

Why modernizing actuarial operations is the next frontier in reinsurance deals

By Poojan Shah | October 2025

In the evolving landscape of the life insurance and reinsurance market, the competitive edge is no longer determined solely by access to capital or the ability to identify attractive transactions. Increasingly, it is defined by execution, which rests heavily on the strength of an insurer's actuarial and financial operations.

Antiquated infrastructure, fragmented processes and siloed data can slow pricing, complicate integration and diminish deal value, while modernized actuarial platforms, integrated data architecture and automated processes enable deals to be executed faster, integrated more smoothly and managed more profitably.

As the volume of reinsurance transactions continues to grow, deals are no longer isolated financial events. They must be priced, executed and managed through an insurer's operational infrastructure. If that infrastructure is outdated, it becomes a bottleneck that can delay decisions, increase risk and even jeopardize deal execution. Conversely, insurers leveraging modern actuarial platforms, integrated data architecture and automated workflows can execute deals faster, integrate blocks more efficiently and maximize post-deal value.

Industry data underscore this trend. In a survey of 250 private equity and insurance executives, more than two-thirds of respondents identified enhanced technology and insurtech capabilities as critical to creating post-deal value. Similarly, global analyses of insurance organizations show that only a minority of firms consider their transformation and cost initiatives highly successful, highlighting ongoing operational execution challenges.¹

These findings point to a growing consensus: Modernizing actuarial operations through integrated systems, streamlined workflows and advanced analytics is no longer a back-office initiative but a strategic differentiator.

Legacy actuarial processes: Silent deal killers

Many insurers continue to rely on legacy actuarial processes that were not designed to support today's fast-paced transaction environment. These outdated practices can quietly compromise deals by slowing valuations, introducing risk and reducing operational agility.

Lengthy and rigid projection cycles

Traditional actuarial models often run on legacy systems that rely on batch processing, limiting speed and flexibility, or extensive Excel workbooks, requiring manual intervention for each valuation run. Extended cycle times limit an insurer's ability to respond to dynamic deal scenarios. For example, legacy year-end forecasting may take multiple weeks to complete, creating delays in "what-if" analyses needed during live transactions.² If management requests a rapid assessment of ceded risk or interest rate shifts, delays can result in missed opportunities or suboptimal pricing.

Data silos and quality issues

Actuarial work depends on accurate, consolidated data from underwriting, policy administration, finance and investment teams. When these data reside in disparate systems with inconsistent formats and definitions, significant manual reconciliation is required. Actuaries often spend more time scrubbing and reconciling data than performing analysis. Surveys indicate that a majority of insurance firms lack a single source of truth for their actuarial data, limiting the speed and accuracy of decision making.³ Having transparent, well-governed data and models improves credibility and reduces friction during deal pricing and negotiation.

Dependence on manual processes

Manual workflows create risk and inefficiency in two critical ways. First, many actuarial functions depend heavily on a small number of experts to run complex models and produce results. This key-person dependency means that if these individuals are unavailable, critical processes can stall, slowing decision making and increasing operational risk. Second, the widespread use of end-user computing tools, such as spreadsheets, macros and ad hoc reports, introduces significant control

1. Insurance transformation: The new agenda. <https://assets.kpmg.com/content/dam/kpmgsites/xx/pdf/2025/07/insurance-transformation-report.pdf>

2. Actuarial process optimization — A case for using modern technology in the actuarial domain. <https://www.soa.org/digital-publishing-platform/emerging-topics/actuarial-process-optimization/>

3. PricewaterhouseCoopers Luxembourg, 2025. Exploring the future of actuarial modernisation [Survey Report]. <https://www.pwc.lu/en/actuarial-services/docs/pwc-ilac-2025-actuarial-modernization.pdf>

weaknesses. These tools often lack version control, audit trails and automated checks, making them prone to errors. A single mistake in a spreadsheet chain can lead to material mispricing or misstatement of capital impacts, with consequences that can affect deal economics and financial reporting. Industry research underscores that automation, standardized workflows and strong governance are essential to mitigate these risks and scale operations effectively.

