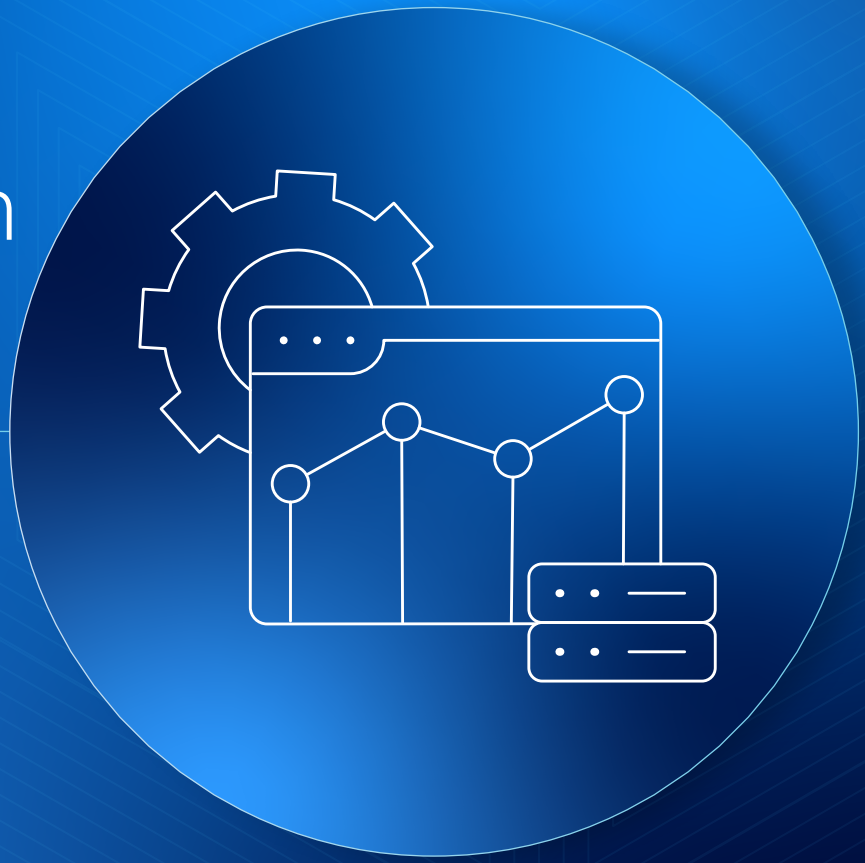
# Building a Data Foundation for Operational Agility

Toolkit



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# Introduction: Building a Data Foundation for Operational Agility

Chapter 01

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# Introduction: Building a Data Foundation for Operational Agility

For global banks and sell-side institutions, operational complexity compounds over time across products, data, and workflows. As growth and innovation accelerate, many firms are layering new demands onto legacy infrastructure that was never designed to support them.

While firms have made progress addressing these issues, significant challenges remain. What begins as a technology limitation quickly surfaces as an operational constraint, and ultimately a competitive one.

Data is fragmented across systems. Product complexity outpaces infrastructure. Client expectations quickly grow. Inconsistent data definitions and limited visibility make it harder to maintain accuracy at scale. The result is rising operational costs, slower execution, and increased risk across the investment lifecycle.

These challenges are addressable. This toolkit explores four data priorities designed to directly impact operational performance, and the practical strategies to help address them:

- Modernizing legacy infrastructure to unlock operational agility
- Improving data quality to enable scale and innovation
- Aligning operations with business ambition
- Achieving data interoperability across a fragmented ecosystem

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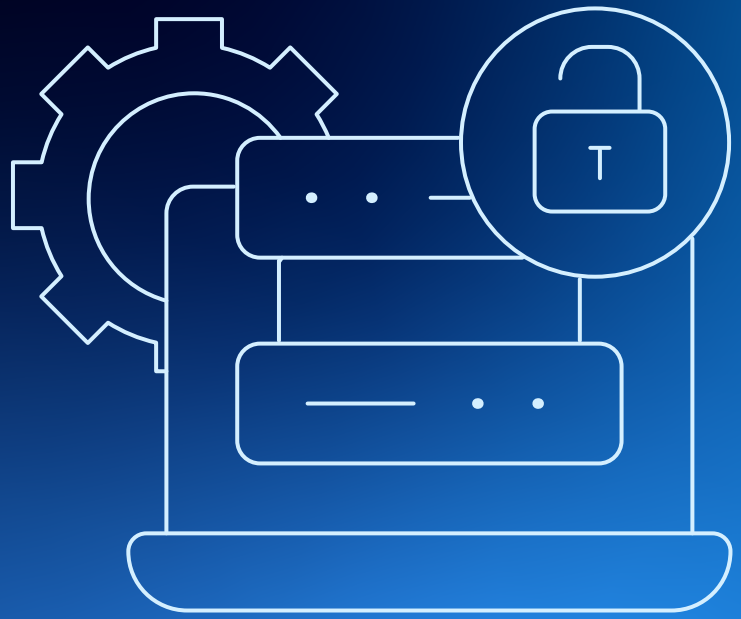
# Modernizing Infrastructure to Unlock Operational Agility



Chapter 02

02

# Modernizing Infrastructure to Unlock Operational Agility

Streamlining operations and driving scalable efficiency starts with modernizing the data foundations that power them. For many firms, their tech stack is a product of decades of evolution spanning mainframe systems built for a different era, layered with acquisitions, and homegrown solutions.

