onix®

The intelligent blueprint for transforming legacy warehouses into AI engines

Bridge the AI gap and accelerate your transformation journey 2-3x faster with the Wingspan agentic platform

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Introduction:
Is your data ready for AI?

Enterprises do not struggle with moving data. They struggle with moving logic, dependencies, lineage, and trust.

Quick facts:

- 97% of organizations say AI is urgent, yet 92% are unprepared due to fragmented, siloed data. (Source)
- Up to 30% of cloud spending was wasted in 2025. This is equivalent to a waste of $217 billion. (Source)
- 60% of traditional cloud migrations underperform or need to be reversed. Without post-migration optimization, companies cannot manage expenses nor monitor performance. (Source)

Most legacy data warehouses were never designed for AI, real-time analytics, or elastic compute. They were built for structured reporting, batch processing, and historical analysis. Over decades, scripts layered on scripts. Pipelines layered on pipelines. Custom transformations accumulated. Institutional knowledge replaced documentation.

These systems were optimized for "Stability" — not adaptability.
For "Reporting" — not reasoning.
For "Storage" — not intelligence.

This is why a large percentage of migrations either stall, exceed budgets, or require rollback. Modern warehouse migration is no longer just a technical relocation exercise. It is a **systemic modernization effort** that must preserve business logic while transforming architecture.

Automation changes the equation.

Automated modernization enables enterprises to move beyond legacy data gravity , toward an enterprise-ready, AI-capable foundation that supports real-time insight, governed experimentation, and scalable intelligence.

The goal is not simply to migrate data. It is to prepare it for AI.

Chapter 1: From cloud adoption to AI readiness

Enterprise cloud adoption has matured. Infrastructure provisioning is no longer the barrier it once was. What remains challenging is preparing enterprise data systems to support AI at scale.

Data warehouse migration continues to be one of the highest-risk transformation programs within large organizations, not because of infrastructure, but because of embedded complexity. Decades of accumulated business logic, undocumented dependencies, tightly coupled ETL pipelines, and proprietary SQL dialects sit beneath reporting layers that the business depends on daily.

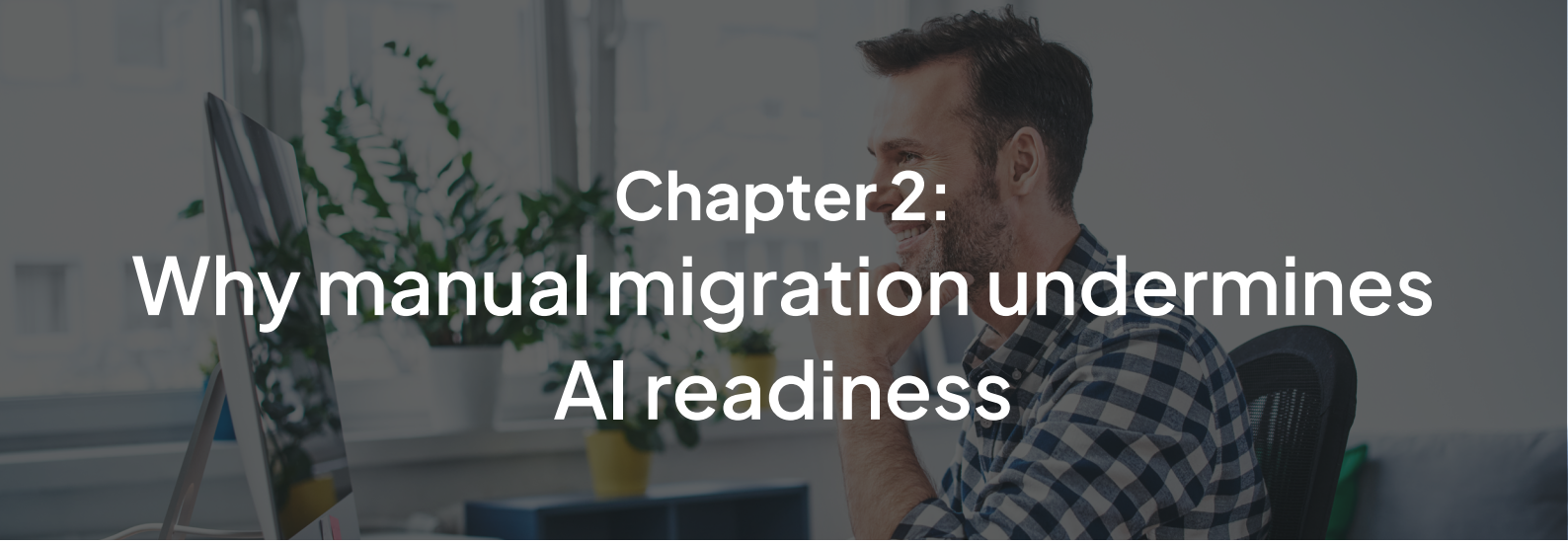
Most legacy warehouses were built for structured reporting and batch analytics. They were not designed for elastic compute, real-time processing, or AI-driven workloads. As organizations push toward machine learning, generative AI, and predictive intelligence, these architectural constraints become increasingly visible.

