



The CFO's Guide to Financial Visibility in **Dairy Operations**

Connecting Herd Management Data with Financial Systems

Guide to better financial visibility by connecting operational data with finance and moving beyond legacy systems.

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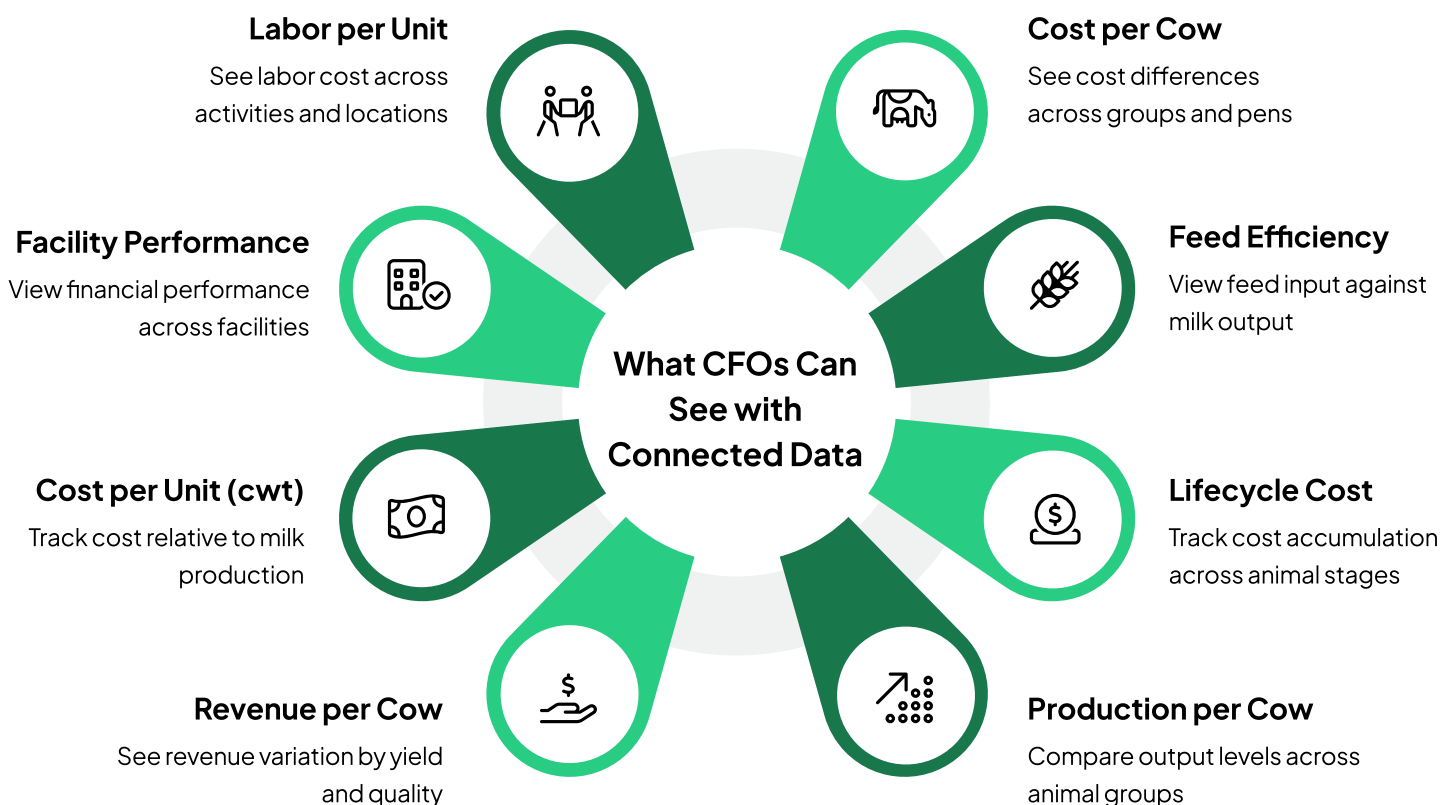
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Introduction

Financial reporting in most of the dairy operations provides visibility into results, but limited insight into what actually drives performance. Feed alone accounts for nearly 50 to 70 percent of total production cost, yet actual consumption and efficiency vary across groups and rations every day. Milk is produced continuously, but revenue is realized later, influenced by market pricing and quality components such as fat and protein. At the same time, costs accumulate across a long animal lifecycle, often over many months before revenue is generated, creating a disconnect between when costs are incurred and when value is realized.

Most financial systems are not built to reflect this level of operational detail. They capture transactions, but not the activities driving them. As a result, financial reporting relies on averages and delayed summaries, making it difficult to evaluate true cost per cow, measure feed efficiency, or compare performance across facilities. This white paper explores how connecting operational data with financial systems changes that visibility, allowing financial performance to be understood where it is actually created.



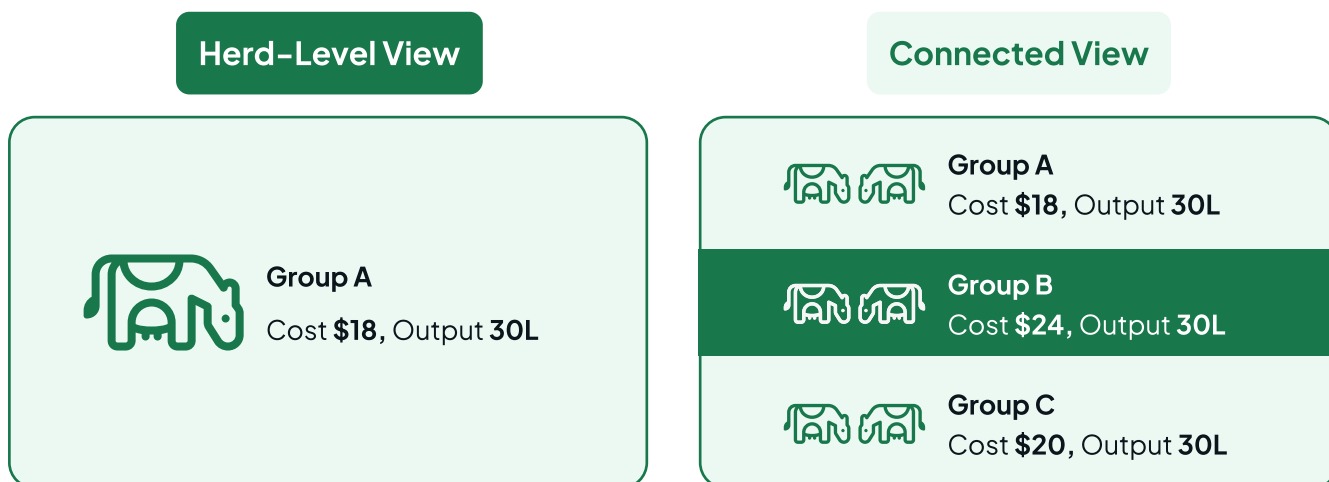
Key Considerations for Connecting Financial and Operational Data in Dairy Operations

When financial systems are effectively connected with the operational data of a dairy farm, a new set of measurable areas becomes visible. Cost and performance can be tracked across animals, feed, labor, and facilities with far greater clarity than traditional reporting allows. Instead of relying on averages, finance teams can view how inputs translate into output across different groups and stages. This makes it easier to understand where costs are building, how production is trending, and where variation is emerging.

