



## THE HIDDEN PRICE OF INACTION: LEGACY SYSTEM COSTS IN FINANCIAL SERVICES

Analysis of core trading platform costs reveals a startling reality: direct maintenance expenses often represent only 30% of the actual cost. The remaining 70% comes from a complex web of hidden impacts that accumulate over decades – from redundant market data feeds to elaborate manual workarounds that become essential operational procedures.

This reflects a growing challenge in financial services: the true cost of legacy systems extends far beyond visible maintenance expenses, creating an expanding web of operational inefficiencies that increasingly threaten institutional competitiveness. These hidden costs typically manifest in three critical dimensions: operational inefficiency, innovation paralysis, and increased risk exposure.

### THE OPERATIONAL EFFICIENCY TRAP

Legacy trading platforms, particularly those over 20 years old, have become increasingly complex through years of incremental additions. What started as streamlined systems have evolved into "technological hairballs" - layers of functionality built upon aging cores that were never designed for modern trading volumes or T+1 settlement requirements.

The lack of microservices architecture in these legacy systems creates a particularly insidious form of technical debt. Rather than being able to update or replace individual components, institutions find themselves maintaining entire platforms just to support specific critical functions. This results in what we call the "bloatware tax" - maintaining and testing unused features simply because they're inextricably linked to essential ones.

The data implications are significant. Organizations often maintain multiple redundant data feeds and stores, frequently paying for the same market data multiple times through different systems. Each of these duplicate feeds brings its own burden: separate infrastructure, dedicated support staff, and distinct reconciliation processes. As a result, annual technology costs increase by millions without providing any additional operational benefit.

More concerning is the opportunity cost of trapped data. Modern AI and machine learning capabilities offer significant competitive advantages, but legacy systems' siloed data structures make these technologies difficult or impossible to implement effectively. The inability to harness data for advanced analytics compounds the problem, with valuable data trapped in siloed structures, rendering much of its potential untapped.

## THE INNOVATION PARALYSIS EFFECT

Perhaps more costly than operational inefficiency is the opportunity cost of delayed innovation. Legacy systems, with their monolithic architectures, make it extraordinarily difficult to integrate new technologies or respond to market opportunities. This manifests in several ways:

- **Extended Time-to-Market:** New business initiatives that should take weeks often stretch into months or years due to integration complexity
- **Increased Development Costs:** Simple changes require extensive testing across interconnected systems
- **Limited Experimentation:** The risk of disrupting critical trading functions makes institutions hesitant to innovate
- **Talent Constraints:** As the pool of professionals familiar with legacy technologies shrinks, institutions face escalating costs just to maintain basic functionality

The most pressing hidden cost comes from the rapidly evaporating talent pool for legacy system maintenance. COBOL developers, once readily available, now command premium rates up to 70% higher than modern technology specialists. The average age of mainframe experts exceeds 50 years, with retirements accelerating faster than new talent enters the field.

This demographic challenge creates a vicious cycle. As experienced developers retire, the remaining team members become increasingly expensive to retain. The situation worsens as training new developers on legacy systems requires 18-24 months of investment, and few are willing to learn technologies widely viewed as career limiting. The result is predictable but severe: maintenance costs typically increase by 25% year-over-year due to rising personnel costs alone.

## THE RISING RISK PREMIUM

The risk profile of legacy systems has fundamentally changed in recent years. What was once considered stable, if inefficient, infrastructure has become an increasing liability in several key areas:

### 1. Regulatory Compliance Risk

- Legacy systems designed for T+3 settlement cycles struggle with T+1 requirements
- Audit trails and reporting capabilities often fall short of current regulatory standards
- System modifications for new compliance requirements become increasingly complex and risky

### 2. Operational Risk

- Critical system knowledge often resides with a shrinking pool of experts
- Disaster recovery and business continuity capabilities may not meet current standards
- Integration points between legacy and modern systems create potential failure points

### 3. Cybersecurity Risk

- Older systems may lack modern security features and protocols
- Patches and updates become more difficult to implement
- Integration with modern security tools and monitoring systems is often limited

These risks often manifest in operational workarounds. Teams create elaborate spreadsheet-based workflows to compensate for missing functionality in core systems. What starts as temporary solutions become critical operational procedures, requiring dedicated staff and introducing significant operational risk. For example, organizations might need hundreds of interconnected spreadsheets with complex macros to perform basic position calculations.

This situation leads to exponential growth in technical debt. Each new feature or regulatory requirement adds layers of complexity to an already fragile system. Simple changes, such as supporting a new derivative product type, might require updates to multiple system components and take months to complete. The problems compound rapidly: change request backlogs can expand by 40% annually, while the time needed for modifications increases by 25% year-over-year due to the mounting system complexity.

