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Adapting to Climate Change

Insurers are facing a new era of climate-driven volatility. As natural disasters become more frequent and severe, companies must modernize their risk assessment, pricing, and management strategies to remain competitive in a rapidly changing landscape.

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Executive Summary

Climate change is no longer a distant threat. It is a growing force reshaping how insurance companies assess risk, set pricing, and serve customers. Rising temperatures, more frequent extreme weather events, and shifting regulatory demands are placing new pressures on the industry. Traditional models built on historical data are proving insufficient, leaving insurers exposed to both physical and transition risks.

To remain competitive and resilient, insurers must adopt a more agile, data-driven approach. Modern analytics can help them model future risks more accurately, design new products, and align their portfolios with today's environmental and economic realities. Meeting these challenges will require not just awareness, but a willingness to act – through the use of modern, more effective technology.

Rising Losses, Rising Stakes: Why Insurers Need Stronger Climate Strategies

In the fall of 2024, Hurricanes Helene and Milton struck parts of Florida and North Carolina, causing widespread damage and stress for insurers and policyholders alike. Helene alone caused more than $60 billion in damages across North Carolina and became the state's costliest storm on record, with over 100 fatalities reported. Milton also produced significant losses, with insured damage estimates ranging from $21 billion to $50 billion.

Despite these losses, insurers faced mounting pressure to control payout levels. In some cases, accusations emerged that some insurers reduced or delayed customer claims in the wake of Helene.

Meanwhile, homeowners in high-risk regions, especially coastal and wildfire-prone zones, are encountering steep premium increases or losing coverage options. Between 2018 and 2022, home insurance premiums in the most vulnerable counties nationally rose by 22 percent, nearly double the overall national average. In Florida, average premiums exceeded $11,000 in 2023 after a 42 percent annual rise.



For insurers, these trends reflect the mounting challenge of navigating both financial exposure and customer dissatisfaction. Addressing climate-driven losses now requires not only stronger risk management but also a renewed focus on technology, transparency, and trustlimate change is no longer a distant threat. It is a growing force reshaping how insurance companies assess risk, set pricing, and serve customers. Rising temperatures, more frequent extreme weather events, and shifting regulatory demands are placing new pressures on the industry. Traditional models built on historical data are proving insufficient, leaving insurers exposed to both physical and transition risks.

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Insurers' Reactions

None of this is a surprise. Insurance executives are already aware of the challenges posed by climate change and are taking action to best mitigate risk. A recent study found that 91% of insurance executives expressed significant concern about climate risk for their business, and 60% plan to invest in enhanced underwriting tools and data analytics for climate risk assessment.

Earnix research is consistent with these findings. In our Industry Trends Report: Insurance Operations in a Changing Industry, we surveyed 400 global insurance executives to uncover their views of climate change.

The research findings show insurers are concerned about how climate change will affect their business:

- 80% of executives believe that climate change will have a significant impact on their operations over the next decade.
- More than 20% of underwriting executives view climate change as the most significant trend confronting their organization.
- 11% of executives report that "the impact of climate change" is the most significant trend affecting their business.
- 75% plan to use new technologies in the next two to four years to improve their ability to anticipate future meteorological trends.

Clearly, insurers recognize that climate change has the potential to reshape their business. Many are moving to adapt, investing in new technologies and reassessing risk models to protect their long-term financial position. But while carriers focus on mitigating exposure and improving operational resilience, their actions are also affecting policyholders in visible and often difficult ways.

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The Growing Disconnect Between Insurers and Policyholders

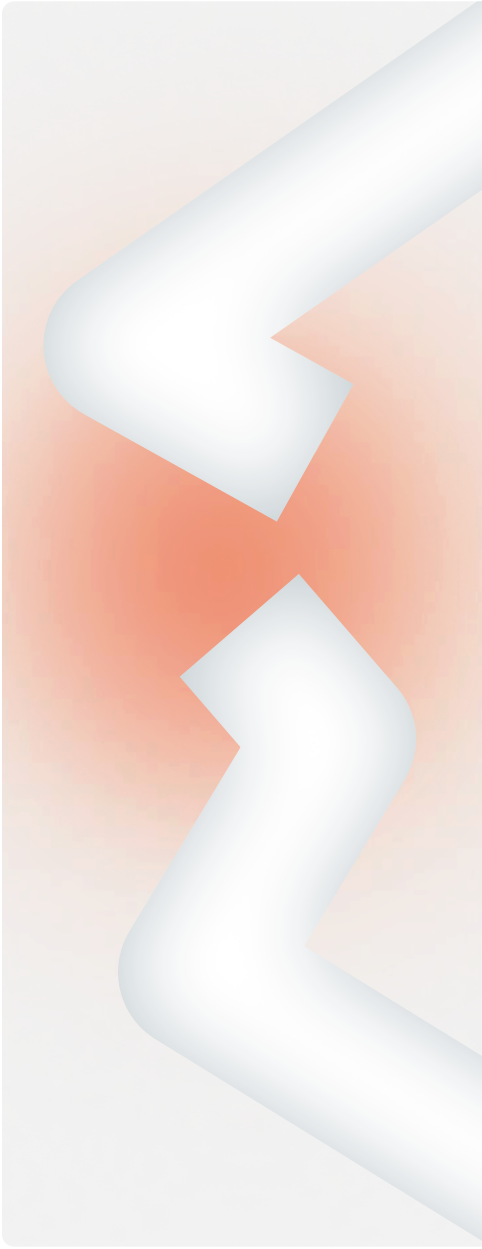
These operational shifts are having unintended consequences for customers. In many cases, policyholders are bearing the brunt of insurers' risk management strategies, which could create long-term business challenges if trust continues to erode.

