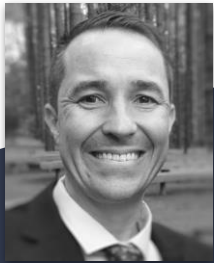


# Using AI to Streamline Management and Welfare in The Dairy Industry

An end to end view of AI and production.



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<https://tvanzyl.github.io>

Institute for Intelligent Systems



# The Challenges Facing the Dairy Industry

Optimise Production

Expand Dairy Market

Labor Shortages

Supply Chain Resilience

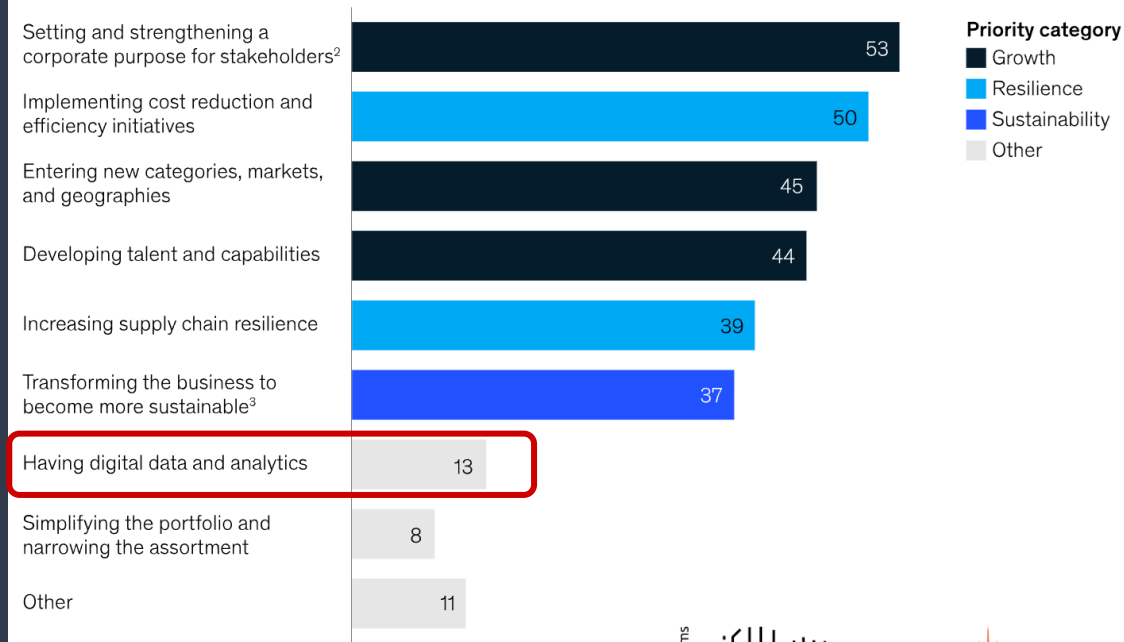
Environment, Sustainability and Governance

Animal Health and Welfare (ESG)

Threat of New Entrants

In their top three priorities, executives highlighted topics related to growth, resilience, and sustainability.

Top strategic priorities,<sup>1</sup> % of respondents (n = 100)



<sup>1</sup>Question: What are the top 3 strategic priorities for your company?

<sup>2</sup>Stakeholders include employees, consumers, customers, and communities.

<sup>3</sup>Including decarbonization, sustainable sourcing, and sustainable manufacturing.

