FarmersEdge™

The Consulting Gap in AgTech:

Turning Data Chaos into Scalable Intelligence

TABLE OF CONTENTS

Executive Summary

Agribusinesses are racing toward AI adoption, but few are positioned to succeed. Across the value chain, core workflows still rely on spreadsheets, fragmented systems, and siloed teams.

This white paper outlines why scalable, AI-ready systems in agriculture require more than technology. They demand consulting expertise rooted in agronomy, data architecture, and enterprise execution.

Key Themes:

The persistent risks of Excel-driven operations

Why most AI investments underdeliver in agriculture

The missing link in AgTech transformation

Addressing the Real Problem: The Data is Still in Excel

Despite the pace of digital investment across agriculture, many core workflows remain trapped in Excel.

- Sustainability teams build carbon intensity (CI) scores by hand.
- Retail pricing models are maintained in one-off workbooks.
- Fertility recommendations are tied to static PDFs.

That's just the start of it. Disconnected files, inconsistent data entry, and team-specific templates prevent insights from flowing across the organization

Key Insight:

Ag doesn't lack data. It lacks structure. And without structure, AI is just another spreadsheet with better branding.

FarmersEdge™

The Future of Ag is AI.
But it Can't Run on Spreadsheets.

Common Symptoms of the Spreadsheet Trap

What looks like a tooling gap is often a deeper structural issue: a lack of centralized governance, interoperable architecture, and unified taxonomies.

- Fragmented Data
- Siloed teams
- Slow insights
- Audit failures
- Pilot fatigue

The AI Illusion: Why Models Stall Without Infrastructure

Most enterprise AI pilots never move beyond proof-of-concept. The issue isn't the technology—it's the data it relies on. Agriculture still operates with disconnected systems, unstructured field data, and a lack of consistent taxonomies across teams. Models can only be as good as the infrastructure beneath them.

Without structured, trusted, and interoperable data, even the most advanced algorithms underperform.

85%

of venture capital firms are prioritizing startups focused on data infrastructure rather than front-end AI tools

22.7%

CAGR - the Agri AI market is growing yet adoption remains limited by data quality and enterprise readiness

61%

of agribusinesses cite fragmented data as the primary barrier to deploying AI at scale

Before AI can deliver insights, your data must be interoperable and trusted

The issue isn't the technology—it's the data it relies on.

Data Infrastructure Pyramid

Raw Inputs	Structured Data	Model-Ready	Deployed Insights
Spreadsheets, PDFs, machine logs	Standardized soil, weather, and equipment data sets	Clean, labeled data pipelines for AI/ML	CI scoring, yield forecasts, and insights inside ERP systems
Ex: Trial data in Excel, PDFs from labs	Ex: LabCommand output, CAN plug telemetry feeds	Ex: Harmonized datasets feeding carbon or disease models	Ex: Sustainability dashboards, in-season recommendations

Why This Matters

Executives are investing in AI to accelerate insight, automate workflows, and create competitive advantage. But these gains depend entirely on what sits beneath the model. In agriculture, that foundation is often incomplete—or missing altogether.

Key Insight:

AI success is a data problem in disguise. Without the right infrastructure, even the best models will fail to scale.

The Ag Value Chain

One Industry, Many Data Problems

Agriculture's transformation isn't happening in one place—it's unfolding across a value chain with fragmented systems, siloed data, and varied levels of digital maturity. Every layer is collecting more data than ever, but few are turning it into actionable insight.

The promise of AI spans from seed development to sustainability scoring—but the execution gap persists without common infrastructure.

Data Infrastructure Across the Ag Value Chain

Stage	Common Pain	What AI Could Unlock
Pre-Production (e.g. seed, biologicals)	Trial results stored in PDFs; no linkage to environmental data	Faster R&D cycles; trait optimization by zone
Production (farm-level ops)	Telemetry is fragmented; field records live in Excel	Variable-rate fertility; predictive yield
Processing (retail, logistics, insurers)	Trials not linked to sales; ERP systems disconnected	ROI benchmarking; smarter inventory allocation
Distribution (CPGs, exporters)	Unverified Scope 3 data; multiple reporting systems	Scalable CI scoring; verified traceability
Retail & Consumer	No feedback loop from field to pricing; SKU-level data loss	Dynamic pricing; supply/ demand balancing

Key Insight:

Every segment collects data—but few use it to drive decisions. Without interoperability, even the best AI remains isolated.

Three Capabilities That Set FE Consulting Apart

Most enterprise agtech initiatives stall—not because of bad tools, but because of misaligned systems, fragmented data, and partners who lack the domain fluency to drive impact.

Farmers Edge Consulting is different. Our value isn't theoretical. **We've built systems that work, across over 50 million acres and two decades of operational delivery.**

The Farmers Edge Advantage Across the Stack

Domain Expertise	Structured Data Infrastructure	Scalable, Model-Driven Intelligence
20+ years in agronomy, VRT, and digital farming	50M+ structured acres, real-time telemetry, private labs & weather	35+ proprietary crop, pest, and sustainability models
Midstream & Upstream workflow experience	CAN plug telemetry, LabCommand®, FarmCommand®	Custom modeling aligned to enterprise outcomes
ESG, ERP, and in-field workflow integration	Integrated ingestion from field→lab→enterprise	Models deployed inside client systems—not just dashboards

Why This Matters

- **No learning curve.** We understand agronomic and enterprise logic—so our recommendations land clean.
- **Faster execution.** Structured data means faster onboarding, fewer delays, and models that work the first time.
- **True enterprise scale.** Our infrastructure is already in-market, already validated, and already adaptable to your workflows.