Recent data reveals a growing trust gap between policyholders and insurers, driven by a surge in claim denials and coverage restrictions. In Texas during 2024, almost half of homeowners' insurance claims were closed without any payment, up from 35% in 2016.

In California, after wildfires destroyed thousands of homes, some were denied smoke and soot cleanup under policies that seemed to promise coverage, prompting class-action lawsuits and accusations of unfair treatment.

The fallout is damaging for insurer reputations. Homeowners and policyholders report deep frustration over unexplained denials and long delays. This environment erodes trust and complicates the process of both retaining existing customers and acquiring new ones.

From a business standpoint, this poses a strategic dilemma. On one hand, insurers must manage profitability by controlling losses and reducing abuse. On the other, persistent customer anger over claim denials hurts brand equity and customer acquisition and can even increase churn. As regulatory scrutiny intensifies, insurers face pressure to restore transparency, improve communication, and align claim handling and other experiences with customer expectations.



The Houston Chronicle, "Nearly half of Texas home insurance claims were closed without payment last year, analysis finds," June 11, 2025.

The Washington Post, "These L.A. homeowners had coverage for fire. But not for the toxins left behind," February 21, 2025.

Complications: The Need for Better Technology

Insurers are now working under tighter timeframes to reassess underwriting models and pricing structures while regulators and investors demand clearer disclosure of climate-related exposures.

Traditional actuarial methods based solely on historical data are becoming inadequate in the face of a rapidly changing climate. Climate risks display nonlinear characteristics and can trigger market stress if not accurately accounted for.

Legacy systems – many of which were built decades ago – are compounding the difficulty. These platforms often lack the flexibility to incorporate real-time data sources, such as satellite imagery or sensor-based weather updates, which are increasingly important in assessing fast-moving environmental threats. In addition, fragmented systems make it harder to synthesize internal and third-party data, slowing down critical pricing and underwriting decisions.

In many cases, core platforms also require extensive IT support for even minor model changes. This limits pricing teams' ability to respond quickly to emerging risks, particularly in high-exposure geographies where conditions are evolving rapidly. The result is a cycle of operational drag and missed market opportunities.

Some insurers face added strain due to siloed data environments and outdated user interfaces. These limitations reduce visibility into risk patterns across lines of business, making it harder to draw enterprise-wide insights or simulate the financial impact of climate-related loss scenarios.

Without advanced analytical tools and more responsive infrastructure, insurers risk mispricing coverage or withdrawing entirely from high-risk markets – similar to what is already happening in parts of Florida and California.



The Strategic Importance of Technology in a Changing Climate



As climate risks continue to reshape the insurance landscape, advanced technology is becoming a central lever for resilience and adaptability. Insurers are increasingly turning to data-driven tools to enhance pricing accuracy, assess exposure in real time, and improve decision-making at scale. These systems provide an infrastructure for dynamic, forward-looking risk assessment, which is especially crucial as past weather patterns become less predictive of future events.

Modern analytics platforms allow insurers to model risk scenarios that go beyond traditional catastrophe modeling. By incorporating a diverse range of structured and unstructured data – from geospatial weather trends to policyholder behavior – insurers can calibrate pricing with greater precision while also identifying gaps in their risk portfolios. This enables more responsive adjustments to premiums and coverage terms, reflecting not just immediate loss experience but the underlying climate risk trajectory.

Technology also supports a more proactive stance in promoting sustainable practices. With connected devices and real-time monitoring, insurers can link premiums and incentives to policyholder behavior, whether that means encouraging resilient construction materials, supporting renewable energy adoption, or reducing emissions through usage-based auto insurance. These innovations do more than improve individual outcomes; they strengthen the industry's ability to support climate resilience on a systemic level.

Technology's Growing Role in Climate Adaption

As climate-related risks increase in both frequency and severity, insurers are under pressure to adapt faster than ever before. Traditional methods that rely heavily on backward-looking data can no longer provide the agility or precision required to respond to today's evolving landscape. Technology has become a strategic differentiator, enabling insurers to more accurately assess risk, price policies, and maintain competitiveness – even in high-volatility environments.



