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Why AgChem Needs DMaaS

What Exists, What's Missing, and Why Data Models Will Define the Next Era of AgChem

Executive Summary

AgChem companies face intensifying margin pressure, fragmented internal data, and a growing need to convert insight into action—fast and reliably. Many internal data teams lack the specialized agricultural expertise, infrastructure, or scalability to meet that demand.

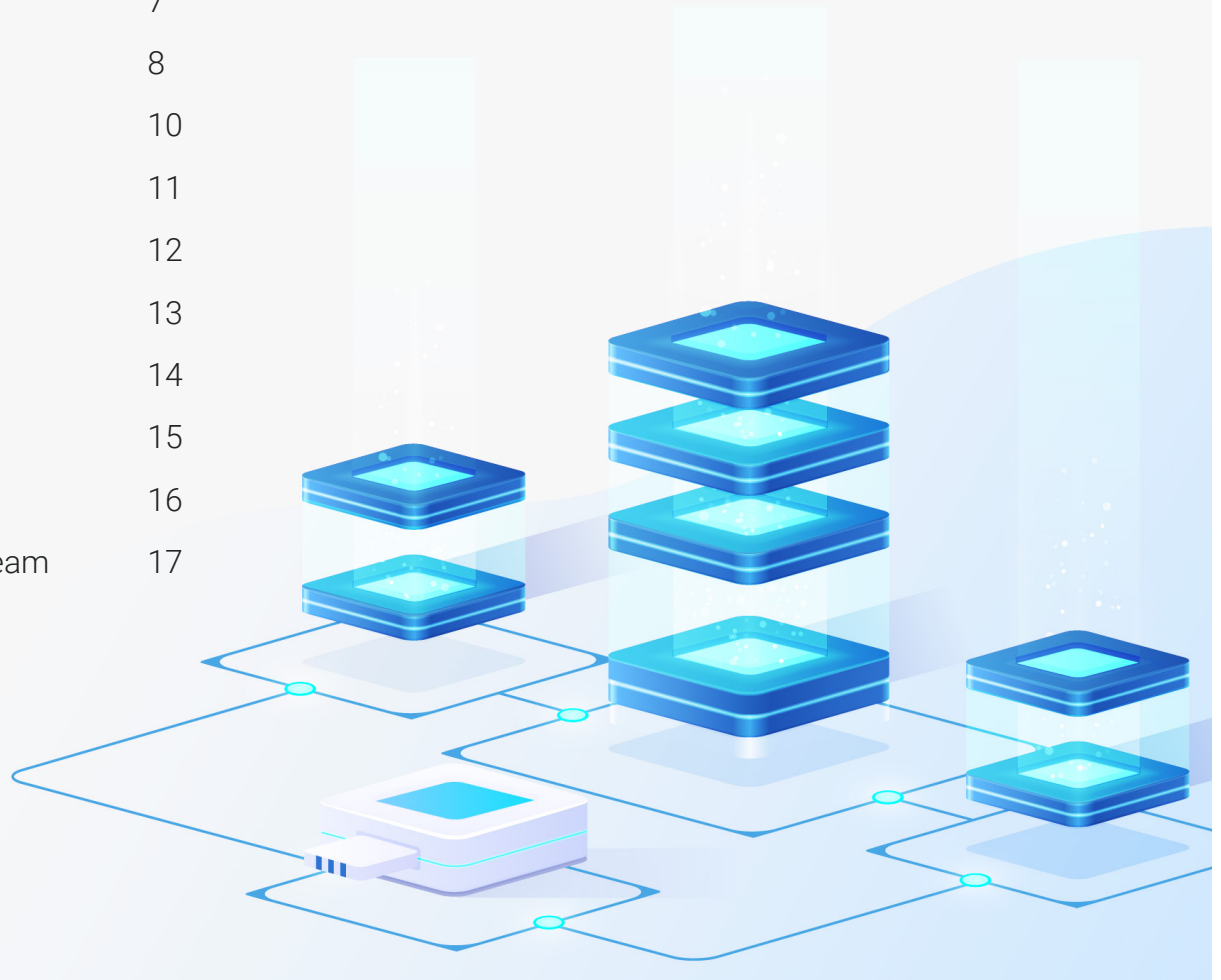*Data Modeling as a Service (DMaaS) delivers a strategic alternative.*

In This Paper, You'll Learn:

- Types of DMaaS in agriculture

- The case for DMaaS in AgChem

- DMaaS vs. traditional BI and internal builds

- Business benefits for Ag Leaders

- Real-world use cases across sales, R&D, ESG, and supply chain

"87% of agrifood companies say fragmented data is limiting their ability to scale digital initiatives." — **Deloitte Agrifood Tech Outlook**

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What is DMaaS?