You don't need another tool. You need a partner who understands agriculture, data, and execution.

Deep Domain Expertise: Translating Agronomy into Enterprise Action

While many firms claim to understand agriculture, few can operationalize it across the complexity of enterprise systems. Farmers Edge was built around real-world agronomy: **managing in-field variability, optimizing nutrient placement, and tracking outcomes with precision.** This foundation translates into unique advisory depth across retail, sustainability, and risk.

Domain Highlights

20+ years

solving on-farm variability with data-backed recommendations

Purpose-built systems

(LabCommand, FarmCommand) for field-to-enterprise traceability

Operationalizing Agronomy at the Enterprise Level

Segment	What We Do	Example Outcome
Agronomy	Precision fertility plans, VRT, SOC lab validation	Measurable yield uplift; 4R-aligned compliance
Retail Ops	Trial analytics, pricing strategy, field ROI	Retailer ROI clarity; stronger program design
ESG & CI	CI scoring, Scope 3 modeling, audit support	Verified data for fuel premiums and GHG reporting

Insight:

Most advisors stop at recommendations. We link agronomy to **financial, sustainability, and operational impact**—backed by 20 years of on-farm execution.

Structuring the Chaos: Building Enterprise-Grade Data Infrastructure in Agriculture

Most agricultural enterprises operate without a coherent data infrastructure. Soil tests are returned in PDFs, equipment data streams lack normalization, and geospatial imagery is inconsistently labeled or indexed. This inconsistency prevents meaningful analytics, disrupts forecasting accuracy, and undermines system integration.

Structuring data for enterprise use requires more than ingestion. It requires validation, standardization, and alignment with business logic. Farmers Edge addresses this by integrating proprietary data sources with systems designed for real-time ingestion and operational interoperability.

Summary of Core Infrastructure Capabilities

Infrastructure Layer	Primary Function	Enterprise Benefit
LabCommand®	Ingests, validates, and standardizes lab data	Ensures field-level consistency for modeling
FarmCommand®	Centralized data platform and visualization	Enables real-time decision support across teams
Soil Labs (Canada, US)	Ground-truth calibration of soil and carbon data	Accelerates model accuracy and traceability
CAN Plug® Telemetry	Standardizes machine and sensor output at source	Reduces data loss, eliminates translation layers
Private Weather Network	High-resolution forecasting from 5,000+ stations	Supports localized models and risk assessments

These systems operate as an integrated architecture. The result is not just clean data, but structured datasets aligned to specific business outcomes—whether in agronomy, compliance, or supply chain reporting.

Since launching Managed Services, Farmers Edge has maintain partnerships with enterprise technology providers (including Microsoft, NVIDIA, AWS, Infosys, and Cognizant) to ensure compatibility with client environments and deployment needs.

Insight:

Data reliability is not a function of volume. It is a function of structure. Enterprise agriculture requires systems that turn fragmented inputs into usable infrastructure.

Scalable Modeling: From Structured Data to Repeatable Decisions

Ag enterprises often stop at data infrastructure, but without a modeling layer, insights remain fragmented and hard to scale. Farmers Edge has built the foundation to solve this gap.

Our Modeling Infrastructure

We've developed and deployed **35+ proprietary models** across 50M+ acres, designed for agronomic accuracy, operational fit, and business utility.

Category	Purpose	Example Output
Crop Growth	Predict and optimize yield	Zone-level yield forecasts
Pest & Disease	Anticipate agronomic risks	Regional risk maps, spray timing
Carbon Intensity	Measure field-level emissions	CI scores with audit trails
Custom Models	Align with client workflows	Financial risk scoring, input efficacy

What Sets Our Models Apart

- **Field-tested Accuracy**
  Models trained and validated with soil, weather, and sensor data.
- **Production-Ready**
  Used daily in FarmCommand®, LabCommand®, and SmartCarbon™.
- **Custom-Build Capability**
  We tailor new models for crop, geography, or commercial objective.

Why It Matters

Modeling is a core to our operating DNA. From our origins in VRT prescriptions to today's CI scoring pipelines, every decision system is grounded in reliable prediction logic. That foundation is now available to partners across the value chain.

Modeling is the execution layer—where structured data becomes strategic action.

Conclusion:
Consulting Is the Missing Layer in AgTech

Across agriculture, enterprises are investing heavily in AI tools, digital platforms, and sustainability programs. But for most, the outcomes remain elusive. Technology is deployed, yet systems don't talk. Data is collected, yet insights aren't repeatable.

Consulting is the missing layer that connects digital ambition with operational execution. In agriculture, that layer demands a different kind of partner. Farmers Edge is fluent in agronomy, grounded in data infrastructure, and capable of delivering solutions that work in complex, distributed systems.

Farmers Edge Consulting exists to fill that role. We bring the domain expertise, the data discipline, and the modeling engine required to activate AI strategies across the ag value chain—from CI scoring in upstream supply chains to VRT insights at the field level.

For B2B agribusinesses, internal teams are already stretched. External vendors stop at deployment. **Transformation requires a partner who can stay through impact**—and deliver on execution.

Let's Build the Foundation Together

Whether you're preparing for Scope 3 reporting, trying to unlock ROI from field trials, or validating your AI roadmap—start with the right structure.

- CI scoring infrastructure
- Trial-to-retail analytics flows
- AI readiness and data audit
- ERP and sustainability system integration

Partners@FarmersEdge.ca
FarmersEdge.ca