Fragmented models across reporting bases

Insurers must produce projections and valuations across multiple reporting frameworks, each with distinct assumptions and measurement rules. The introduction of new accounting and regulatory standards — such as U.S. generally accepted accounting principles (GAAP) long-duration targeted improvements, International Financial Reporting Standards 17 and Valuation Manual 22 — has increased the need for dynamic, continuously updated models that reflect evolving assumptions and real-time experience. While some firms have integrated models across frameworks, many still face challenges in maintaining consistency and efficiency when updating multiple reporting bases. Consolidating models into a unified framework promotes efficiency and accuracy as well as enables clearer post-deal integration. Without modernization, mismatched outputs and hidden adjustments across systems can slow transaction execution.

What modernizing actuarial operations entails

Modernizing actuarial operations is a multidimensional transformation. At its core, it involves leveraging technology, data and process improvements to make actuarial work faster, more accurate and more insightful. This transformation goes beyond simply upgrading systems; it's about fundamentally rethinking how actuarial teams function, collaborate and drive strategic decisions.

Data integration and a single source of truth

Breaking down data silos is foundational. Centralized data repositories consolidate policy, claims, investment, expense and customer data into a single platform. The goal is to create a “single source of truth” that

integrates operations, customer, product, finance, actuarial and investment data. Automated feeds from administrative and financial systems ensure continuous updates, enabling actuaries to focus on analysis rather than reconciliation.

Data integration benefits both cedents and reinsurers by ensuring consistent assumptions for pricing and negotiation.⁴

Cloud computing and scalable modeling platforms

Actuarial modeling often requires significant computational power to perform stochastic simulations, stress tests and scenario analyses. Cloud-based platforms provide elastic capacity, enabling rapid execution of thousands of simulations simultaneously. Cloud adoption reduces time for iterative pricing, post-deal valuation and capital assessment, improving responsiveness during live transactions.⁵

Automation and end-to-end workflows

Automation eliminates repetitive, error-prone tasks. Workflow orchestration platforms can schedule valuations, validate outputs and post results directly to accounting systems without manual intervention. Version control and automated testing improve model reliability and auditability. Modern systems also embed controls, locking down formulas and recording changes, reducing operational risk.

Advanced analytics and scenario capabilities

Modern platforms integrate machine learning and artificial intelligence to enhance experience studies, reserve calculations and scenario modeling. Real-time “what-if” analyses allow management to quickly assess interest rate movements, lapse behavior or capital allocation strategies. Live dashboards link actuarial results to financial and investment analytics, enabling continuous, informed decision making.

Unified modeling across reporting bases

Unified model frameworks consolidate GAAP, statutory, economic and management reporting. Convergence ensures consistent outputs across multiple reporting requirements, simplifies maintenance and improves post-deal integration.

When a deal is priced, the same core model can now project GAAP earnings, statutory capital emergence and economic value. This simplifies integration and provides a holistic view of performance.

4. PricewaterhouseCoopers Luxembourg, 2025. Exploring the future of actuarial modernisation [Survey Report]. <https://www.pwc.lu/en/actuarial-services/docs/pwc-ilac-2025-actuarial-modernization.pdf>

5. Actuarial process optimization — A case for using modern technology in the actuarial domain. <https://www.soa.org/digital-publishing-platform/emerging-topics/actuarial-process-optimization/>

Talent and culture shift

Technology alone is insufficient; people and culture must evolve. Actuarial staff must be upskilled in data science, coding and the use of new tools. The culture shifts from number crunching to strategic analysis and consulting.

Cross-functional collaboration with IT and finance fosters faster, more insightful decision making. Cultural shifts toward continuous learning and strategic analysis enable actuaries to contribute higher-value insights, enhancing deal execution and operational agility. This integrated approach accelerates decision making and execution, providing a competitive edge in fast-moving deal environments.