Source: 2022 IDFA Member Survey

# How AI is Transforming Dairy

Precision breeding and herd management

Real-time monitoring of animal welfare

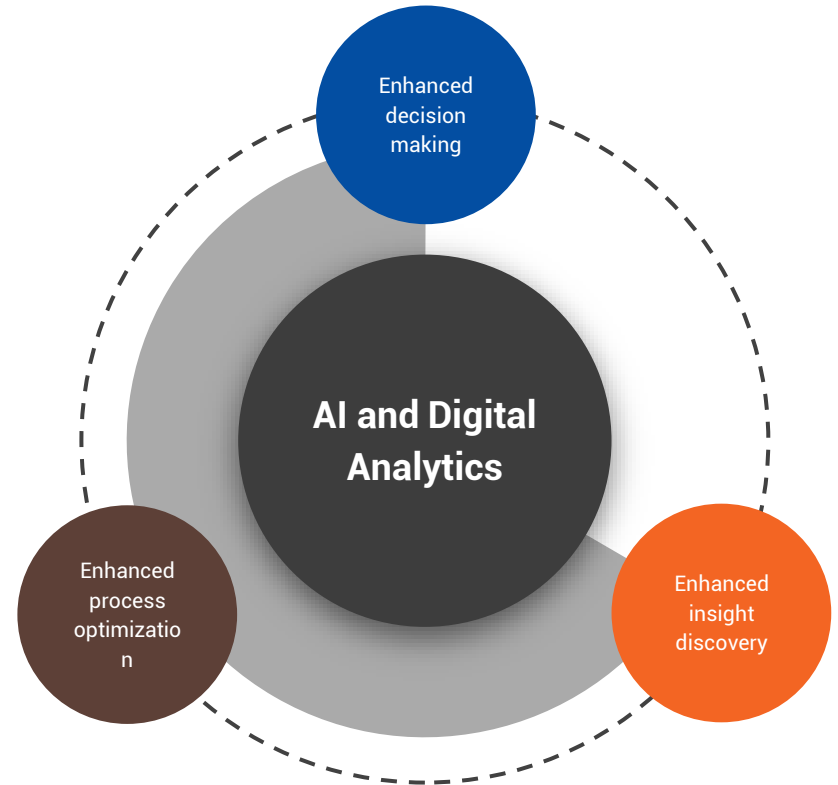
Optimized feed management

Manual task automation

Smarter supply chain management

Optimizing logistics and cold chain

Predictive maintenance



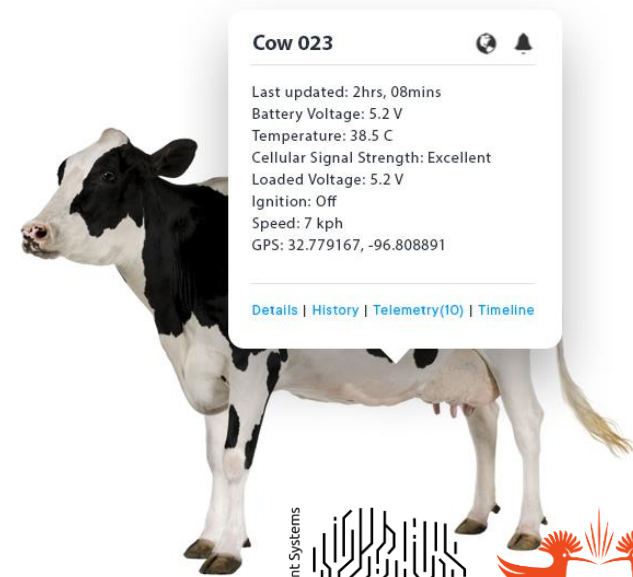
# AI-Powered Health Monitoring

Wearable sensors track comfort and well-being.

AI algorithms analyze sensor data to spot anomalies.

Early detection of diseases like mastitis or lameness.

Calving detection.



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# Optimizing Feed for Health & Production