The following considerations highlight the key areas that become measurable and the capabilities this level of visibility introduces.

Animal-Level Cost Tracking

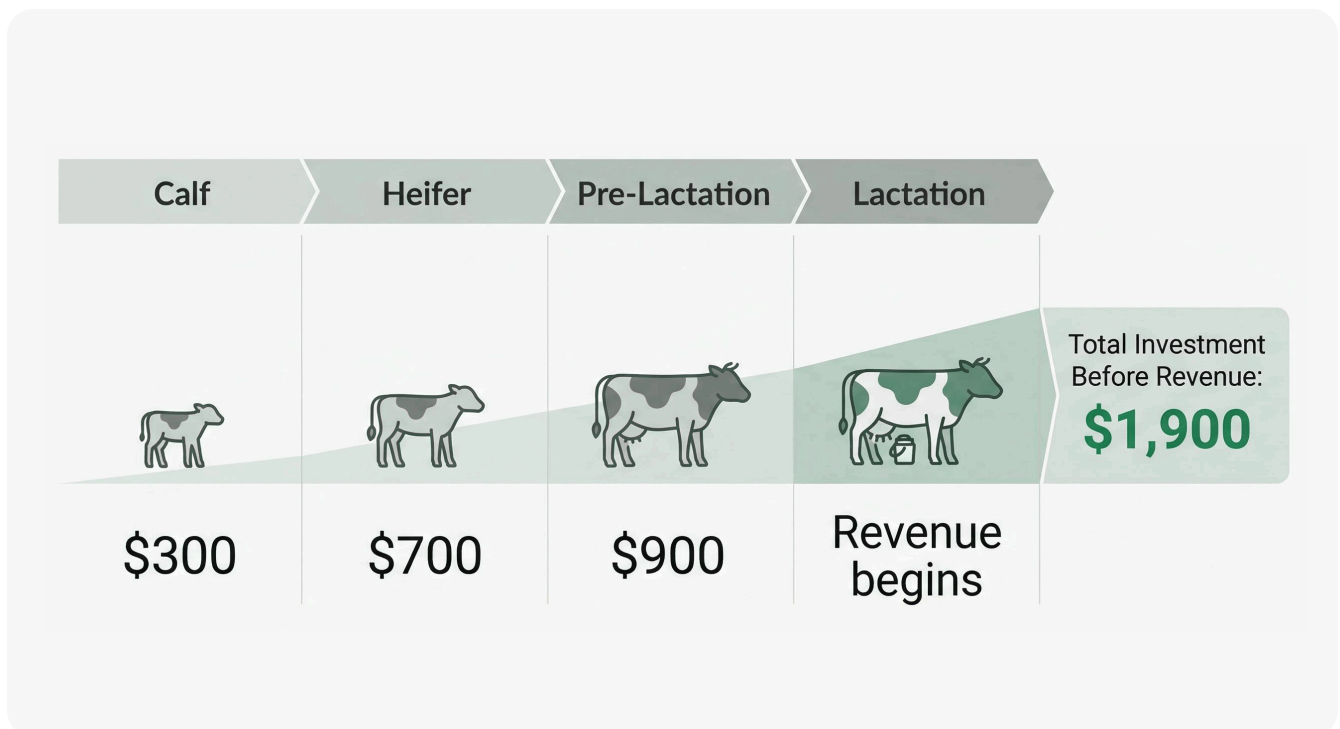
Most financial reporting in dairy operations relies on herd-level averages because operational data and cost data are captured in separate systems. When these are connected, feed intake, treatment events, and production records can be tied to the same animal or group and mapped to cost. This allows finance teams to view cost per cow alongside milk output and health activity. For example, a group with a stable yield but higher treatment frequency will show a higher cost per cow, making the source of variation clearly visible.



Same output. Different cost structure

Lifecycle-Based Cost Allocation

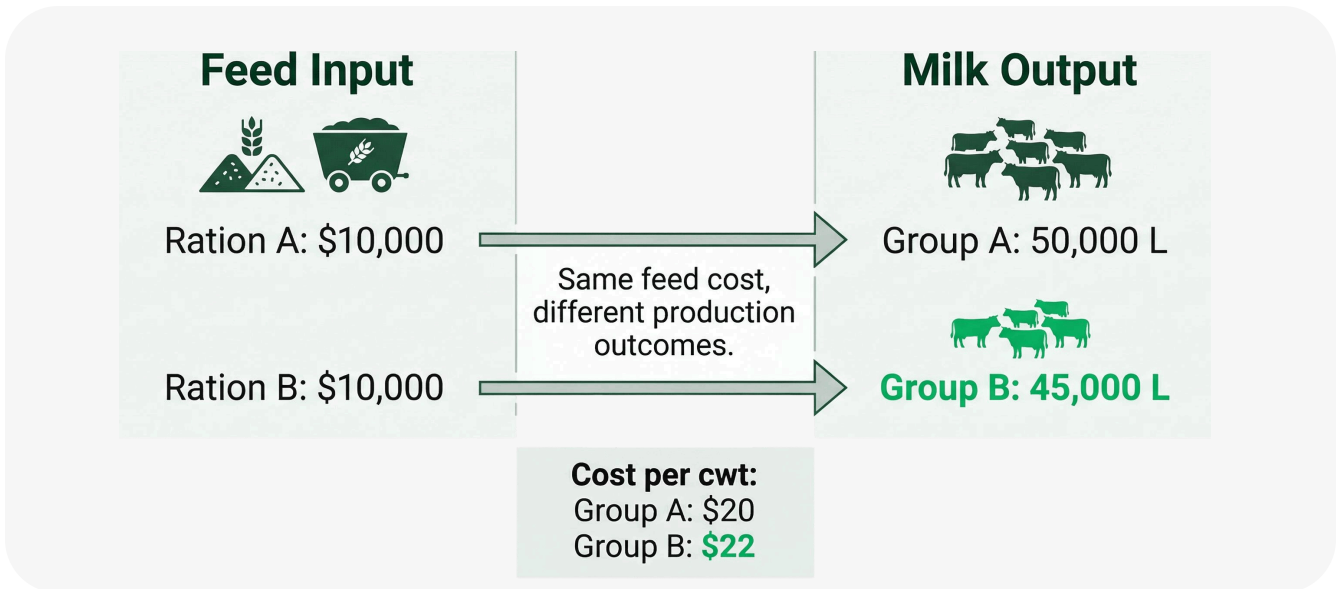
Costs in dairy operations accumulate across multiple stages, from calf and heifer development to lactation, but financial reporting rarely reflects this progression. When operational data, such as animal movement, stage classification, and time spent in each phase, is connected to financial systems, costs can be allocated across the full lifecycle. This allows finance teams to see how much is invested before revenue begins and how different stages contribute to the overall cost per productive animal.