How modern operations give deals a competitive edge

Modernizing actuarial operations delivers tangible, strategic advantages across the life cycle of reinsurance and M&A transactions. These benefits extend beyond operational efficiency; they directly impact deal competitiveness, pricing accuracy, integration speed and long-term value realization.

Speed and agility in deal evaluation

A modernized actuarial function enables insurers and reinsurers to evaluate opportunities with unprecedented speed. Insurers can ingest portfolio data, run multiple pricing scenarios and iterate quickly, reducing the risk of missed opportunities in competitive auctions. Automation has been shown to free actuarial resources for 45% more analytical work, directly enhancing deal readiness.⁶

Confidence in pricing and assumptions

Modern actuarial platforms support advanced analytics, including stochastic modeling, tail risk analysis and real-time sensitivity testing. These capabilities allow insurers to thoroughly vet assumptions such as longevity, lapse behavior and interest rate shocks before finalizing a deal.

Integrated, current data sets improve accuracy in pricing assumptions, aligning expectations between cedents and reinsurers and reducing negotiation friction.

Seamless integration and ongoing management

Post-deal integration is where many transactions falter. Modern actuarial systems enable seamless onboarding of reinsured blocks through automated data feeds, scalable modeling platforms, and advanced dashboards and analytics that track performance in real time. Deviations in claims, lapses or assets are detected early, allowing timely interventions. Operational efficiency reduces the marginal cost of adding new blocks and ensures consistent performance management.

Regulatory and stakeholder reporting

Modernized operations simplify compliance with regulatory and rating agency requirements. Auditable data lineage and automated reporting allow insurers to meet regulatory and rating agency requirements efficiently. Transparent, timely reporting reinforces confidence with regulators and investors, strengthening credibility in transaction contexts.

Enhanced strategic decision making

Modern actuarial functions are no longer just reporting engines; they are strategic partners. Unified models and real-time analytics empower insurers to make forward-looking, data-driven decisions on capital allocation, treaty evaluation and portfolio optimization.⁷



6. West Monroe's annual M&A research reveals bullish outlook on insurance dealmaking [Press release]. <https://www.westmonroe.com/press-releases/annual-m-and-a-research-reveals-bullish-outlook-on-insurance-dealmaking>

7. PwC Global Actuarial Modernisation Survey. <https://www.pwc.com/gx/en/financial-services/publications/assets/2023-pwc-actuarial-modernisation-survey.pdf>

Modernization in practice: Steps to get there

Modernizing actuarial operations is a strategic transformation that demands vision, coordination and sustained effort. For insurers and reinsurers aiming to unlock the full value of their transactions, the following steps offer a road map toward operational excellence.



1. Assess and define the vision

The journey begins with a candid assessment of current pain points — whether it's long cycle times, fragmented models or unreliable data. From there, organizations must articulate a clear vision for the future. This might include goals such as achieving a seven-day fast close, consolidating modeling platforms across reporting bases or enabling self-service analytics for leadership. Crucially, this vision must be championed by senior stakeholders across actuarial, finance and IT, as modernization cuts across all three domains. Increasingly, firms recognize that technology is not just a support function; it's a strategic enabler of growth.



2. Build a robust data foundation

No transformation succeeds without clean, consistent data. Establishing a strong data foundation often involves implementing a centralized data lake or warehouse tailored for actuarial use. Standardizing data definitions across products and cleansing historical records may seem tedious, but it lays the groundwork for automation and reliable analytics. The time invested here pays off in faster, more accurate decision making for years to come.



3. Select the right platforms and tools

Selecting the right technology stack is a critical step. Begin by implementing cloud-enabled actuarial systems alongside process automation solutions, including ETL (i.e., extract, transform, load) pipelines, job schedulers and workflow managers. Complement these with analytics platforms and business intelligence dashboards that support integration, scalability and transparency. Together, these tools create efficient workflows and robust decision-support capabilities.