DMaaS (Data Modeling as a Service) delivers custom, continuously optimized data models as a fully managed service—eliminating the need for large capital expenditures (CapEx) or internal data science headcount.

How Does it Apply to Ag?

In agriculture, DMaaS integrates vast, field-level agronomic datasets and scalable infrastructure to support product development, commercial strategy, sustainability, and risk management.

DMaaS = Plug-and-play data science for commercial, R&D & sustainability teams.

- **Custom Model Development** – tailored to your products, markets, and internal data

- **Data Infrastructure** – cloud-based architecture for real-time ingestion, processing, and delivery

- **Ongoing Optimization** – continuous tuning, retraining, and support by experts in agronomy and AI

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Traditional BI tools weren't built for dynamic, data-rich environments like agriculture.

DMaaS offers a next-generation alternative—designed to evolve with the business, not just report on it.

	Traditional BI/Dashboards	DMaaS
Data Usage	Predefined reports	Custom model logic using your internal data
Delivery	Static dashboards	Live delivery via cloud or your systems
Support	One-time setup	Continuous model optimization
Scale	Hard to expand	Built to scale across products, regions, and use cases

Example platforms: IQVIA Human Data Science Cloud, FE real-time engine

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DMaaS isn't software—it's a managed service that thinks, learns, and grows with your business.

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DMaaS - Proven Across Industries

PHARMACEUTICAL

50%

faster development and fewer prototype iterations using advanced modeling and simulation tools.

— Deloitte Life Sciences

RETAIL

2-5%

margin increase and 10–20% stockout reduction driven by predictive pricing and supply chain models.
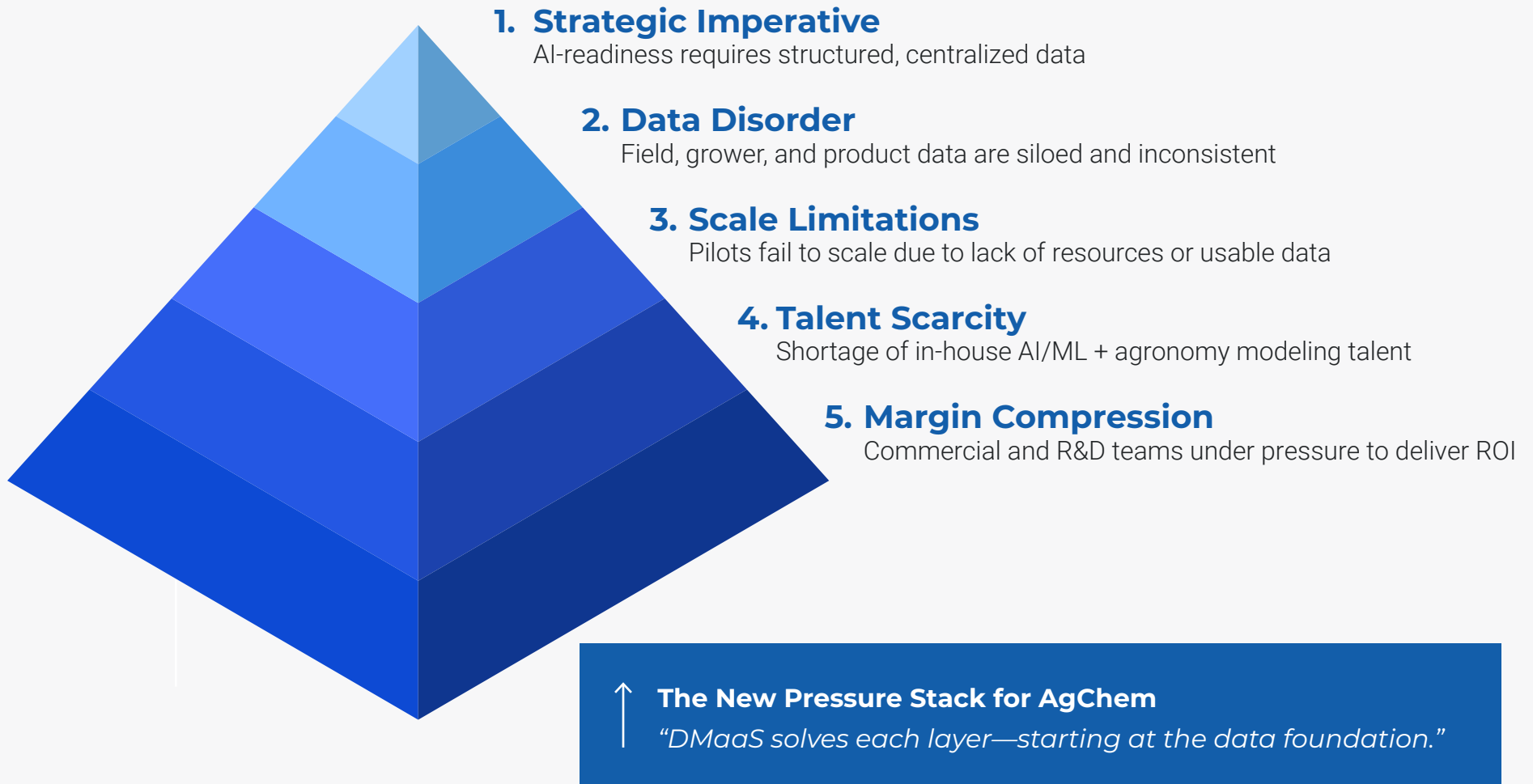
— McKinsey Retail Analytics