Cost accumulates long before revenue begins

Feed System Integration

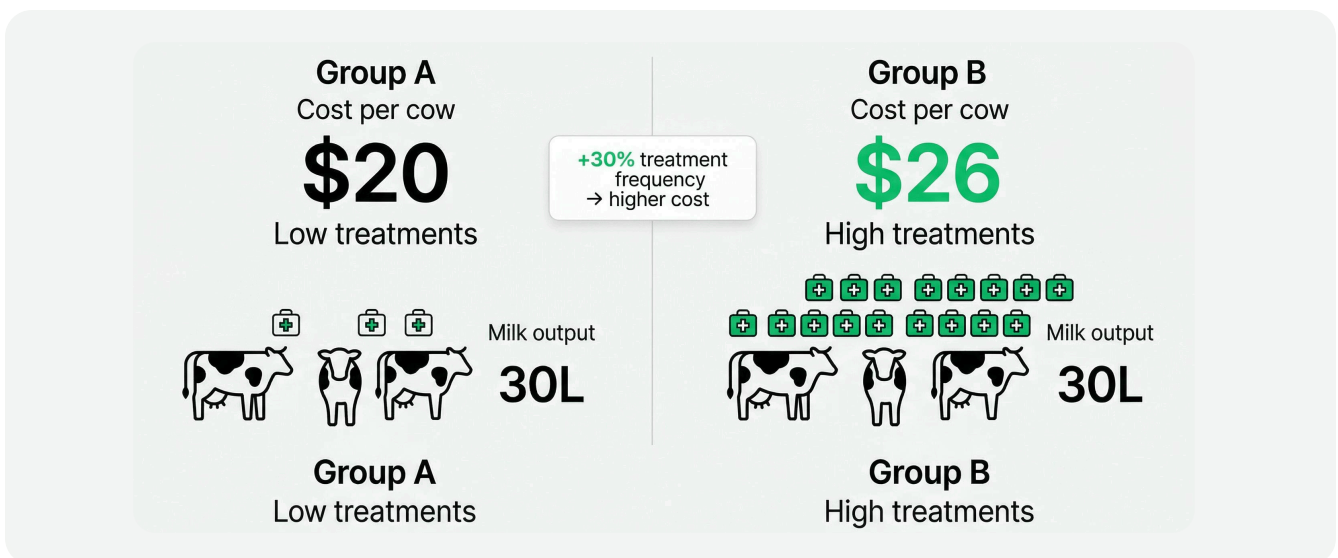
Feed is the highest and most variable cost in dairy operations, yet it is often tracked separately from financial systems. When feed systems are connected, ration formulation, consumption, and inventory usage can be linked directly to cost and production data. This allows finance teams to see how feed spend translates into milk output across groups. Variations between planned and actual consumption, or across different rations, become visible in financial terms rather than remaining operational assumptions.



Same input. Different output efficiency.

Health and Treatment Cost Recording

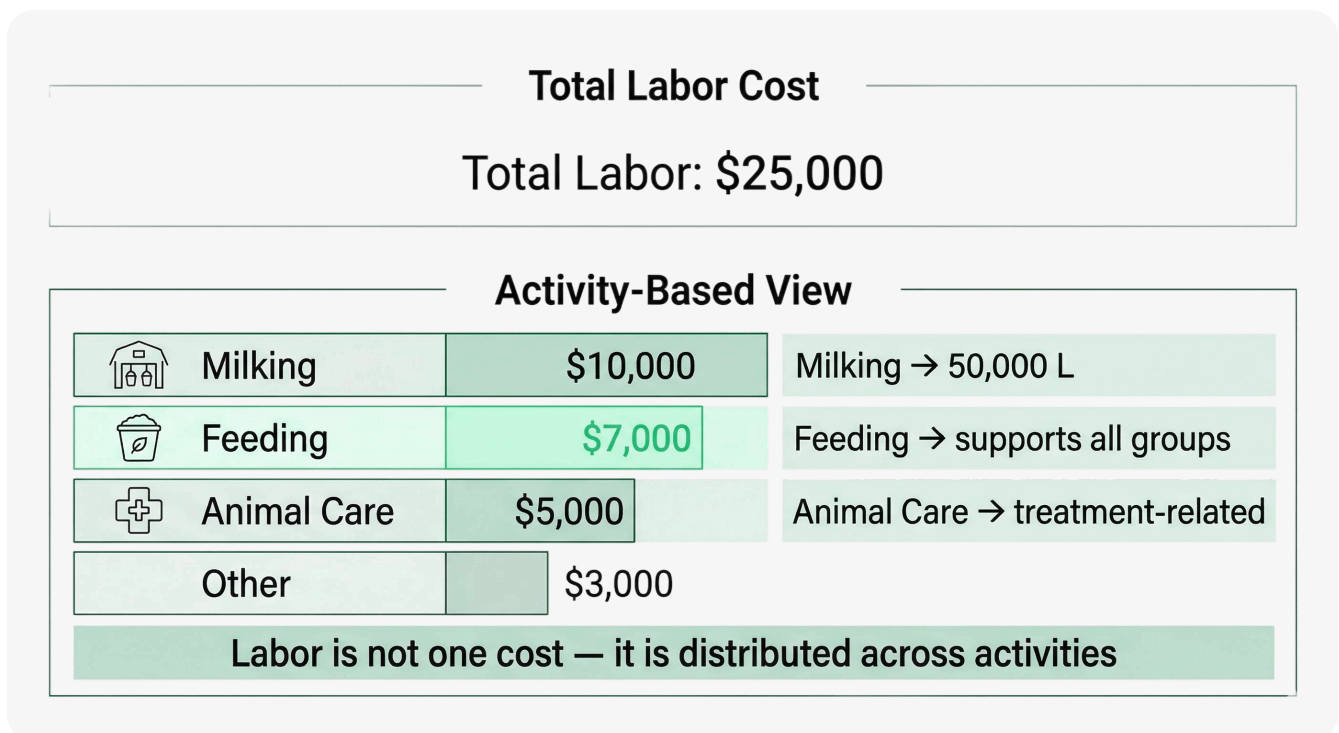
Health-related expenses are typically captured as aggregated veterinary or medication costs, limiting visibility into their financial impact. By linking treatments, withdrawal periods, and health events to specific animals or groups, these costs can be allocated at a more granular level. This enables finance teams to quantify how increased treatment frequency affects cost per cow, production loss, and overall margin, rather than treating it as a fixed overhead.



Health events increase cost without changing output.

Labor Activity Mapping

Labor is often recorded as a total expense, without clarity on how it contributes to production. When labor data is mapped to operational activities such as milking, feeding, and herd management, it becomes possible to calculate labor cost per unit of output and per facility. This allows finance teams to identify labor inefficiencies, compare cost structures across locations, and understand how labor contributes to overall cost per cwt.



Labor cost becomes measurable at activity level.