### THE COST OF INACTION

Perhaps the most compelling argument for modernization comes from examining the cost trajectory of maintaining legacy systems. Analysis shows a stark reality: maintenance costs typically increase by 15-20% annually for systems over 15 years old, while the availability of qualified support resources simultaneously decreases by 8-10% per year.

The technical debt burden compounds yearly, creating a cascade of hidden costs that many institutions struggle to quantify. Legacy settlement engines designed for older processing standards often require extensive manual intervention to handle modern transaction volumes. What begins as occasional overtime for batch processing frequently evolves into permanent additional shifts, with associated costs that never appear in technology budgets.

Historic analysis demonstrates that internally built technology solutions often become high risk, resource intensive, and costly to maintain. The decision between building internally versus buying vendor solutions requires careful TCO analysis across multiple dimensions:

#### Technology & Infrastructure

- Software licenses and development
- Hardware and infrastructure
- Implementation fees
- Service fees

- Data costs and management

### **Operational Considerations**

- Headcount and resourcing requirements
- Operational inefficiencies
- Manual processes that could be automated
- Redundant data feeds and storage
- Integration and testing requirements

### **Strategic Factors**

- Business disruption during migration
- Vendor roadmap prioritization
- Project execution dependencies
- Future flexibility vs certainty of outcome
- Innovation capability

This comprehensive analysis often reveals significant hidden costs and opportunities. Proper TCO analysis and requirements documentation can significantly impact vendor pricing and solution design, highlighting the importance of thorough cost evaluation.

This comprehensive analysis often reveals significant hidden costs and opportunities. Proper TCO analysis and requirements documentation can significantly impact vendor pricing and solution design, highlighting the importance of thorough cost evaluation.

The optimal approach typically combines several key strategies. Organizations should focus on core and critical IP differentiated products while integrating best-of-breed vendor solutions for commoditized functions. This balanced approach includes reducing IT operating costs through strategic vendor relationships and maintaining flexible funding arrangements across internal funding, licensing, and investment/acquisition options.

## **COST ANALYSIS BEYOND THE OBVIOUS**

Even as these cost pressures mount, the technology landscape continues to evolve. Next-generation technology providers are emerging with modular, extensible solutions that, while not complete replacements for legacy systems, offer significant advantages in specific components of the trading lifecycle. Financial institutions that delay modernization find themselves at an increasing disadvantage in terms of both cost structure and capability.

When it comes to integrating various software solutions, organizations often find themselves caught between a rock and a hard place. On one hand, they can choose to invest significant resources into developing custom integration layers to connect their disparate systems. While this approach allows for tailored integration, it comes at a steep cost in both time and money.

The alternative is to forego the benefits of best-of-breed solutions available on the market. By limiting their choices to software suites that offer native integration, organizations can avoid the hassle and expense of custom development. However, they may miss out on cutting-edge features and functionality offered by standalone solutions.

This integration challenge extends beyond technical complexity. Legacy systems often require specialized knowledge to maintain interfaces, creating key person dependencies that increase operational risk. Critical system interfaces may depend entirely on the knowledge of a small number of experienced staff nearing retirement.

The discussion of architectural approaches leads to a critical yet often misunderstood aspect of modernization: its true economic impact. While most institutions understand basic cost calculations, the financial dynamics of major technology transformations extend far beyond traditional TCO models.

## **BUILDING A FRAMEWORK FOR TOTAL IMPACT ASSESSMENT**

The decision to maintain legacy systems is no longer just a technology choice- it's increasingly becoming a strategic liability. The true cost of inaction typically exceeds the visible price of maintaining legacy systems, manifesting in three critical dimensions:

1. **Operational Efficiency:** The compounding effect of technical debt and workarounds creates an unsustainable operational burden.
2. **Innovation Capacity:** Legacy systems increasingly prevent institutions from adopting new technologies and responding to market opportunities.
3. **Risk Management:** The evolving risk landscape demands modern capabilities that legacy systems struggle to provide.

Forward-thinking institutions recognize that the challenges posed by legacy systems extend far beyond the immediate costs and technical difficulties of modernization. These organizations are proactively developing comprehensive frameworks to understand and address the hidden impacts that outdated technology can have on various aspects of their operations and long-term success.

First and foremost, institutions must consider the total cost of ownership across all impact areas, not just the upfront expenses of modernization. This includes evaluating the ongoing costs of maintaining and updating legacy systems, as well as the potential losses incurred due to inefficiencies, missed opportunities, and reputational damage.

The key lesson? The cost of inaction often exceeds the visible price of maintaining legacy systems. In our next article, we'll explore specific decisioning frameworks and design considerations for planning and executing modernization initiatives that address these challenges while minimizing operational risk.