When migration is treated as a lift-and-shift exercise, the outcome is often superficial relocation rather than structural readiness. Data may reside in the cloud, yet logic remains fragile, lineage unclear, costs unpredictable, and validation incomplete. In this state, AI initiatives stall not due to lack of ambition, but due to lack of trustworthy foundations.

Automated data warehouse migration has emerged as the only scalable path forward. It replaces manual, engineer-driven processes with structured discovery, lineage-aware planning, automated code transformation, and parallel validation. More importantly, it creates transparency into how data behaves, how workloads scale, and how logic translates in modern architectures.

At enterprise scale, modernization is no longer about infrastructure alone. It is about transforming legacy data ecosystems into reliable, governed, AI-capable platforms.

This document outlines the technical foundations, architectural principles, and operational model required to execute automated migration while enabling true AI readiness.



Chapter 2: Why manual migration undermines AI readiness

Traditional migration strategies rely on manual discovery, manual code rewriting, and sequential validation. This assumes engineers can fully interpret and replicate decades of accumulated business logic through documentation and testing alone. At enterprise scale, that assumption does not hold.

Legacy warehouses contain thousands of interconnected tables, pipelines, and reporting layers. Many workloads are rarely used but structurally linked to critical processes. Without automated lineage mapping, teams lack full dependency visibility. Migration sequencing becomes guesswork, leading to redundant effort, hidden failures, and inflated costs.

Manual code conversion adds further risk. Engineers must review and adjust thousands of scripts across proprietary SQL dialects and complex ETL workflows. Even small inconsistencies can produce discrepancies between environments. Sequential testing extends timelines and compounds uncertainty.

Validation is the final bottleneck. Enterprises handling massive data volumes cannot rely on manual reconciliation. Without automated comparison at scale, mismatches often surface late, forcing rework and undermining trust.