INSURANCE

20%

less fraud and 40% faster underwriting from AI-powered risk and claim models.

— Accenture Insurance Outlook

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From Bottleneck to Business Driver: The Case for DMaaS in AgChem

1. Strategic Imperative
AI-readiness requires structured, centralized data

2. Data Disorder
Field, grower, and product data are siloed and inconsistent

3. Scale Limitations
Pilots fail to scale due to lack of resources or usable data

4. Talent Scarcity
Shortage of in-house AI/ML + agronomy modeling talent

5. Margin Compression
Commercial and R&D teams under pressure to deliver ROI

↑ **The New Pressure Stack for AgChem**
"DMaaS solves each layer—starting at the data foundation."

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For ag leaders, DMaaS isn't a tool—it's a strategic move.

Ag Enterprises that treat data modeling as a core business function—not a one-off project—are gaining speed, precision, and flexibility. DMaaS embeds an intelligence layer into your existing systems providing a fast and cost-effective way to scale operations and reduce internal drag.

Speed to Market:
Go live in 6 weeks, not 6–12 months

Expertise on Demand:
Access elite AI/ML talent and agronomic modelers

OpEx-Friendly:
Shift spend from capital budgets to operating budgets, reducing sunk cost

Scalable Infrastructure:
Grow from local pilots to global, cross-crop deployments

Future-Proof Foundation:
Enables AI readiness, regulatory compliance, and digital agronomy leadership

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4 Types of Data Models Purpose-Built for Ag

Descriptive
Identifies current crop conditions through tools like **crop classification and health monitoring** via satellite or sensor data

Predictive
Forecasts future risks such as disease or pest outbreaks by **analyzing growth stages** and environmental triggers.

Prescriptive
Recommends specific actions, like nitrogen application timing or **nutrient balancing, to optimize crop health and yield.**

Diagnostic
Explains observed anomalies by comparing **field trends** and weather history to detect underlying stress or management issues.

These models are purpose-built for agriculture—developed, validated, and maintained by Farmers Edge.

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5 Strategic Applications of DMaaS for Ag Enterprises

1. Sales Enablement
Optimize rebate programs and territory pricing through behavioral clustering at the grower level—boost margin without over-discounting.

2. Customer Experience
Deliver personalized agronomic recommendations based on soil, weather, and historical practices—driving loyalty and product adoption.

3. R&D Acceleration
Model formulation performance across soil types and climate zones before field trials—cutting development timelines and cost.

4. ESG & Sustainability
Generate scalable Scope 3 emission estimates, SOC projections, and field-level GHG tracking—strengthening sustainability claims with data.

5. Supply Chain Resilience
Predict regional demand curves based on grower intent and crop forecasts—reducing stockouts and overproduction risk.

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Key Challenges of In-House Data Modeling

Build vs. License

Building **in-house capabilities takes 12–18 months on average**, with startups reporting internal AI project costs of $500K–$1M per model. (McKinsey Analytics)

Inaction is Expensive

87% of AI strategies fail to scale due to fragmented or unstructured data (Gartner AI Readiness). Slowed innovation leads to **missed margin gains and market share erosion**

AI-Readiness Gap

Predictive pricing, sustainability scoring, and generative insights all require a clean, structured foundation. DMaaS builds that foundation—**and keeps it future-proof**

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3 Advantages of DMaaS for Ag Leaders

1. Accelerated Time-to-Impact

Ag leaders can't afford delays. DMaaS delivers deployable, fit-for-purpose data models in weeks—not quarters—accelerating time-to-insight for product launches, sustainability programs, and pricing strategies.

Why it matters: 90% of digital transformations stall due to slow internal execution. DMaaS eliminates that bottleneck.

