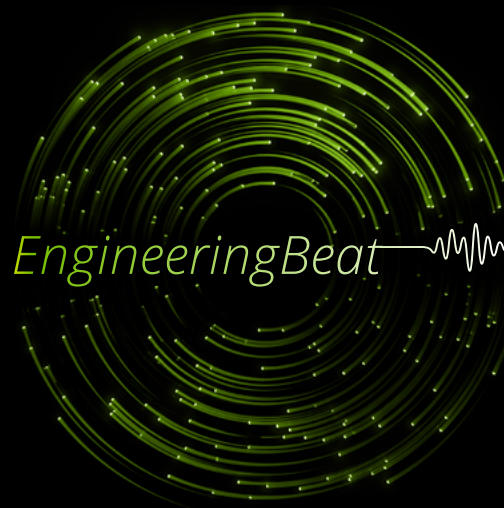


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EngineeringBeat: Transforming with mainframe modernization

Accelerating digital transformation in insurance



The insurance industry is at a crossroads, with providers facing enormous challenges that also offer great possibilities for growth and innovation. But to surmount the obstacles and seize the opportunities, they must be nimble and quick in a dynamic landscape. Legacy mainframe systems, once the backbone of core processes like policy administration and claims processing, now hobble agility and delay response to changes. High maintenance costs and a shrinking mainframe talent pool exacerbate the problem, especially with customers demanding increasingly digital experiences and regulations becoming more complex.

Modernizing mainframe systems provides a solution. By adopting advanced technologies like cloud, artificial intelligence (AI), and big data analytics, insurers can transform functions such as underwriting, claims processing, and customer engagement. This transformation can enhance operational efficiency and improve the customer experience via faster service and more personalized offerings. Modern systems also better integrate with emerging technologies and adapt to regulations, allowing insurers to respond swiftly to market changes and seize new business opportunities in a dynamic, competitive market.

Modernize to overcome critical business challenges

Mainframe modernization isn't a panacea, but it can help insurance organizations solve many industry challenges vis-à-vis digital business transformation and deploy new technologies to spark the innovation and growth that result in lasting strategic advantage.

1 Customer expectations are evolving. Meet them with real-time data access and faster processing.

There's a growing customer demand for fast, personalized, effortless online interactions—whether they're buying a new policy, filing a claim, updating personal information, or reviewing coverage details. They want intuitive mobile apps, 24/7 online support, and immediate responses to questions. On the carrier side, personalized messages can be used to promote claims avoidance. However, mainframe systems struggle to support these personalized, real-time experiences, which can frustrate customers and potentially drive them to competitors.

For example, the demand for more personalized experiences is driving the growth of embedded insurance—which integrates insurance into other purchases (e.g., offering homeowners' policies directly through real estate platforms). Recent [Deloitte research](#) predicts that, by 2030, embedded insurance premiums are projected to surpass US\$722 billion globally.¹ Mainframe systems can make it difficult to offer the connectivity and agility these products require.

By modernizing legacy systems, insurers can more effectively meet evolving customer expectations. Cloud-based platforms enable real-time data access and faster processing, making it easier, quicker, and less expensive to integrate mobile apps and websites into the customer-service function. This integration enhances the customer experience, and it also helps insurers stay competitive by attracting and retaining customers who want convenience and efficiency.

2 Next-gen technology doesn't function well on mainframes. Enable it with cloud-based platforms.

The rapid rise of AI is transforming the insurance sector—especially with the access to advanced analytics it can provide. With AI-assisted analytics, insurers can improve risk assessment, better detect fraud, and customize product offerings. However, legacy systems aren't typically equipped to handle the large volumes of structured and unstructured data that feed the large language models that AI uses. So, organizations are limited in their ability to innovate and respond to evolving risks, expectations, and trends, and make data-driven decisions.

For instance, in 2023 alone, insured losses from natural catastrophes reached US\$95 billion.² The ability to leverage Generative AI and other next-gen technologies could enable carriers to diversify their coverage areas and product portfolios to reduce risk and mitigate losses.

Mainframe modernization enables insurers to use big data analytics and machine learning (ML) to improve analysis of customer behavior patterns, risk prediction, and fraud detection. With AI/ML, insurers can also create more-tailored products and pricing models.