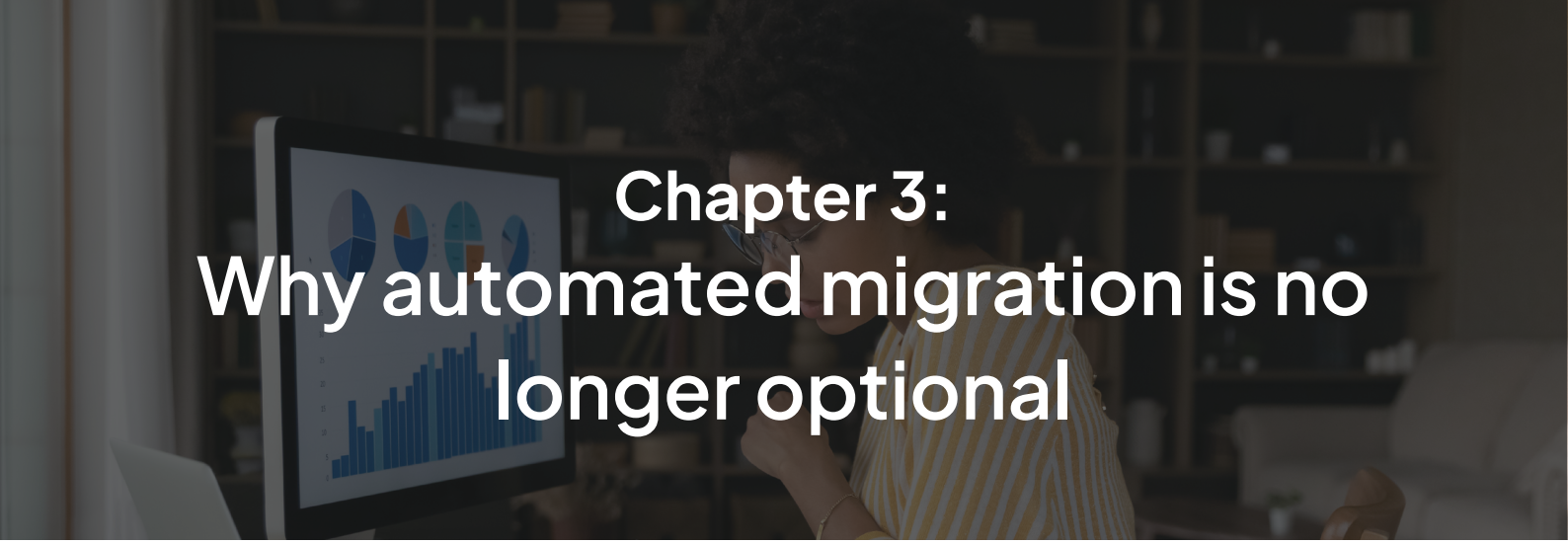
Cost governance also suffers. Without workload classification and capacity modeling, organizations over-provision infrastructure to avoid performance issues, driving unpredictable cloud spending.

These limitations do more than delay migration. They weaken AI readiness. Machine learning systems require trusted lineage, consistent logic, validated datasets, and predictable performance. When migration remains manual, those foundations remain fragile.

Enterprise modernization demands structured automation, coordinated validation, and continuous governance to support both migration success and AI enablement.

Table 1: Failure points in manual migration

Area	Technical Risk	Business Impact
Discovery gaps	Missed dependencies	Pipeline failures
Manual code rewrite	Logic inconsistencies	Incorrect reporting
Sequential testing	Long validation cycles	Delayed go-live
Improper sizing	Over-provisioned compute	Cost overruns
Limited lineage	Governance gaps	Compliance risk



Chapter 3: Why automated migration is no longer optional

Modern data platforms have crossed a complexity threshold.

Manual migration approaches that worked a decade ago cannot scale to today's environments. Enterprise warehouses now include thousands of tables, deeply nested SQL logic, cross-platform integrations, streaming inputs, and layered reporting dependencies. Many of these systems evolved incrementally. Documentation is incomplete. Ownership is distributed. Business logic is embedded in places few teams fully understand.

In this environment, traditional migration introduces three predictable risks.

First, incomplete discovery. Manual assessments cannot reliably map all upstream and downstream dependencies. Hidden coupling between systems surfaces late, forcing rework.

Second, inconsistent transformation. When thousands of scripts are rewritten manually, structural inconsistencies and logic deviations become inevitable. Even minor mismatches can cascade into reporting errors.

Third, delayed validation and cost shock. Testing often happens after migration phases complete. Performance patterns differ in cloud environments. Without early workload modeling, cost exposure becomes visible only after deployment.

Automation addresses these constraints directly.

Automated migration platforms extract metadata and logs programmatically, map lineage relationships at scale, and model workload characteristics before movement begins. They convert legacy SQL and ETL logic using structured translation pipelines instead of manual interpretation. They validate data in parallel with transformation rather than as a final checkpoint.

The result is not just speed. It is predictability.

Automation reduces variance in planning, execution, and validation. It transforms migration from a best-effort engineering exercise into a controlled modernization process. But automation alone is not enough. It must be coordinated through an intelligence fabric that connects planning, transformation, and optimization. So let's see what happens when we add that intelligence fabric.