Multi-System Data Consistency

Accurate financial measurement depends on consistent alignment between operational and financial data. In dairy operations, herd, feed, and production systems often use different identifiers and structures, making it difficult to reconcile data. Establishing consistency across animal IDs, group definitions, and locations ensures that costs and outputs can be reliably linked. This is critical for accurate cost allocation, variance analysis, and facility-level profitability measurement.

Dairy Operational Complexities That Impact Financial Measurement

Financial measurement in dairy operations is shaped by the nature of how production actually occurs. Costs and output are continuous, spread across multiple stages, locations, and activities, rather than confined to defined production cycles. Animals move through different phases, resources are shared across groups, and production does not align neatly with accounting periods. These operational realities introduce complexity in how costs are accumulated, allocated, and interpreted, making it difficult to measure performance accurately using traditional financial structures.

Lifecycle-Driven Production Model

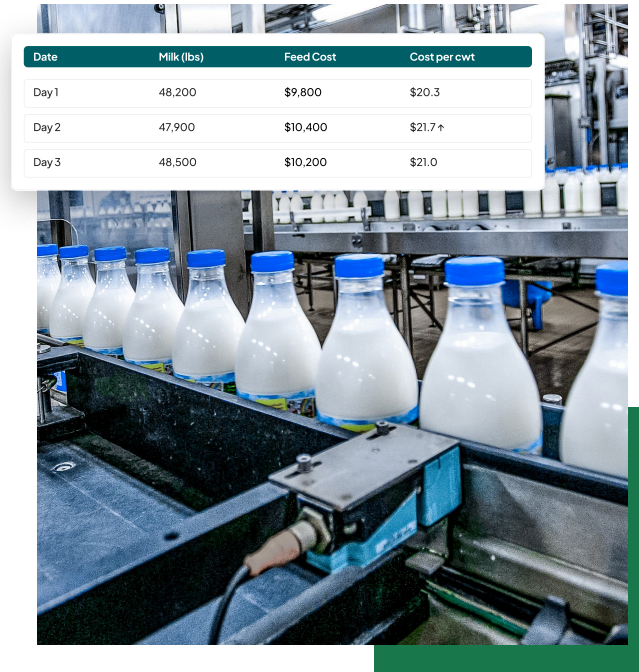
Dairy production requires capital to be deployed long before revenue is generated. The cost of raising replacements, often exceeding \$1,500–\$2,000 per heifer in industry benchmarks, is incurred over 18–24 months before first lactation. This creates a long payback cycle where profitability depends on how effectively these upfront costs convert into productive output. Without lifecycle alignment, these investments are treated as period expenses, obscuring return on animal-level capital.



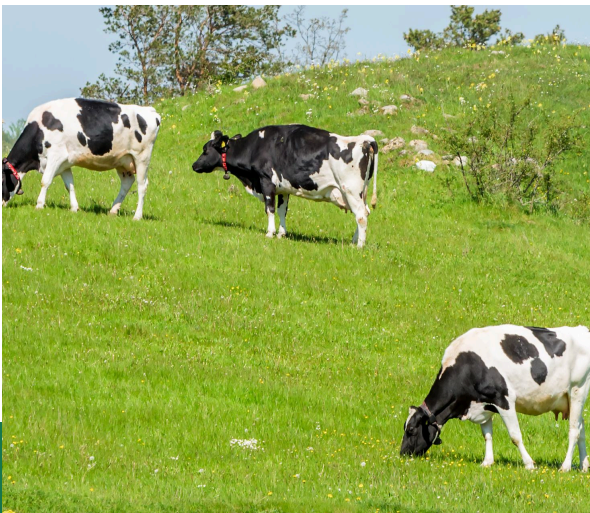
	Days	Cost / Animal
Calf	0 - 90	\$ 320
Weaning	90 - 300	\$ 540
Breeding	300 - 540	\$ 680
Pre-lactation		\$ 420
Total Investment		\$ 1960

Continuous Production Without Defined Batches

Milk production is continuous, but financial measurement is periodic. Costs such as feed and labor are incurred daily, while financial reporting aggregates them monthly. This disconnect forces reliance on averaged cost allocations rather than actual cost-to-output relationships. As a result, shifts in efficiency, such as a drop in feed conversion or yield, are diluted within reporting periods, limiting the ability to detect margin erosion as it occurs.



Frequent Animal Movement Across Stages and Locations

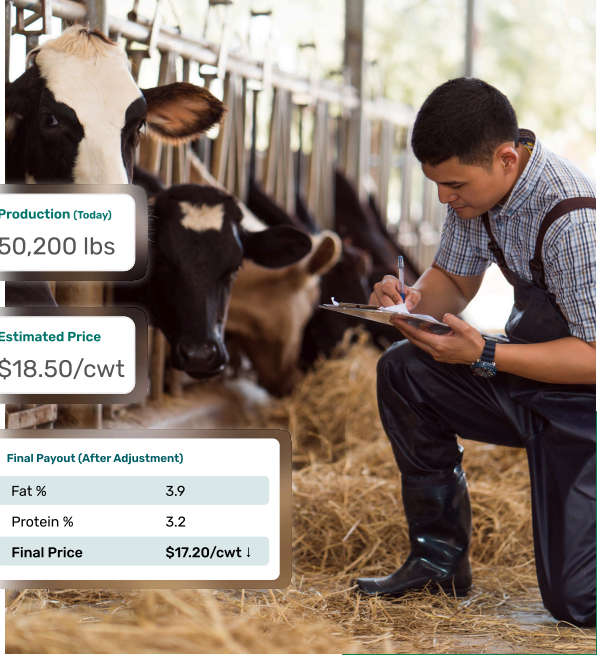


Each movement of an animal changes its cost profile. A cow transitioning from a dry pen to a lactating group shifts from maintenance cost to revenue-generating production, with different feed, labor, and health inputs. When these movements are not financially tracked, costs remain tied to locations rather than production stages. This prevents accurate attribution of cost to output and limits the ability to evaluate performance across lifecycle segments.

Animal ID	Stage Change	Before: Cost/day	After: Cost/day	Milk Output
4582	Dry → Lactating	\$3.20	\$6.80	78 lbs/day

Separation Between Production Timing and Revenue Realization

Milk revenue is not realized at the point of production but is determined later based on pricing formulas tied to fat, protein, and market conditions. This introduces a lag between when costs are incurred and when revenue is finalized. During periods of price volatility, this delay can significantly impact margin visibility, as current production costs are evaluated against outdated or estimated revenue assumptions.



Production (Today)
50,200 lbs

Estimated Price
\$18.50/cwt

Final Payout (After Adjustment)

Fat %	3.9
Protein %	3.2
Final Price	\$17.20/cwt ↓

Distributed Operations Across Facilities



Facility	Milk (lbs)	Cost/cwt
Zonn1	52,000	\$19.8
OakGrove	51,500	\$22.4 ↑
RiverOaks	50,900	\$20.1

In multi-site dairy operations, cost structures vary across facilities due to differences in feed sourcing, labor efficiency, and herd performance. Industry data shows meaningful variation in cost per cwt across farms, even within similar production systems. When financial reporting aggregates these operations, it masks location-level inefficiencies, limiting the ability to allocate resources effectively or benchmark performance across sites.

