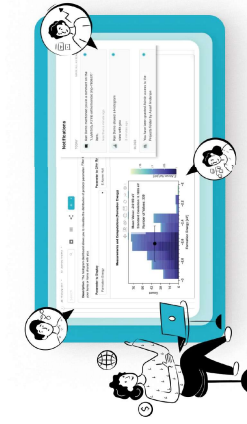
You don't need to migrate all your organizational data to start benefiting from AI acceleration!



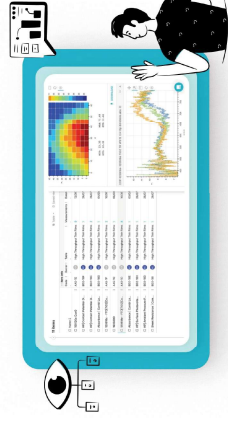
First Hurdle: Data Organization and Availability



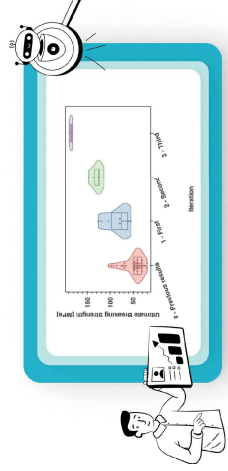
Now That Data is Organized and Structured – Let's GO!



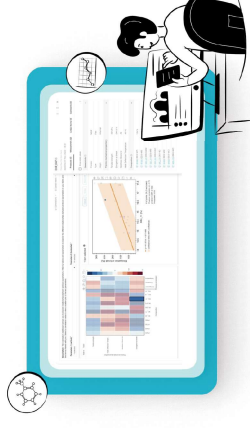
Facilitate
Collaboration



Zero
Knowledge Loss



No Siloed
Data



Visibility and
Transparency



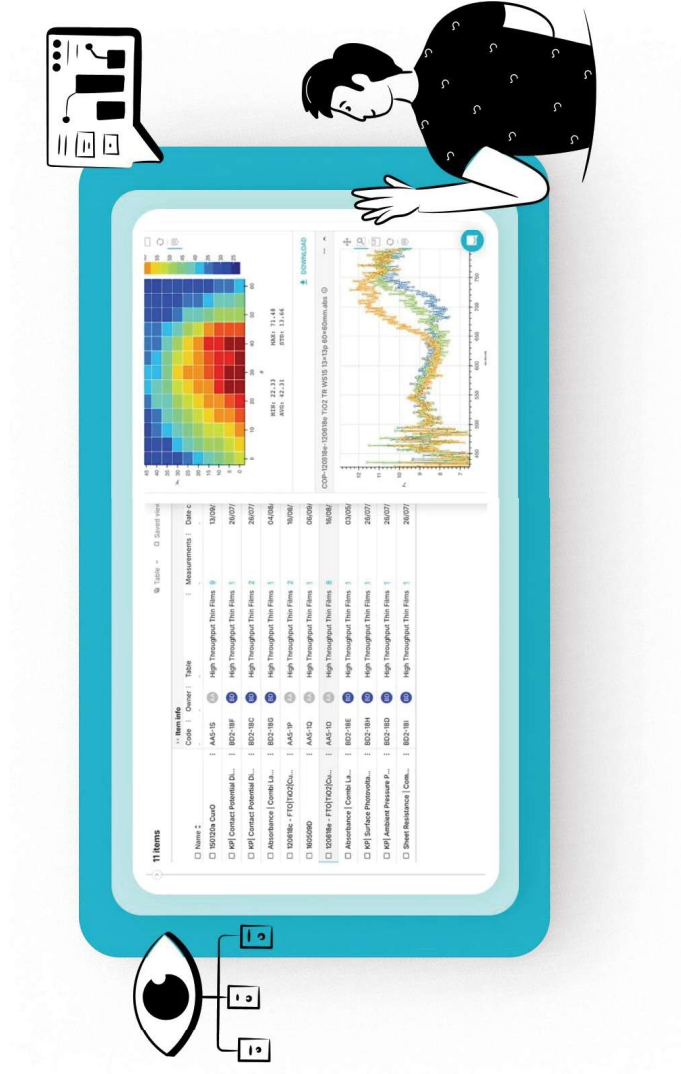
Knowledge Retention

Facilitate Collaboration

Zero Knowledge Loss

No Siloed Data

Visibility and Transparency



Reach your Carbon Footprint goals faster with MaterialsZone!