These systems at one point often served the business well, and in some cases may continue to do so. The challenge is that over time, the accumulated complexity can limit scalability, integration, and adaptability, and sometimes in ways that are not immediately visible until a modernization effort surfaces them.

## Key Questions to Evaluate

- When competing for budget, how often do maintenance and operational priorities crowd out strategic technology investment?
- How many source systems feed your core operational data, and how many were inherited through M&A rather than built as part of a deliberate architecture?
- To what extent have individual business units evolved independently, creating workflows outside of shared systems and standards?

60%

of overall tech spend is allocated to "run-the-bank" activities, limiting capacity for innovation[1]

## Warning Signs to Watch

- The cost of maintaining existing infrastructure continues to rise while flexibility and performance struggle to keep up.
- Operational datasets do not reconcile efficiently, and breaks are treated as routine rather than signals of deeper structural issues.
- Data across systems or business lines requires significant manual effort to reconcile, with reconciliation embedded as a permanent part of daily workflows rather than an exception.

## Strategic Considerations

Modernizing infrastructure is increasingly a strategic necessity, though the path forward is rarely straightforward. While many firms have made significant progress, the challenge is rarely the technology alone.

More often, complexity stems from underlying semantic ambiguity: undocumented business logic, inconsistent data conventions, and institutional knowledge that has accumulated over time but remains uncodified.

Addressing this requires a deliberate approach that prioritizes clarifying and standardizing core data while capturing embedded knowledge in a structured, transparent way. AI-assisted tooling can help accelerate this process, but domain expertise from industry specialists remains essential to ensure accuracy and context are preserved.

1. BCG, Tech in Banking 2025: Transformation Starts with Smarter Tech Investment, May 6, 2025

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# Improving Data Quality to Enable Scale and Innovation

Chapter 03

03

# Improving Data Quality to Enable Scale and Innovation

In sell side operations, data is often fragmented across systems and workflows, where definitions, formats, and conventions vary. As such, maintaining accuracy, consistency and completeness becomes increasingly difficult. What begins as small discrepancies can quickly escalate into operational risk, reporting errors, and reduced confidence in data.

Operational data should not be viewed in isolation, as it underpins critical business functions such as regulatory reporting, treasury and compliance processes, product developments, or client initiatives. When quality breaks down at the source, those issues can cascade across downstream functions, amplifying risk and rework.

At the same time, digital transformation, advanced analytics, and AI initiatives all depend on trusted data. For many firms, data quality issues become an invisible constraint, slowing progress before these efforts can be fully scaled.

## Key Questions to Evaluate

- How much manual validation is required before data is considered reliable for reporting or decision-making?
- Are data definitions consistent across business lines, or do different teams operate from different versions of the same data?
- Do teams have clear visibility into data lineage? Where data originates, how it is transformed, and who owns it?
- Are data quality controls embedded within workflows, or applied reactively after issues surface?

## Warning Signs to Watch

- Data quality issues are discovered downstream in reports, client deliverables, or regulatory submissions, rather than at the source.
- Data reconciliation and exception management consume a disproportionate share of team capacity.
- Analytics and transformation initiatives stall or are scaled back due to lack of trust in underlying data.

## Strategic Considerations

Improving data quality starts with shifting validation upstream, and it's just as much of a governance challenge than a technical one.

For example, when source systems represent data inconsistently — negative amounts versus absolute values, or "Long" versus "l" — it creates a cascade of downstream implications. Trades may not match positions; cash activity may not tie to balances.

Firms that treat data quality and governance as a strategic imperative rather than an operational exercise will be better positioned to scale their operations and pursue future technologies with confidence.

# Aligning Operations with Business Ambition

Chapter 04

04

# Aligning Operations with Business Ambition

Growth in client volume, product complexity, and regulatory demands is a natural byproduct of a thriving business. Today's markets bring both opportunity and uncertainty in equal measures, where shifts in volatility and sentiment can quickly open new avenues for growth.

For example, sell-side optimism in the global derivatives industry reached 81–84% in Q1 2026, rebounding after experiencing sentiment decline in the prior year, according to the SGX Global Market Sentiment Report.[2] As conditions evolve, demand for specific products can shift just as quickly.