High Frequency of Operational Events

Dairy operations generate thousands of daily events, from feeding and milking to treatments and monitoring, each contributing incrementally to cost and output. However, financial systems capture only the resulting transactions, not the underlying activity. This means cost drivers such as feed variability or increased treatment frequency are only visible after they impact financial results, reducing the ability to trace and respond to emerging inefficiencies.



Why Current Financial Systems Fall Short

Financial systems used in most dairy operations are designed for transaction recording and compliance, not for capturing how performance is generated on the farm. Tools like QuickBooks and similar platforms organize data around accounts and reporting periods, but lack the structure to align costs with production activity. As a result, financial visibility is limited to what was spent and earned, not how those outcomes were created. The following gaps highlight where these systems fall short in supporting accurate and actionable financial measurement.

Separation of Cost Recording and Production Data

In most dairy operations, financial systems such as QuickBooks or similar accounting platforms capture costs at the point of transaction, feed purchases, payroll, and veterinary bills, but without linking them to the operational context in which those costs are incurred. Feed is recorded as an expense, but not tied to which group consumed it or how it translated into milk output.

This separation prevents cost attribution at the level where performance is generated. Without linking cost to production events, finance teams cannot evaluate metrics such as cost per cow or cost per cwt in a way that reflects actual operational conditions, limiting the accuracy of profitability analysis.

Aggregation of Financial Data

Financial reporting in legacy systems is structured around monthly close cycles, producing summaries at the herd or facility level. While useful for compliance and reporting, this aggregation masks variation within the operation. Differences in performance across pens, groups, or lifecycle stages are absorbed into a single average.

For example, a subset of low-performing cows or higher-cost groups may not materially impact total revenue but can significantly affect margins. Without disaggregated visibility, these inefficiencies remain undetected, making it difficult to understand where cost pressures are originating within the operation.

Disconnected Operational Systems

Dairy operations typically rely on multiple independent systems, herd management software, feed management tools, milk recording systems, and spreadsheets, each capturing a different aspect of operations. These systems are rarely integrated with financial platforms, resulting in fragmented data environments.

As a result, key datasets such as feed consumption, milk yield, and health events exist in isolation. Finance teams must rely on manual reconciliation or assumptions to connect these data points, increasing the risk of inconsistency and limiting the ability to produce a unified view of cost and performance.

Delayed Data Availability

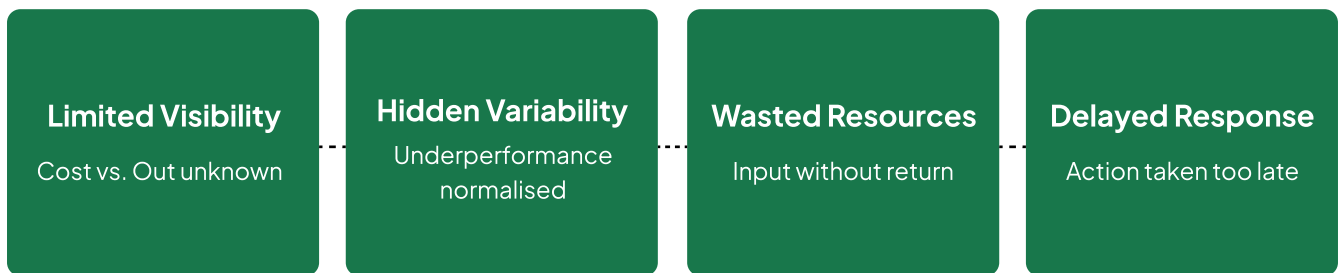
Operational data in dairy is generated continuously, but financial visibility is delayed due to reporting cycles and data dependencies. Milk production data may be available daily, but revenue is finalized later based on pricing and quality adjustments. Similarly, cost data is often recognized only after invoices are processed and periods are closed.

This lag creates a timing gap between operational activity and financial insight. By the time variances appear in financial reports, the underlying drivers, such as feed inefficiency or health issues, may have already impacted performance, reducing the ability to respond proactively.



Consequences of Disconnected Operational and Financial Data

When financial and operational systems operate independently, the gap between them is not just an inconvenience; it has measurable consequences for how a dairy operation is managed and how margins are protected. The four consequences below compound each other: limited visibility leads to hidden variability, which enables resource waste, which goes uncorrected because the financial response arrives too late.



Limited Visibility into Production Economics

The core problem is that cost and output exist in different systems, so their relationship is rarely measured directly. Feed spend is recorded, milk revenue is recorded, but the efficiency between them, how much it costs to produce a hundredweight, is often calculated manually or not at all.

Without this connection, finance teams cannot clearly evaluate whether production is becoming more efficient or more expensive, or identify which groups are contributing to margin versus consuming it.

What Finance Teams Cannot See?

- Which groups are generating margin and which are consuming it?
- Whether a period of higher spending reflects poor efficiency or higher output.
- How is the cost per cwt trending relative to production volume?
- Whether investments in feed quality are translating into measurable output gains.

Undetected Operational Variability

Even when averages appear stable, significant variation can exist beneath the surface. A high-performing group can offset a consistently underperforming one within the same herd, making overall results look acceptable. Differences in feed efficiency, health status, or stage of production often remain hidden within aggregated reporting.

The issue is not just inefficiency, but invisibility. Because the variation does not appear in financial reporting, it is not acted upon, allowing poor performance to continue and gradually become part of the baseline cost structure.

Herd-Level Average (what the report shows)

Average cost per cow: \$20 | Average milk output: 30L | Margin: within target
No variance flagged. No action triggered.

Connected View (what the data actually shows)

Group	Cost / Cow	Variance vs. Average
Group A	\$18	-\$2 (below average)
Group B 🚨	\$24	-\$4 (above average)
Group C	\$20	-(at average)
Group D	\$19	-\$1 (below average)

Inefficient Resource Allocation

Without clear visibility into which animals, groups, or facilities generate the strongest return, resources tend to be distributed uniformly. Feed rations remain consistent across groups, labor is scheduled without linking effort to output, and capital is deployed based on routine rather than measurable return.