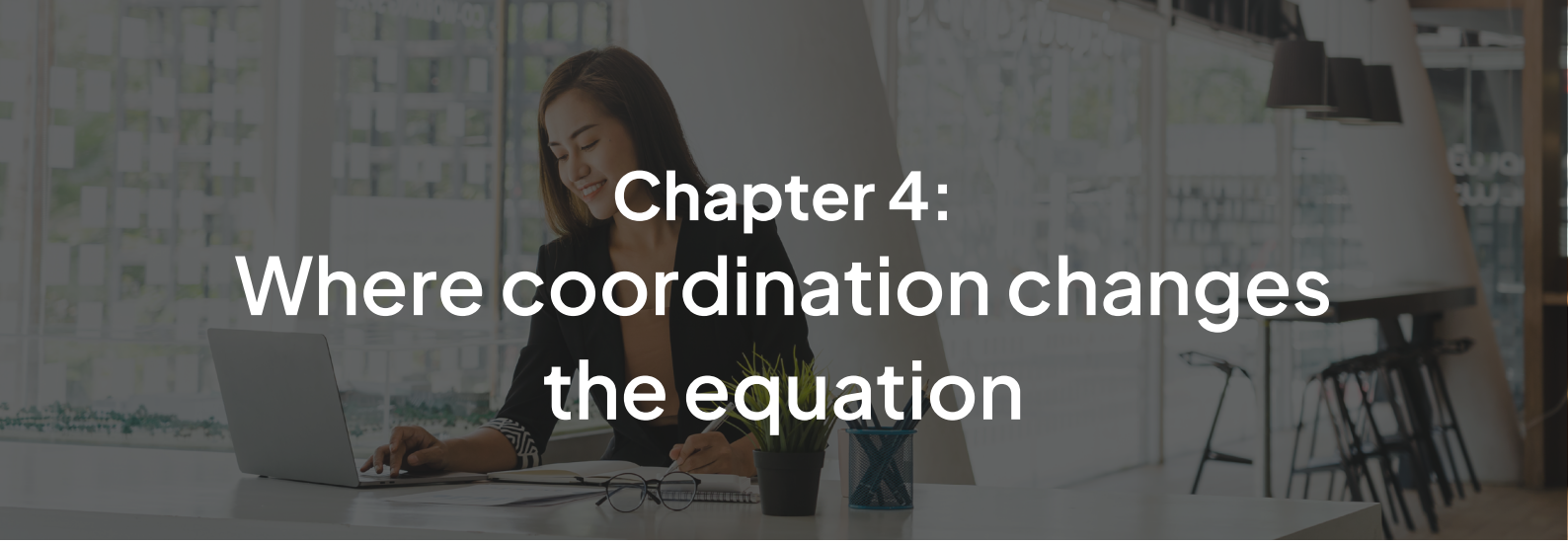
Migration risk diagnostic checklist

Before starting migration, can you confidently answer these questions?

- [ ] Do we have complete, end-to-end data lineage across all critical systems?
- [ ] Can we clearly identify which datasets are trusted, validated, and production-ready for AI use?
- [ ] Have we classified workloads by activity, criticality, and compute intensity?
- [ ] Is legacy transformation logic documented, standardized, and cloud-optimized?
- [ ] Is data validation automated and scalable across environments?
- [ ] Do we have predictable cloud cost modeling for AI and analytics workloads?
- [ ] Are governance controls embedded into data access, usage, and model training processes?
- [ ] Can we trace AI outputs back to validated source data without ambiguity?

Data modernization readiness scorecard

Score (Yes Responses)	Readiness Level	What It Means
0–3	Poor Readiness	Migration risk is extremely high. Limited visibility into lineage, validation, and workload behavior will likely lead to delays, cost overruns, or incomplete AI enablement.
4–5	Fair Readiness	Some foundational elements exist, but gaps in governance, validation, or workload modeling may still undermine migration stability and long-term AI readiness.
6–7	Good Readiness	Your organization has established several key migration capabilities. With improved automation and coordination, you can significantly accelerate modernization.
8	Optimal Readiness	Your data foundation is well-structured for modernization. Automated migration and AI activation can proceed with significantly lower operational and financial risk.



Chapter 4: Where coordination changes the equation

Automation alone solves scale. Coordination solves continuity.