Emission Factor
Synchronization



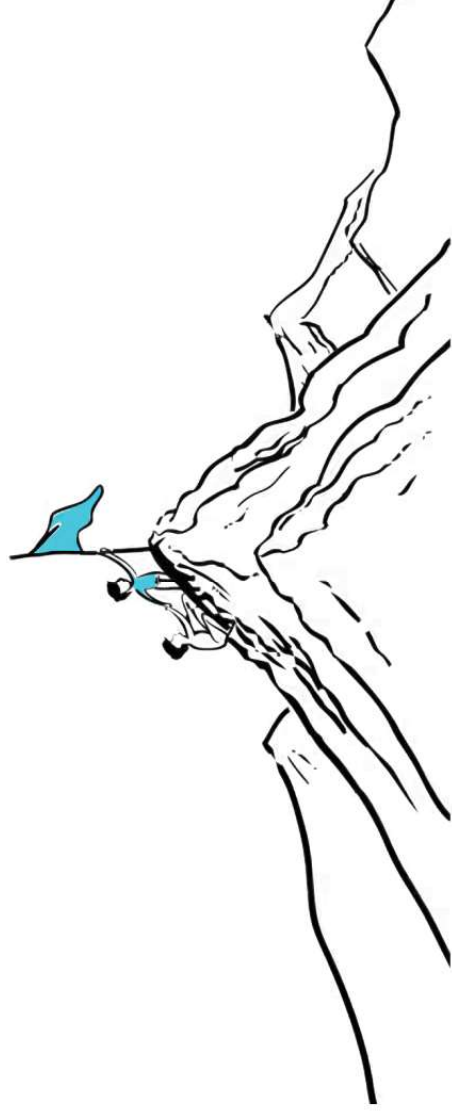
Real-time Carbon
Footprint Calculation



AI-Guided Optimization
for Compliance



Important Factors to consider in choosing a Materials Informatics Partner



Security
SOC-2

Domain
Experience

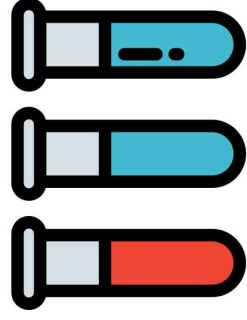
Flexibility

Qualified &
Dedicated Team

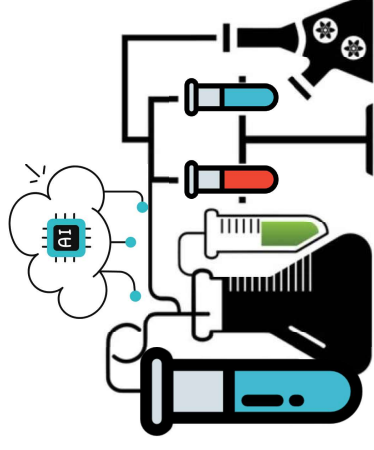
3 approaches to get started with AI-Guided R&D



Demo Your
Data



Solve a
Challenge

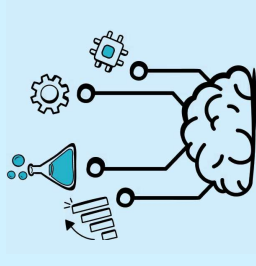


Develop a New
Product

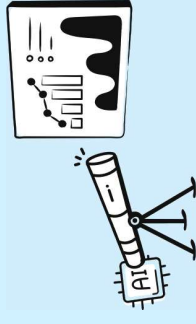


To Wrap up: What does Successful AI-Guided R&D look like?