At the same time, operations teams are often asked to do more with less. Supporting higher volumes, more complex instruments, or evolving regulatory requirements without a corresponding increase in resources. Building a data foundation that supports optionality across products, asset classes, and market conditions can help firms better keep pace with change.

## Key Questions to Evaluate

- How often do revenue opportunities get deferred or declined because operations can't scale to support them?
- Where does complexity concentrate across the transaction lifecycle, and how much capacity is consumed managing it?
- How much time is spent extracting and processing data from unstructured sources that core systems cannot readily ingest?

## Warning Signs to Watch

- Reconciliation volumes increase with each new client or product added, with the burden absorbed by operations rather than the platform.
- Supporting new asset classes or client requirements demands incremental headcount rather than scalable infrastructure
- Critical data from unstructured sources (e.g. PDFs, emails, etc.) requires significant manual effort to extract and normalize, inserting costly delays into the settlement of complex instruments such as OTC derivatives and private assets.

## Strategic Considerations

Business ambitions should not be constrained by operational infrastructure. A data foundation that is flexible, domain-aware, and built for capital markets complexity enables firms to pursue growth more efficiently by supporting a broader range of products, workflows, and asset classes without rebuilding the operational model each time.

This flexibility can also unlock efficiency in areas that remain highly manual, from derivatives and structured products to financing activities around private assets. As market conditions and product demand continue to evolve, firms with more adaptable infrastructure are better positioned to absorb complexity without proportional operational overhead.

[2] Acuiti and Singapore Exchange (SGX Group), The SGX Global Market Sentiment Report Q1 2026, March 9, 2026.

# Aligning Operations with Business Ambition

## Industry Perspective

70%

of sell side firms expect to see significant changes to business models this year.[3]

## Operational Imperative

> "Technology must be ready to help firms take advantage of revenue opportunities when they arise and be able to lean into new business revenue models."[3]

**-Celent**

[3] Celent, Dimensions: Capital Markets IT Pressures & Priorities: Sell Side Edition 2025, April 2025 .

# Achieving Data Interoperability Across a Fragmented Ecosystem

Chapter 05

05

# Achieving Data Interoperability Across a Fragmented Ecosystem

Many sell-side firms operate across a landscape of disconnected systems built or acquired over time to address specific asset classes, business lines, or operational needs. This is further compounded by a complex network of counterparties, exchanges, and market and reference data providers. The challenge is not just system fragmentation alone, but also lack of shared data standards and connectivity that would enable these systems to work together coherently.

Equally important is the alignment between enterprise technology teams and the business units they serve. If technology priorities are set independently of business objectives, the result is often investment that does not translate into operational value. For firms looking to operate more efficiently, establishing a unified view of data is a foundational step toward operational clarity and a golden source of truth.

# Achieving Data Interoperability Across a Fragmented Ecosystem

## Key Questions to Evaluate

- How much manual transformation is required before data from different systems can be compared, aggregated, or reported on consistently?
- Are data definitions, formats, and conventions consistent across your systems, or does each system represent the same information differently?
- Do teams have timely, self-sufficient access to the data they need, or does access require coordination across multiple stakeholders?

## Warning Signs to Watch

- Teams spend significant time translating and reconciling data between systems before it can be trusted or used, slowing decision-making.
- Inconsistent data representations (e.g. identifiers, entities, conventions) require ongoing manual interpretation.
- Individual teams or business lines maintain their own copies of data due to lack of access to a shared, trusted source

## Strategic Considerations

Data fragmentation is as much an organizational challenge as a technical one. When teams must negotiate access to data or align on definitions before they can act, execution slows and operational overhead compounds.

Establishing a golden source of truth requires both shared data standards and the connectivity infrastructure to enforce them. Modern, domain-aware platforms with pre-configured integrations across counterparties, market data providers, and third-party systems can help streamline pipeline development and connectivity.

The ability to bridge existing and modern systems incrementally is also important, establishing interoperability without requiring wholesale replacement. Firms that achieve this can reduce friction, free up capacity, and give their teams the data foundation they need to operate with confidence.

# Conclusion

Across sell-side organizations, operational challenges often trace back to a common set of underlying issues. Legacy infrastructure, growing product complexity, fragmented systems, and inconsistent data. Addressing these in isolation can provide incremental relief, but lasting impact comes from a more unified approach with data at the center.

When data is consistent, accessible, and governed across the organization, it becomes possible to streamline workflows, reduce manual effort, and improve the speed and accuracy of decision-making while also creating the foundation needed to support automation, advanced analytics, and AI.

Modernizing that foundation is not a one-time initiative but an ongoing capability. Firms that approach it deliberately are better positioned to scale operations, adapt to evolving demands, and pursue new opportunities with confidence.

For firms ready to take the next step, our guide to modernizing data infrastructure outlines how to assess your data environment and digital maturity, explores sample use cases, and shares key strategies for evolving data foundations to support more efficient operations.

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