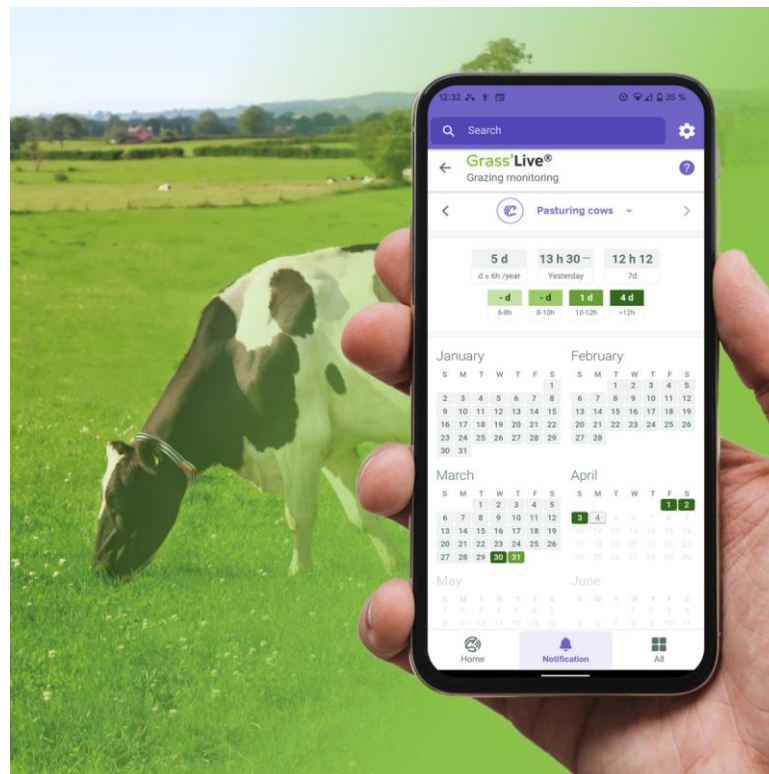
AI analyzes feed composition and intake patterns.

Recommends personalized feeding plans.

Reduces waste and ensures optimal nutrition.

Time estimation for group grazing.

Eating Disorder Detection.



# Creating a Smarter, More Resilient Supply Chain

Demand forecasting for accurate production planning.

Inventory optimization to reduce waste and stockouts.

Real-time supply chain visibility to track product movement.

Blockchain integration for enhanced traceability and transparency.



# Optimising Dairy Logistics with AI

Route optimization for efficient milk collection and product delivery.

Real-time tracking of perishable goods (milk, cheese, etc.).

Predictive analytics to manage inventory and anticipate demand fluctuations.

Enhanced cold chain management to ensure product quality and safety.



# AI and Predictive Maintenance in Dairy

AI analyses sensor data from machinery (milking systems, pasteurizers, refrigeration units).

Detects patterns indicating potential equipment failures.

Alerts technicians to schedule maintenance before breakdowns occur.

Minimizes unplanned downtime and costly repairs.

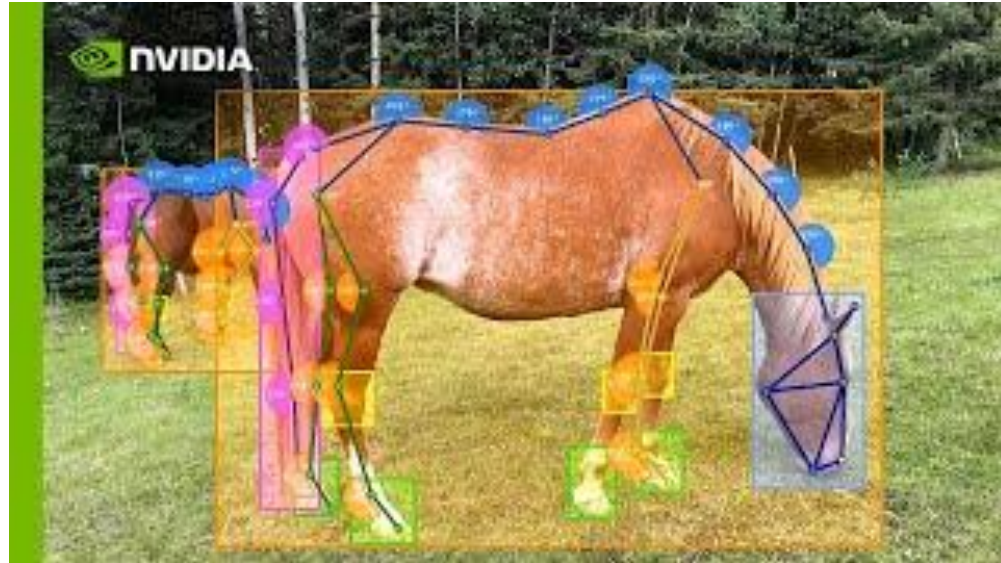




# The Future of Dairy is AI-Driven

Recap of key benefits of AI in dairy.

AI's role in sustainable farming and meeting consumer demands.



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Fin.