4. Rationalize and convert models

Model consolidation is often the most resource-intensive phase. It may involve migrating products to new systems, collapsing multiple models into unified frameworks or increasing granularity to reduce duplication. Validation of outputs through parallel runs is essential, and emerging automation tools, including generative AI and automated code conversion, can accelerate the conversion process. Prioritizing high-impact areas, such as blocks with large reserves or significant volatility, can deliver early wins and build momentum.



5. Strengthen governance and testing

Speed without control introduces risk, making robust governance essential. Establish version-controlled repositories for model code, implement formal peer review processes, and automate reconciliation between legacy and modern outputs. Use test suites to validate model changes in real time, ensuring accuracy is never compromised. Maintain comprehensive documentation and data lineage to support auditability and uphold model integrity, even in high-stakes transactions.



6. Upskill people and engage teams

Modernization is as much about people as it is about platforms. Actuarial teams must be equipped with new skills in data science, coding and digital tools. The cultural shift, from manual number crunching to strategic analysis, requires clear communication and leadership. Blending IT and actuarial expertise is necessary to foster collaboration and innovation. When actuaries, finance professionals and technologists work together on a shared platform, decision making becomes faster, more informed and more aligned with business goals.



7. Adapt for global or hub environments

Modernization must accommodate legacy systems, hybrid cloud deployments and regional reporting requirements. While many newer entrants use cloud-first, off-the-shelf solutions, acquiring legacy blocks requires the ability to interface with older systems and invest in flexible data ingestion and modeling capabilities. Even highly agile platforms need to handle the complexity of integrating with cedents' existing infrastructure.

Conclusion: The new operational differentiator

Modernizing actuarial operations is more than a back-office upgrade. It is becoming a defining factor separating deal leaders from laggards.

It is no longer simply a matter of operational efficiency; rather, it has become a core enabler of strategic execution in mergers, acquisitions, reinsurance treaties and portfolio transfers. In a market where deal timelines are compressing and counterparties demand ever greater transparency, the ability to deliver accurate, granular and timely financial insight serves as a differentiator that directly influences transaction outcomes.

Leading market participants are already demonstrating the payoff. Some carriers have shortened their financial close cycle and provide product-level earnings attribution together with forward-looking projections before negotiations even conclude. Research has shown that organizations with accelerated financial close capabilities can dedicate significantly more time to value-adding activities such as scenario modeling, transaction structuring and integration planning.⁸ In contrast, slower-close organizations often find themselves reacting to events rather than shaping them, which erodes confidence among buyers, sellers and investors.

Modernized actuarial capabilities also strengthen negotiation leverage. With real-time scenario testing,