In fragmented environments, discovery tools, conversion engines, validation systems, and cost monitors operate independently. Teams stitch them together manually. This creates process gaps between planning, transformation, and optimization.

True modernization requires coordinated execution across phases.

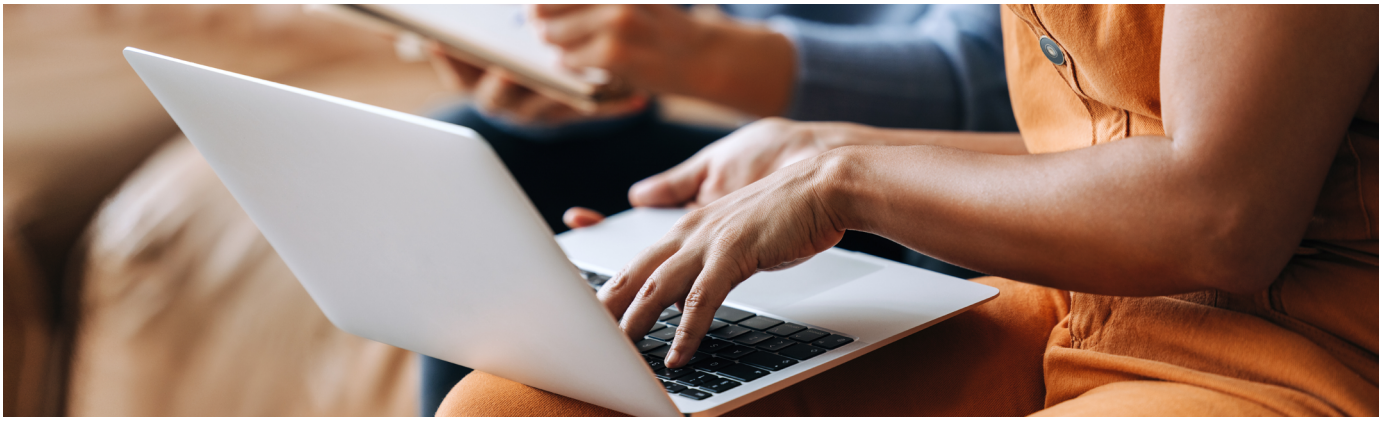
- Discovery insights must inform transformation logic.
- Transformation outputs must trigger validation automatically.
- Validation results must influence cost and performance optimization.
- Operational data must continuously refine planning decisions.

Without this coordination layer, modernization becomes a sequence of isolated projects rather than a managed lifecycle.Migration does not end at cutover. Workloads evolve. Data volumes grow. AI models require new pipelines. Governance requirements shift. Teams change.

When systems are not continuously aligned, organizations return to fragmentation within months. What changes the equation is not just more automation. It is autonomous coordination across the lifecycle.

Wingspan was built to unify data modernization and AI activation through agentic automation. The next evolution of Wingspan deepens this coordination, enhancing how autonomous agents collaborate, share context, and govern execution across the modernization journey.

This upcoming release formalizes a more tightly synchronized operating model, designed to reduce inter-phase friction and strengthen enterprise oversight. Additional details will be shared soon.



Chapter 5: Wingspan: The Agentic AI platform for Data-to-AI transformation

Enterprise migration rarely fails because of a single tool. It fails because discovery, transformation, validation, and optimization operate in isolation. Modernization requires coordination across these phases, not disconnected execution.