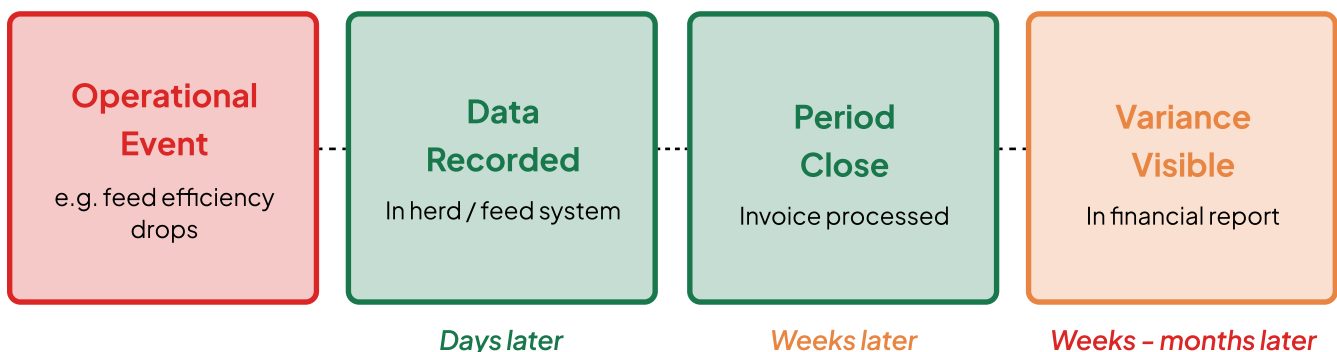
The result is not obvious waste, but suboptimal allocation. Inputs are applied without a clear understanding of their impact on production, leading to a higher overall cost base and reduced margin potential that is difficult to attribute to specific operational decisions.

Delayed Financial Response

By the time a variance appears in a monthly report, it reflects activity that occurred weeks earlier. A drop in feed efficiency, an increase in treatment frequency, or a decline in milk quality has already been absorbed into the numbers and influenced financial outcomes.

Financial reporting becomes retrospective, showing what has already happened rather than enabling a timely response. This delay limits the ability to intervene early, turning financial data into a record of past performance instead of a tool for managing ongoing operations.

FROM EVENT TO VISIBILITY - THE REPORTING LAG



An operational events that occurs on Day 1 may not appear in a financial report until weeks or months later, after the margin impact has already been realised.

A Practical Model for Integrating Financial & Operational Systems in Dairy Operations





Connecting financial and operational data is not simply a system integration exercise. It is a shift in how financial performance is measured, moving from transaction-based reporting to understanding how cost and output are generated across the operation. In most dairy businesses, the underlying data already exists, but it is fragmented across systems and captured at different levels of detail.

A practical model focuses on aligning these data sources, structuring operational activity into measurable units, and linking them to financial outcomes. This creates a

consistent foundation where cost, production, and performance can be evaluated together.

Operational Data Sources

Integration begins with understanding what each operational system generates and what it contributes to financial measurement. Four primary data sources exist in most dairy operations, each capturing a different dimension of activity, and each containing cost or output information that financial systems currently cannot access.

 Herd Management <ul style="list-style-type: none">• Animal IDs, lifecycle stage, group movements• Health events, treatments, withdrawal periods• Breeding records, calving dates, culling data	 Feed Systems <ul style="list-style-type: none">• Ration formulation by group and stage• Daily consumption vs. planned intake• Inventory usage and feed cost per batch
 Milk Production <ul style="list-style-type: none">• Parlor meter readings per cow per milking• Bulk tank volumes and shipment records• Component data: fat, protein, SCC per pickup	 Manual Logs <ul style="list-style-type: none">• Feeding observations and ration adjustments• Treatment records not captured digitally• Movement notes and pen assignment changes

Financial implication

Without bringing different cost drivers together, finance can only see total spend, not how that spend translates into output or performance!

Event Standardization





Raw data alone does not create financial visibility. It must be structured into consistent operational events that can be measured and compared.

Key events such as feeding, milking, treatment, and movement represent the points where cost is incurred or output is generated. However, these events are often recorded differently across systems, or not recorded at all in a structured format.

Standardization requires

- Consistent identifiers (animal, group, facility)
- Uniform definitions of activities
- Time-based tracking of when events occur

FROM RAW RECORD TO FINANCIAL ENTRY — FOUR EVENT TYPES

Event Type	Standardised Record	Financial Mapping
 Feeding Event	Event: feeding Animal group: Pen 3 Ration: TMR-A Qty: 420 kg Time: 08:30	Feed cost allocated to Pen 3 / \$ per kg consumed
 Milking Event	Event: milking Animal ID: 1042 Volume: 28.4 L Fat: 3.8% Shift: AM	Revenue mapped to cow output; quality premiums or penalties applied
 Treatment Event	Event: treatment Animal IDs: 847, 902, 1103 Drug: X Withdrawal: 7d Cost: \$84	Health cost posted to animals 847, 902, 1103; production loss tracked
 Movement Event	Event: movement Animal IDs: [batch] From: Heifer pen To: Lactating group A Date	Cost profile shifted from development stage to lactation; lifecycle allocation updated

An operational events that occurs on Day 1 may not appear in a financial report until weeks or months later, after the margin impact has already been realised.

Financial implication

Without a consistent event structure, cost allocation becomes arbitrary. For example, feed cost cannot be accurately assigned if consumption is not tied to a defined group at a specific point in time. Standardization is what enables traceability from cost to activity.

Financial Mapping

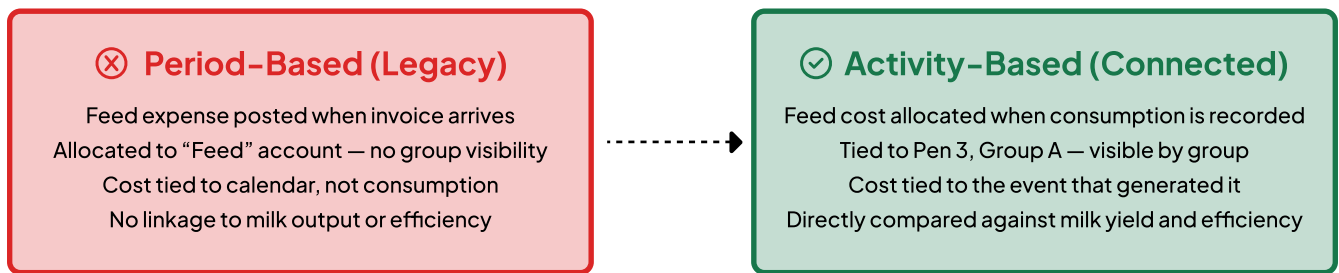
Once operational events are standardized, they can be translated into financial terms. This is where integration moves from data alignment to financial measurement.

Each operational activity becomes a cost or output driver:

- feed events → cost allocation by group or cow
- treatment events → health cost linked to production impact
- milking events → output tied to revenue and quality

This shifts the financial model from:

- **period-based accounting** (what was spent this month)
- to
- **activity-based measurement** (what it cost to produce this output)



Connected View (what the data actually shows)

Operational Event	Financial Entry Type	Allocated To	Metric Unlocked
Feed Event	Feed cost	By group / pen	Cost per cwt, feed efficiency ratio
Treatment Event	Veterinary / drug cost	By animal or group	Health cost per cow, cost vs. production loss
Milking Event	Milk revenue	By cow, by component	Revenue per cow, quality premium tracking
Movement Event	Stage cost reallocation	By lifecycle phase	Development cost, ROI on replacement animals
Labor Log	Labor expense	By activity / facility	Labor per cwt, labor efficiency by shift

Each operational event type has a direct financial equivalent, the mapping table defines the translation layer between the farm and the ledger.

Analytical Reporting

With data aligned and mapped, reporting moves from aggregated summaries to operationally grounded financial insight.