- Experiments are documented in a centralized, secure and accessible platform
 - Handwritten notebooks, excel sheets, PDF's – history!
 - Usable, organized and structured data – AI / ML ready
 - Start small and aggregate historical data as you go



- FAR less experimentation with superior results:
 - Bring more, better products to market faster
 - Improve existing formulations, quickly
 - Streamline formulations, processes & machinery performance
 - Realize profound cost savings



Case Study

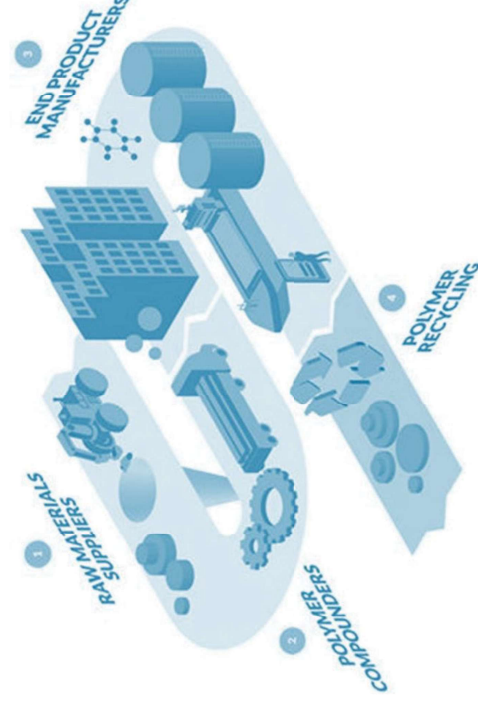
Global Masterbatch and Compounds developer and manufacturer or the plastic industry

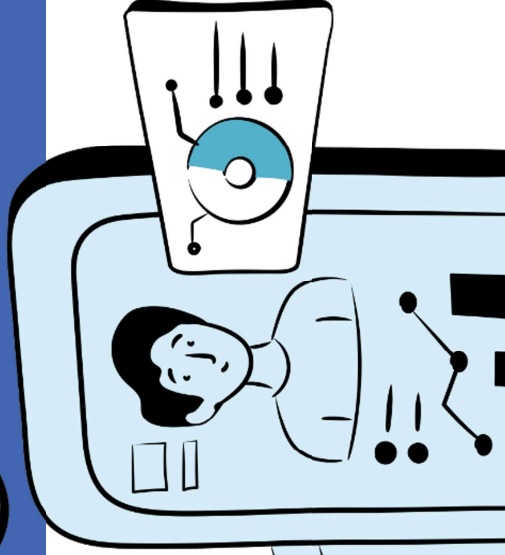
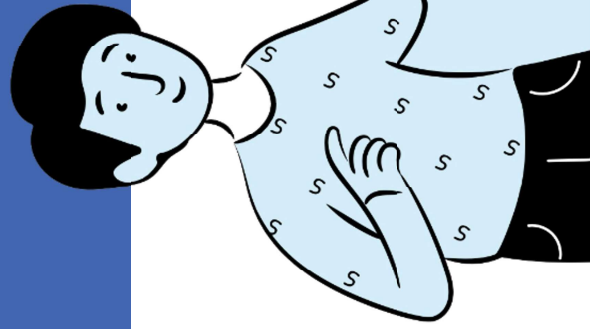
- Challenge

- > Data is distributed across departments; 9 global facilities, and different information systems
- > Repeated work and inefficiencies across departments, resulting in time and material losses
- > Inability to predict performance (in R&D and Production)

- Solution

- > Integration and Collaboration at the local and global level:
 - Globally Harmonized Raw Material Catalog, Product Catalog, QC Performance
 - Global R&D experimental database
- > New product development prediction with limited historical data
- > Reduce the number of experiments needed to achieve the desired Formulation by recommending optimal formulations and process conditions





Thank You



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www.materials.zone



[@materials-zone](https://www.linkedin.com/company/materials-zone)