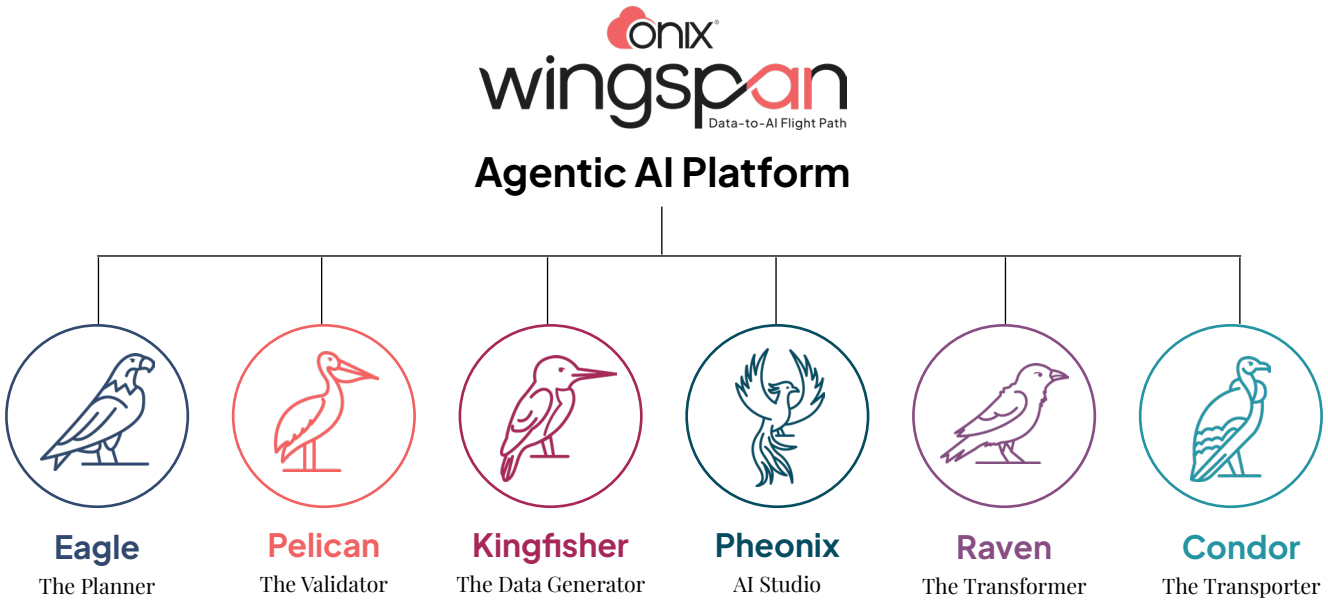
Wingspan is designed as an integrated modernization fabric that replaces fragmented, manual processes with structured automation. Instead of treating migration as a sequence of unrelated tasks, it connects assessment, ingestion, transformation, validation, and post-migration governance into a controlled lifecycle.

Wingspan is designed as an agentic AI platform that brings autonomous coordination to the data modernization journey. It replaces fragmented, manual handoffs with intelligent agents that collaborate across assessment, ingestion, transformation, validation, and governance.

Rather than treating migration as isolated phases, Wingspan orchestrates the entire lifecycle, guiding enterprises from legacy systems to AI-ready platforms through a structured, end-to-end data-to-AI flight path.

Within Wingspan, each proprietary capability operates as an intelligent agent within the broader agentic AI platform. Rather than functioning as disconnected tools, Eagle, Raven, Pelican, Kingfisher, Phoenix, and Eagle FinOps collaborate as coordinated components across the data-to-AI lifecycle.

Each agent addresses a specific modernization or AI enablement challenge while contributing to a unified, autonomous modernization journey.



Eagle

Intelligence-driven discovery and planning

Modernization begins with clarity. Eagle automates the assessment of legacy warehouses by extracting metadata, parsing logs, and mapping lineage across systems. It identifies workload dependencies, usage patterns, and dormant assets before migration starts.

By modeling volumetrics and compute behavior, Eagle produces structured timelines and budget estimates. It also identifies opportunities to decouple tightly bound legacy architectures and redesign them for cloud-native scalability.

The result is evidence-based planning rather than assumption-driven execution.

Raven

Scalable transformation into cloud-native execution

Legacy SQL dialects and ETL frameworks are not directly compatible with modern cloud data platforms. Manual rewriting at scale introduces inconsistency and delay.

Raven automates the conversion of complex SQL, ETL mappings, and proprietary scripting into optimized cloud-native equivalents. It translates traditional ETL logic into ELT models designed for distributed cloud compute architectures such as BigQuery.

By standardizing transformation, Raven reduces human error, shortens execution timelines, and ensures workloads are aligned with modern performance models rather than legacy constraints.

Pelican

Parallel validation at enterprise scale

Migration without validation introduces unacceptable risk. Data accuracy must be preserved across fundamentally different architectures.