Finance teams can now evaluate:

- cost per cow, pen, and facility
- cost per cwt based on actual input-output relationships
- feed efficiency (IOFC) across groups
- health cost relative to production performance
- profitability across lifecycle stages and locations

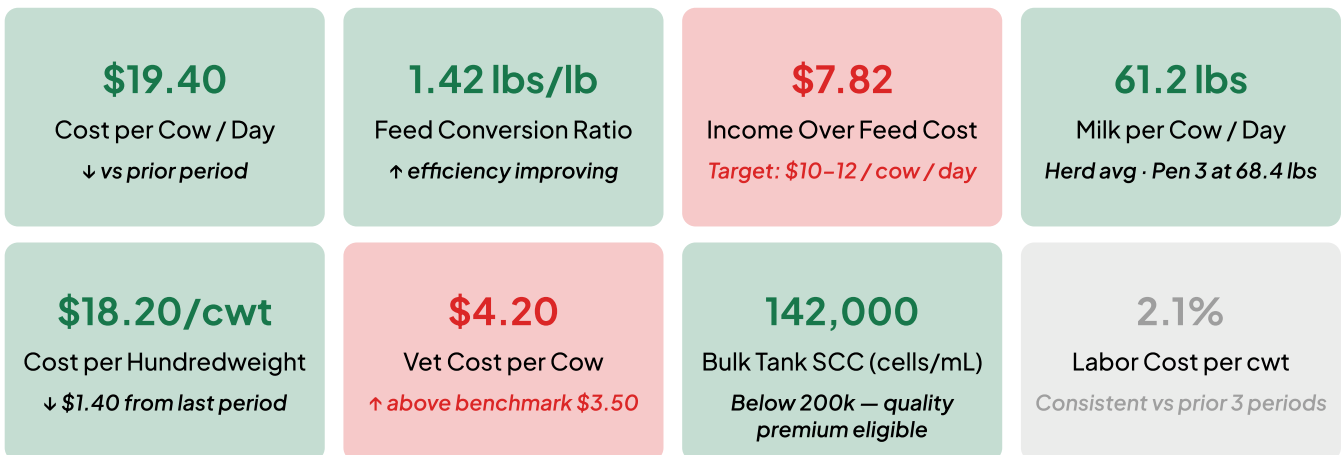
Example Insight

Two facilities producing similar milk volumes may show different cost per cwt due to variation in feed efficiency or treatment frequency. This difference, often hidden in aggregated reporting, becomes measurable and actionable.

Financial implication

Performance is no longer assessed at a single level. It can be broken down by where and how it is generated, enabling more accurate variance analysis and clearer identification of margin drivers.

INTEGRATED DAIRY KPI DASHBOARD — ILLUSTRATIVE VIEW



Illustrative KPI tiles — representative of what Power BI or similar analytics tools display when connected to integrated herd and financial data. Red tiles flag metrics below benchmark; green confirms target performance.

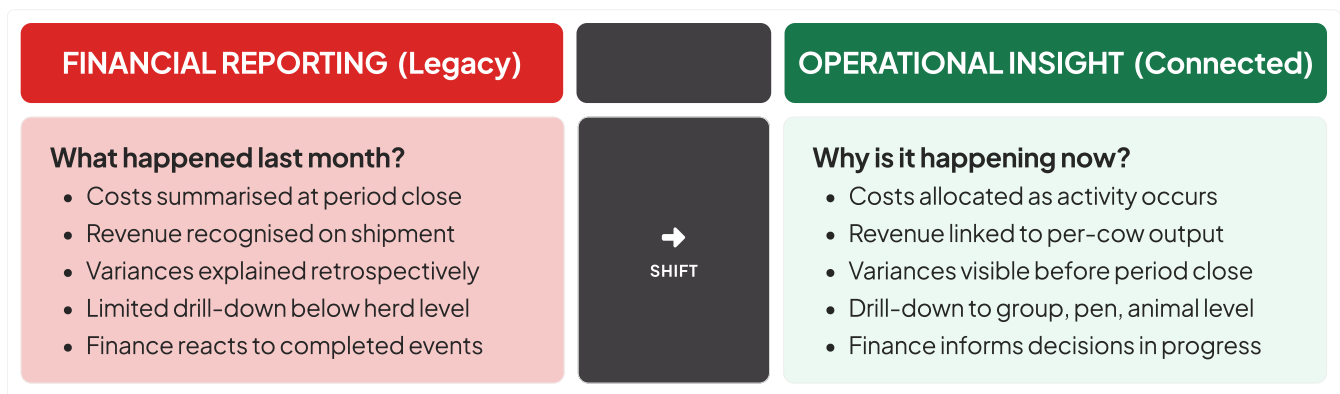
Implications for Financial Leadership in Dairy Operations

Connecting operational and financial data does not simply change what a CFO can see. It changes what the role of financial leadership requires. When cost and performance data become available at the activity level, in near real time, across animals, groups, and facilities, the finance function must operate differently to use it effectively. This section outlines four shifts that define what financial leadership looks like in a connected dairy operation.

Shift from Financial Reporting to Operational Insight

Financial reporting in dairy has traditionally focused on summarizing results after they occur. With connected data, the focus shifts to understanding the drivers behind those results. Instead of reviewing total feed spend or overall production, finance can see how feed efficiency, animal performance, and lifecycle stages shape cost and output. This changes the nature of financial analysis from explaining variances to interpreting how operational decisions are influencing performance as it develops.

THE ROLE SHIFT — BEFORE AND AFTER INTEGRATION



The shift is not from less work to more work — it is from explaining the past to informing the future.

The CFO as Operational Partner

In a connected operation, the CFO is not waiting for the period to close to understand performance. Cost-per-cow, IOFC, and feed efficiency are available continuously, which means financial judgment can enter operational conversations before decisions are made, not after.

This is not a technical upgrade. It is a change in how the finance function participates in running the operation.

Alignment Between Finance and Operations

When cost and production are measured together, finance and operations begin to work from the same view of performance. Decisions around feeding, herd management, or production are no longer purely operational; they carry clear financial implications. This creates a more integrated way of working, where finance contributes to operational discussions with data that links activity to cost and output, rather than reviewing results after the fact.

WHO OWNS WHAT — RESPONSIBILITIES ACROSS TEAMS

⊗ Operations Team

- Records events accurately and consistently
- Maintains animal IDs and group codes
- Flags anomalies (treatments, yield drops)
- Reviews pen-level performance data

⊗ Finance Team

- Owns the financial mapping definitions
- Reviews cost allocation rules by event type
- Reconciles integrated reports to GL
- Produces lifecycle and facility P&L

⊗ Shared Responsibility

- Master identifier consistency (IDs, groups)
- Agreeing on cost allocation methodology
- Reviewing KPI dashboards together monthly
- Resolving data discrepancies at the source
- Approving changes to ration or group structure that affect cost allocation

Integration does not eliminate team boundaries — it creates a shared data layer that makes each team's contribution visible to the other.