2. Scalable Expertise Without Headcount or CapEx

Instead of building expensive internal teams, DMaaS provides immediate access to advanced modeling capabilities, purpose-built for agriculture. No need to hire data scientists, build infrastructure, or justify a 6-figure model build.

Why it matters: The average cost to hire and retain a data science team exceeds $500K annually. DMaaS turns that into predictable OpEx. (Deloitte)

3. Enterprise-Grade Data Foundation for AI & Traceability

From generative AI to regenerative agriculture tracking, every modern use case depends on clean, structured, contextual data. DMaaS integrates agronomic, operational, and external datasets into a continuously updated foundation.

Why it matters: 80% of AI value depends on data quality, not algorithms. Without structure, there is no scale. (McKinsey Global Institute)

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The DMaaS Decision Matrix

	Build Internally	DMaaS (License & Scale)
Time to Impact	12–18 months	< 6 weeks
Cost Model	Fixed + Headcount	OpEx, scalable
Talent Risk	High (recruit/retain)	Low (on-demand expertise)
Flexibility	Limited	High – adjusts as you grow
AI-Readiness	Requires internal rework	Delivered AI-ready

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Industry Review: Why Farmers Edge

35+
Validated Models
Built from ground-truthed agronomy—soil, seed, weather, and grower behavior combined with AI/ML expertise.

3B+
Data Points per Minute
Real-time ingestion from field devices, satellite imagery, lab results, and historical records.

50M+
Acres of Structured Data
North America's largest operational field-level agronomic dataset.

Enterprise-Grade Infrastructure & Innovation

Farmers Edge runs on a cloud-native architecture spanning **Azure, AWS, and GCP**—built for scale, security, and flexibility. A dedicated innovation lab powers continuous model development, leveraging **NVIDIA** for AI acceleration and **Databricks** for scalable pipelines and experimentation.

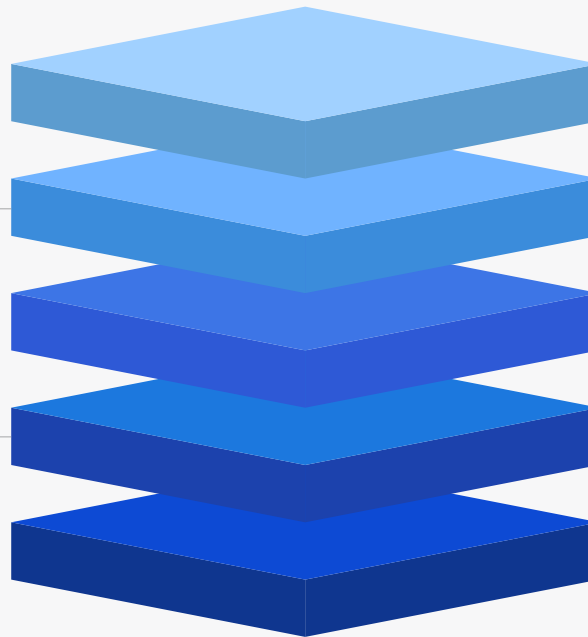*Maximize capital cloud spend and avoid infrastructure lock-in.*

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FarmersEdge™ Modeling Stack

Global Cloud Partnerships

Scalable, secure, enterprise-ready infrastructure.

Azure   aws   Google Cloud

Real-Time Data Engine

Ingests 3B+ data points/ min from in-field devices and remote sensing.

Innovation Lab & Modeling Pipeline

Ongoing model iteration using world-class tooling.

NVIDIA.   databricks

50M+ Acres of Field Data

Proprietary, structured, and usable at scale.

Agronomic Domain Expertise

Grounded in real-world agronomy—not generic modeling.

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You Don't Need to Build a Data Team—You Need Results

Turn Capital Data Investment into Defensible Growth

Most AgChem companies have already made significant digital investments. What's missing isn't tools—it's translation: turning raw data into actionable insight. DMaaS delivers that translation layer as a managed capability, not a headcount expense.

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DMaaS: One Partner. One System. Full Output.

Infrastructure
Real-time data ingestion and cloud-native architecture

Models
Custom-built, AI-powered models for agronomic, commercial, and ESG needs

Outcomes
Improved pricing, product positioning, and sustainability reporting—faster

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Ag Enterprises have already invested in the data.

Now it's time to invest in the outcome.

Farmers Edge works with enterprise leaders to translate data investments into measurable results. Through consulting and enterprise-grade technology services, we help ag enterprises move from insight to action—faster, smarter, and at scale.

- **Better insights**

- **Faster decisions**

- **Scalable performance**

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Meet with Farmers Edge to explore how DMaaS can deliver outcomes across your business.

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