Pelican reconciles source and target environments using hash-based comparison mechanisms that avoid direct data movement. It performs granular validation at scale, detecting mismatches across schema variations and data types.

Validation runs alongside transformation, reducing bottlenecks and enabling confident legacy system retirement without extended QA cycles.

Kingfisher

Secure synthetic data for testing and AI development

Modernization frequently requires testing, integration validation, and AI model training. Using live production data introduces regulatory and privacy risks.

Kingfisher generates statistically accurate synthetic datasets derived from structural and distributional analysis of production systems. It preserves relational integrity and behavioral patterns while eliminating exposure of personally identifiable information.

This allows enterprises to test pipelines, validate integrations, and train AI models in secure environments without compliance risk.

Phoenix

Operationalizing AI after modernization

Cloud migration alone does not produce AI value. Enterprises must deploy machine learning and generative AI workflows that are accurate, governed, and integrated with operational systems.

Phoenix AI Studio provides a structured environment for building, fine-tuning, and deploying AI models aligned with enterprise data. It incorporates accuracy controls and governance mechanisms to prevent unreliable outputs and maintain operational safety.

It bridges the gap between having modernized data and activating it for measurable business impact.

Eagle FinOps

Continuous cost governance

Migration shifts spending models from capital expenditure to consumption-based cloud models. Without active monitoring, cost drift can erode projected ROI.

Eagle FinOps provides ongoing visibility into workload consumption, cost allocation, and optimization opportunities. It aligns technical usage patterns with financial governance, enabling proactive cost management rather than reactive budget corrections.

This ensures that modernization remains financially sustainable over time.

The integrated outcome

Together, these components form a controlled modernization lifecycle:

- Eagle establishes visibility
- Condor enables governed ingestion
- Raven transforms legacy logic
- Pelican validates accuracy
- Kingfisher enables safe experimentation
- Phoenix activates AI value
- Eagle FinOps sustains cost discipline

Modernization succeeds when each phase informs the next.
Wingspan connects them into a coherent system rather than a collection of tools.

Bird	Capabilities		Business Impact
Eagle	Graph-based end-to-end lineage mapping across legacy ecosystems	Automated workload classification with volumetric cost modeling	200+ enterprise environment blueprints delivered, enabling up to 75% reduction in projected migration costs
Raven	Automated multi-dialect SQL and ETL code conversion	Cloud-native ELT transformation optimized for distributed compute platforms	6M+ complex tables migrated, reducing engineering effort by up to 45–55%
Pelican	Zero data movement validation using secure hash-based comparison	Cell-level reconciliation with intelligent schema mapping	500T+ records validated globally with guaranteed reconciliation accuracy
Kingfisher	Statistically accurate synthetic data generation	Full compliance with PII-safe data simulation for testing and AI training	100% compliant data generation with zero instances of PII leakage
Phoenix AI Studio	Structured enterprise LLM deployment framework	Built-in hallucination guardrails and context-aware output validation	Enables governed AI activation without exposing enterprise to reputational or compliance risk
Eagle FinOps	Continuous workload-level cloud cost monitoring	Department-level cost attribution with automated anomaly alerts	Prevents cloud cost overruns and sustains long-term ROI through active consumption governance

Conclusion

Enterprise AI succeeds when data foundations match ambition. The case studies reveal a consistent pattern. Intelligence was not unlocked by relocating data alone. It emerged through structured discovery, automated transformation, continuous validation, and governed execution.

In each engagement, context came first. Dependencies were mapped before movement. Legacy logic was translated without distortion. Data was reconciled at scale. Sensitive information was protected. Cloud consumption was actively managed.

The outcome was not merely a completed migration. It was a resilient, scalable data backbone capable of powering real-time analytics, machine learning, and generative AI with confidence.

AI readiness is not defined by being in the cloud. It is defined by having trusted lineage, consistent logic, reliable validation, and cost discipline across the lifecycle. Organizations that treat modernization as an intelligence strategy rather than a one-time project position themselves to innovate continuously.

The next step is not to move data faster.
It is to make your data intelligent by design.

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