A Practical Example of Alignment

A nutritionist increases protein in the TMR for Pen 2 to improve component quality.

In a legacy model: feed cost rises, the change appears in the feed expense account at month end, and the connection to milk revenue is never formally measured.

In a connected model: the ration change is recorded as a feeding event, the incremental cost is allocated to Pen 2, and the Power BI dashboard shows IOFC and component quality for that group in the following days, confirming or challenging whether the change was worth it.

Ownership of Data Integrity

As data from multiple systems is brought together, the reliability of financial insight depends on how consistently that data is defined and aligned. Differences in how animals, groups, or locations are recorded across systems can lead to misallocation of cost and inconsistent reporting. This elevates the role of finance from using data to ensuring its structure supports accurate measurement, making data consistency a core part of financial control.

✘ DATA INTEGRITY CHECKLIST — Finance Team Responsibilities

- ✓ **Animal & Group IDs:** Confirm that animal identifiers are consistent across herd management, feed, and financial systems. One ID — everywhere.
- ✓ **Cost Allocation Rules:** A document that maps operational events to which GL accounts, and review quarterly as rations, groups, or facilities change.
- ✓ **Reconciliation Cadence:** Establish a weekly or bi-weekly check between operational event counts and financial entries to catch gaps before period close.
- ✓ **Manual Record Standards:** Define a minimum data structure for manual logs (pen ID, date, activity, quantity) so they can be imported without reinterpretation.
- ✓ **Change Management:** Any change to group structure, facility coding, or ration naming that affects cost allocation must go through a finance sign-off step.

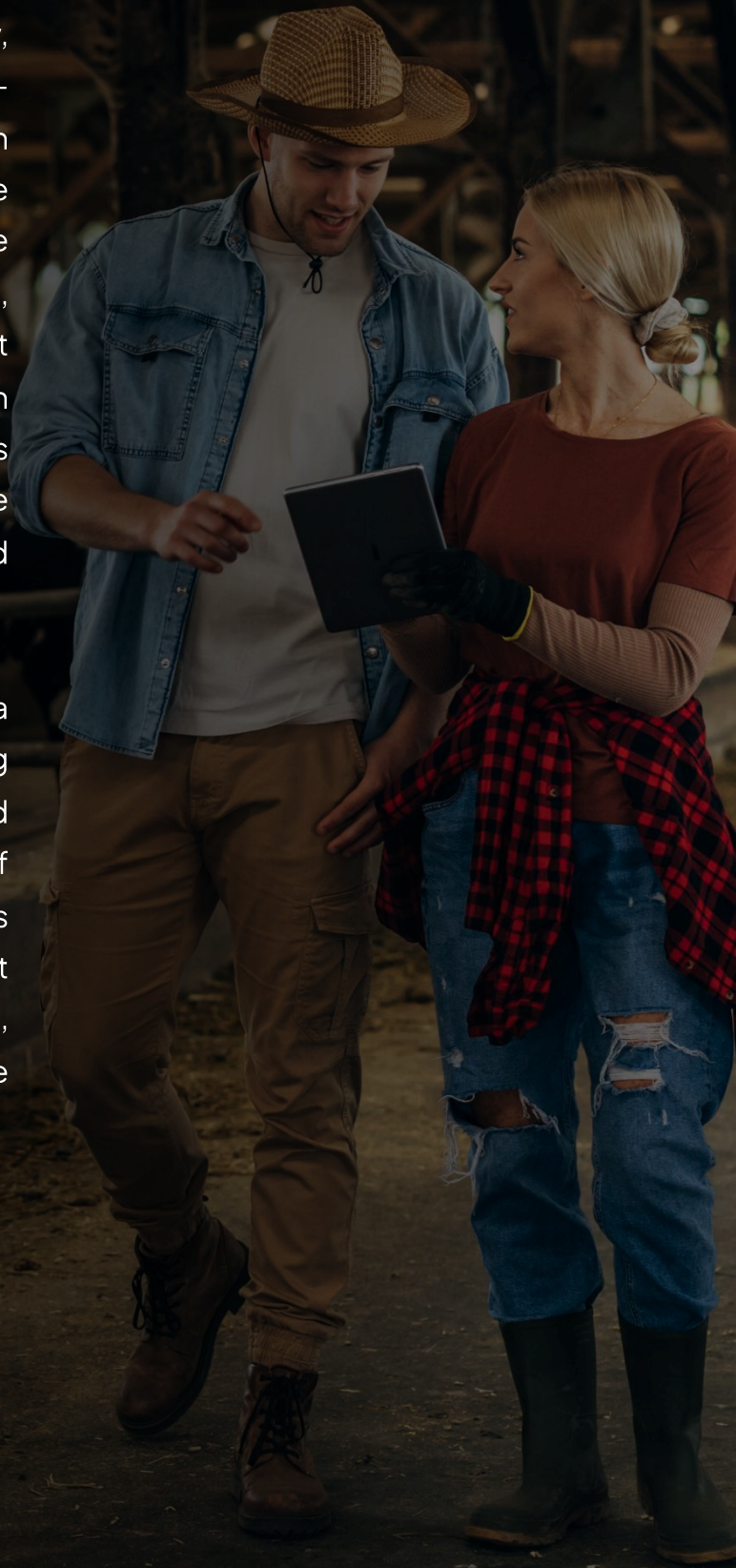
Enabling Timely Decision-Making

When financial visibility is tied to operational activity, the timing of insight changes. Instead of waiting for monthly reports, finance can observe shifts in cost and performance as they occur. Changes in feed efficiency, production levels, or health events become visible earlier, allowing responses before they fully impact financial results. This moves financial management from retrospective analysis toward ongoing awareness of how performance is evolving.

Conclusion

Financial visibility in dairy operations is not a reporting problem; it is a data architecture problem. The tools to measure cost per cow, feed efficiency, lifecycle return, and facility-level margin already exist. What has been missing is the connection between where performance is generated, on the farm, at the pen level, across thousands of daily events, and where it is recorded. When that connection is made, the finance function gains something it has rarely had in this industry: the ability to see not just what the numbers are, but where they came from and what is driving them.

The model described in this paper is not a future-state aspiration. Dairies integrating platforms like Cattlytics with QuickBooks and Power BI are already producing this level of visibility today. The investment required is less in technology than in discipline, consistent identifiers, mapped events, aligned teams, and a finance function willing to operate closer to the operation it serves.



About Folio3 AgTech

Folio3 AgTech is a trusted technology partner to the global agriculture industry, with over two decades of experience delivering custom ERP, compliance, and farm management solutions. We specialize in bridging the gap between agricultural operations and enterprise systems, helping businesses manage complexity, improve visibility, and scale with confidence.

With more than 310 successful ERP customizations across Microsoft Dynamics 365 and Oracle NetSuite, our team understands both the architecture and the field realities. From cow-calf management to crop traceability, we've helped ag businesses in North America, Australia, and beyond modernize how they work, without disrupting what already works. At Folio3 AgTech, our goal is simple: build software that gets out of the way, solves the right problems, and helps agriculture move forward



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