Dynamic Pricing and Rating



One of the most immediate opportunities lies in dynamic pricing. Static, infrequently updated models fall short when risk conditions can shift significantly from year to year – or even season to season. Advanced pricing systems now allow insurers to adjust rates with greater speed and precision, incorporating near-real-time data on weather patterns, exposure zones, and mitigation efforts.

These capabilities help insurers maintain rate adequacy without overburdening customers, especially in regions where climate volatility has driven sharp cost increases.

Modern rating engines also support more granular segmentation, helping insurers assess risk at the property or policyholder level rather than relying on regional aggregates. This approach promotes fairness in pricing while protecting the insurer's portfolio from adverse selection.

Smarter Underwriting



Traditional underwriting practices are increasingly insufficient for climate-driven exposures. Risks such as wildfire, flood, and storm surge are no longer adequately explained by historical averages. Next-generation underwriting tools can incorporate forward-looking data – satellite imagery, geospatial intelligence, and real-time environmental feeds – to deliver a more accurate view of risk at the point of underwriting.

These systems also support faster decision-making. Instead of lengthy manual reviews, underwriters can use automated workflows powered by predictive models, allowing for both consistency and scale. This is especially important in catastrophe-prone areas, where underwriting teams must process large volumes of applications and endorsements during short windows of opportunity.

Predictive and Prescriptive Analytics



Advanced analytics help insurers go beyond prediction into prescription. By modeling the relationship between risk variables and loss outcomes, insurers can simulate a wide range of scenarios, test mitigation strategies, and assess the downstream impact of rate or underwriting changes. This capability improves portfolio management and supports more resilient business decisions.

In addition, data integration allows insurers to combine internal performance data with third-party environmental, economic, and behavioral data sources. This results in more robust insights and greater adaptability to emerging risk factors, from shifting weather zones to regulatory changes.

Generative AI and Emerging Capabilities



Generative AI presents new opportunities for insurers to address climate-related challenges. These tools can automate the development of rating plans, assist in building sophisticated pricing strategies, and generate simulations or reports to support regulatory compliance. Generative systems also have the potential to accelerate model iteration, reducing the time needed to respond to market shifts or regulatory demands.

Used effectively, GenAI becomes more than an efficiency tool – it becomes a means to understand, explain, and adapt to climate complexity. When paired with strong governance and actuarial oversight, these technologies can help insurers act faster, manage risk more confidently, and serve customers more equitably in the face of uncertainty.

Modern technology is giving insurers the tools to respond to climate volatility with greater precision, enabling faster pricing, smarter underwriting, and more effective risk management in an increasingly unpredictable environment.

Building the Capabilities to Act

The industry is aligned on what needs to change. But success depends on more than awareness or intention. It now requires the infrastructure to execute at scale. Insurers must be equipped with flexible, enterprise-grade platforms that can integrate data sources, manage regulatory complexity, and respond to shifting risk in real time.

This means embracing systems built for speed, transparency, and control across pricing, underwriting, and product management. Tools that support simulation, version control, and collaboration are becoming essential, not just for operational efficiency, but for strategic agility.

Technology alone won't solve the climate challenge. But without the right foundation, even the best ideas will be difficult to implement. Those that invest in integrated, forward-looking systems today will be better positioned to adapt, compete, and grow in tomorrow’s climate-driven market.



Summary and Conclusion

Climate change is no longer a distant threat – it is an immediate and compounding risk to insurers, policyholders, and the long-term stability of the global insurance ecosystem. Intensifying natural disasters, from hurricanes and wildfires to floods and droughts, are producing larger, more frequent loss events. At the same time, inflation, labor shortages, and supply chain disruptions have driven up the cost of rebuilding and recovery, making every claim more expensive to settle.

These forces are converging to place unprecedented strain on the insurance industry. Insurers must now adapt in real time, navigating volatile risk patterns while maintaining affordability, availability, and trust. Traditional models, tools, and assumptions are proving insufficient for the challenges ahead. What's needed is a more responsive, data-driven approach that integrates advanced pricing, underwriting, and predictive capabilities to help carriers make more informed decisions and operate with greater agility.

As climate pressures continue to mount, technology will play a central role in helping insurers remain viable, competitive, and resilient in the years ahead.



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Ready to Take the Next Step? Contact us to learn how advanced technology can help your organization manage climate risk with greater precision, speed, and confidence.

Take the next step

Earnix is the premier provider of mission-critical, cloud-based intelligent decisioning across pricing, rating, underwriting, and product personalization. These fully-integrated solutions provide ultra-fast ROI and are designed to transform how global insurers and banks are run by unlocking value across all facets of the business. Earnix has been innovating for insurers and banks since 2001 with customers in over 35 countries across six continents and offices in the Americas, Europe, Asia Pacific, and Israel.