Modern platforms provide a scalable foundation for Generative AI and other next-gen technologies.



3 Regulatory compliance and reporting complexity is increasing. Detangle it with next-gen tech.

For insurers, the regulatory environment is increasingly complex, and data protection laws are becoming more stringent. Legacy systems can make it difficult to adapt quickly to regulatory updates and statutory changes—which increases the risk of noncompliance and penalties.

Technologies such as AI/ML—accessible with modern platforms—can enable insurers to automate and simplify compliance and reporting processes. They can also improve the analysis of regulatory data to find ways to reduce complexity, minimize errors, and ensure timely, accurate reporting—all of which can reduce the potential risk of fines or reputational damage and increases trust.

4 Costs are growing and mainframe talent is shrinking. Address them both with cloud-based systems.

Maintenance costs for mainframe systems have become almost prohibitively expensive due to maintenance and software licensing costs. Further, legacy programming talent is becoming increasingly scarce, as many workers retire and fewer new developers learn outmoded programming languages. Continued reliance on mainframes—both with talent and maintenance—can increase technical debt, which can hobble digital transformation by diverting resources from strategic projects that drive innovation in areas like claims processing, customer engagement, and underwriting. In fact, a recent [Deloitte survey](#) found that 70% of respondents viewed technical debt as a substantial hindrance to digital transformation.³

Modernizing to cloud-based systems can reduce operational costs via more efficient resource utilization and flexible pricing models. It also decreases dependency on scarce legacy skill sets, because modern platforms use newer programming languages and technologies. With modern platforms, insurers also have access to a larger talent pool, which allows them to allocate more resources to developing innovative products that improve the customer experience.



Mainframe modernization in action

How a top European insurance company successfully migrated its mainframe applications to a lean, innovative IT platform.



A leading European insurance provider initiated a project to re-platform its critical mainframe applications to a client-hosted Linux environment. This move was part of its strategic IT simplification and modernization plan slated for completion by 2025. The primary objective was to decommission a 40-year-old mainframe system, as it was becoming too costly and posed business challenges due to its decreasing footprint and reliance on scarce talent.

Deloitte helped the insurer migrate its legacy codebase to modern programming languages using automated tools, migrating databases to updated systems, revamping various interfaces, replacing third-party tools, and updating the scheduling system. The automated code refactoring enabled the efficient migration of 16 applications to a server-based platform, resulting in an 80% reduction in operating costs by eliminating the mainframe and associated licensing fees. The migration provided a competitive advantage, improved agility without business interruptions, enhanced maintainability with minimal user training, and reduced dependency on hard-to-find mainframe skills. The project consolidated outdated technologies into a lean, modern IT platform.

The payoff—potential benefits of modernization

Mainframe modernization can help insurers overcome the challenges we've discussed and realize the following benefits:

Enhanced customer engagement: Real-time digital services like mobile apps, online policy management, and quick claims processing can improve customer satisfaction and loyalty.

Improved regulatory compliance: Upgraded platforms adapt better to evolving insurance regulations and data protection laws, which lessens compliance risks, helps avoid penalties, and facilitates precise, prompt reporting.

Advanced analytics capabilities: Access to AI and enhanced data analytics improves risk assessment, product personalization, customer service, and fraud detection.

Cost savings and operational efficiency: Modernized systems and platforms streamline operations and free up resources for strategic initiatives and innovation.

Faster product innovation and time to market: Agile systems stoke faster development and deployment of new insurance products, enabling insurers to meet evolving customer demands and outpace competitors.

Modernize for a more resilient, competitive future

As insurance organizations navigate their existing core business challenges, it's also crucial to prepare for a quickly evolving future landscape. Digital transformation in insurance plays a key role in this process, with mainframe modernization enabling insurers to improve current operations and innovate for a future that will likely be a more agile, customer-centric ecosystem where advanced technologies enable personalized services, streamlined operations, and proactive risk management. The potential result? More resilience and a competitive edge. With modernization, that future is now.



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Endnotes

1. Puneet Kakar, Manmeet Singh Bawa, and Emily Koenig, Unlocking the strategic power of partnerships in insurance, Deloitte, 2024.
2. Ibid.
3. Kelly Raskovich et al., Tech Trends 2025, Deloitte Insights, 2024.

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