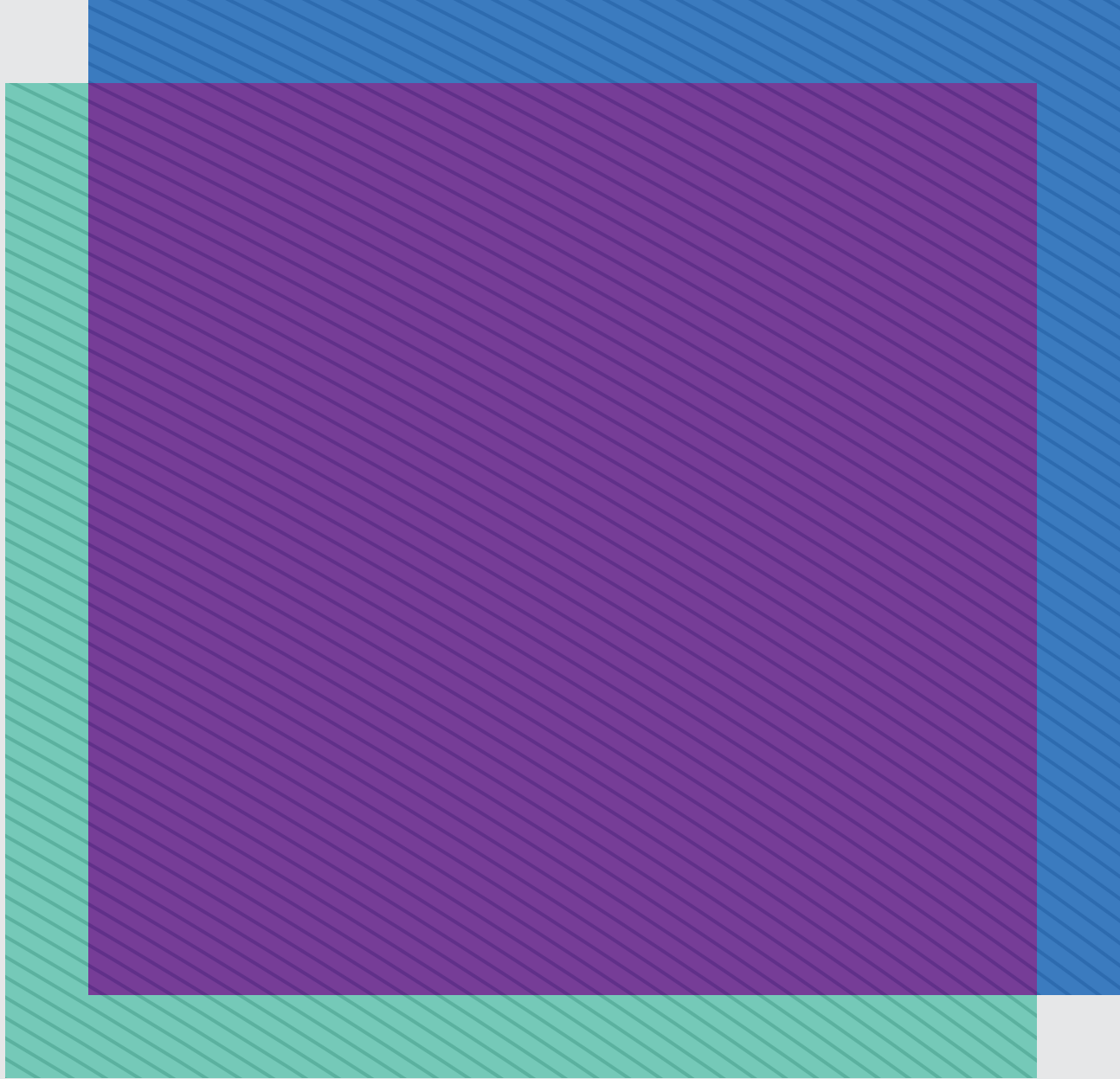
insurers and reinsurers can assess multiple deal configurations quickly, quantify trade-offs with precision and respond to counterparties with data-backed proposals. Furthermore, enhanced integration of actuarial, finance and risk systems ensures that due diligence findings are operationalized without delay, thereby reducing the gap between deal signing and value realization. This agility is particularly critical in competitive bidding situations, where both speed and precision can determine whether a transaction closes successfully.

Post-deal integration also becomes materially faster and more reliable when actuarial operations are modernized. Unified models, automated data pipelines and scalable cloud platforms enable acquired blocks to be absorbed with minimal disruption. This not only reduces operational risk but also maintains service levels for policyholders. Modernized platforms further allow firms to manage treaty performance proactively, adjust capital deployment as market conditions evolve and identify secondary opportunities that extend value creation well beyond the initial transaction.

In essence, modernization transforms the actuarial function into a deal-enabling strategic asset. The frontier of competitive advantage has shifted, since capital alone no longer secures transactions. Instead, precision, transparency and speed, enabled by modern actuarial operations, are increasingly what wins deals. Insurers and reinsurers that invest in modernization today will not merely participate in the market. They will set its pace, structure its most attractive transactions and maximize value for all stakeholders while maintaining sound risk management and governance.

8. Best practices for a more effective close. https://www.ventanaresearch.com/hubfs/Research/White_Papers_Research_Perspectives_etc/Finance/Ventana_Research_Perspective_BlackLine_Best_Practices_for_a_More_Effective_Close.pdf





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