

Tech augmented underwriter: Human in the loop by design

Empowering underwriters to lead as
strategic risk architects in an AI-intrinsic era





Executive summary

Over the past two decades, the role of the commercial Property & Casualty (P&C) insurance underwriter has undergone a seismic shift. Driven by technological advances, data proliferation, regulatory complexity and emerging risks, underwriting has evolved from a paper-based process to a strategic, AI-empowered discipline.

Before we look ahead, it's important to reflect on what has changed, what remains unchanged and why. We explore what technology has solved, where it falls short and what capabilities are required to build a resilient and intelligent underwriting function.

How underwriting has evolved:

Traditionally, underwriting centered on evaluating risks and determining policy terms. Today, its scope has expanded dramatically, transforming the role and tools of the underwriter:



From risk assessors to strategic advisors

- **Proactive risk management:** Underwriters now anticipate emerging risks, using data-driven insights to manage portfolios more effectively, shifting from reactive to forward-looking engagement.
- **Consultative approach:** The role has evolved to include working closely with brokers and clients to co-create tailored risk solutions, replacing the one-size-fits-all model.

The adoption of technology has been pivotal in reshaping underwriting processes:

- **Automation and AI:** Tools like RPA, NLP, and predictive analytics streamline repetitive tasks and enhance decision quality.
- **Underwriting workbench:** Centralized digital platforms improve submission intake, reduce time-to-quote, and enable portfolio oversight.



Technology's role in reshaping underwriting



Insurance products for a digital, risk-intensive world

As digital risks evolve, underwriting has adapted by enabling new product innovations:

- **Cyber insurance:** Addressing cyber threats and data breaches.
- **Parametric insurance:** Covering risks with predetermined triggers.
- **Embedded insurance:** Seamless integration into digital platforms and customer journeys.






The shift to real-time data and continuous engagement has transformed the underwriting model:

- **Ongoing risk evaluation:** Underwriters continuously evaluate risk using IoT data, third-party sources, and customer interactions.
- **Dynamic adjustments:** Adjustments are made in real time, aligning with live risk indicators and evolving customer needs.



From static to real-time: The shift to continuous underwriting

Underwriting evolution snapshot (2000 – 2025)

Period	Role evaluation	Tech landscape	Impact
2000	 Manual Risk Gatekeeper	Paper ACORD forms, faxed submissions and siloed spreadsheets	Manual broker communication; slow turnaround; siloed processes
2005	 Digital Migrator	Early PAS systems, email intake, basic rule engines	Digitized workflows; duplication and data re-entry challenges
2010	 Data-Enhanced Analyst	Third-party data, dashboards, predictive modeling	More analytical workflows; manual oversight still required
2015	 Digitally Augmented Risk Advisor	RPA tools, early ML models, IoT inputs and digital broker portals	Focus on complex risks; digital broker submissions
2020	 Strategic Portfolio Partner	AI-supported risk triage pilots, portfolio strategy, ESG, climate and geopolitical risk inputs	Portfolio management; model feedback; cross-functional strategy
2025			



What's improved

- **Faster turnaround:** Digitized intake, straight-through processing have significantly reduced quote times, from days to mere hours in many cases.
- **Improved visibility:** Integrated dashboards and third-party data now support more holistic risk assessment, even with human-led decisions.
- **Responsive pricing:** Underwriters can now apply dynamic risk factors (e.g., industry shifts, location-level trends) to tailor pricing within defined thresholds.
- **Enhanced broker engagement:** Streamlined portals and digital submission tools have improved transparency and reduced delays.

What remains unsolved in modern underwriting:

Details	Challenge	Impact on underwriters
Evolving risks, lack of reliable data, hard to price accurately as lack long term historical data	Complex risk pricing (cyber, climate, etc.)	<ul style="list-style-type: none"> • High uncertainty • Risk mispricing
Speed vs accuracy trade-offs; inconsistent data formats	Broker relationship friction	<ul style="list-style-type: none"> • Slows cycles • Increases manual work
Unstructured, incomplete intake	Poor data submission	<ul style="list-style-type: none"> • Manual corrections and rework
Legacy systems across teams don't talk	System integration gaps	<ul style="list-style-type: none"> • Workflow duplication • Loss of insights
Inconsistent global standards	Regulatory complexity across borders	<ul style="list-style-type: none"> • Delays • Increased legal dependency
Retiring workforce and poor knowledge systems	Knowledge drain	<ul style="list-style-type: none"> • Loss of experience • Onboarding strain
AI struggles with subjective or ethical variables	Lack of contextual judgment in AI	<ul style="list-style-type: none"> • Human oversight still essential

Why transformation alone isn't enough

While underwriting transformation has delivered notable gains in speed, consistency, and efficiency through digitization and automation, it has not fully addressed deeper structural challenges. These include inconsistent data standards, regulatory fragmentation and the complexity of modern risk modeling.

This section explores the limitations of modernization efforts and the friction that arises when transformation is pursued without a holistic view of the underwriting ecosystem:

- **Over-automation:** Rule-based engines mispriced quality risks due to lack of human oversights.
- **Opaque AI models:** Black-box algorithms have eroded trust due to limited explainability.
- **Siloed systems:** Fragmented technologies have failed to integrate underwriting claims, compliance workflows.
- **Alert fatigue:** Excessive and irrelevant system notifications have distracted underwriters and reduced force on high-value tasks.
- **Organizational silos:** Limited cross-functional integration across underwriting, pricing, claims and actuarial functions has hindered strategic alignment.
- **Change management:** Underinvestment in change management led to adoption friction—not due to inadequate tools, but to unchanged behaviors, goals, and incentives.

Designing human-centered, AI-augmented underwriting



To move forward successfully, underwriting transformation must strike the right balance between machine efficiency and human expertise. Rather than replacing underwriters, technology should enable them streamlining tasks while elevating decision quality and strategic contribution.

The following principles help ensure future-ready underwriting:

- **Human-in-the-loop design:** AI should enhance, not replace underwriters. Human oversight ensures decisions remain contextual, ethical, and aligned with business goals.
- **Explainability-first AI:** AI models must be transparent, auditable, and easy to interpret, enabling trust and accountability across teams and regulators.
- **Data quality and governance:** Accurate, standardized, and well-governed data is the foundation of effective underwriting. Clean data reduces bias and drives better decisions.
- **Cross-functional platforms:** Integrated platforms across underwriting, claims, pricing, and operations enable better collaboration, faster decisions, and stronger outcomes.
- **Talent transformation:** Underwriters must evolve with technology, gaining skills in data, digital tools, and consultative engagement to become strategic partners.

The underwriter of the future: Strategic and data-driven

Today's commercial P&C underwriter is a multi-dimensional expert, part—data analyst, part relationship manager and part strategist. As AI capabilities deepen and risks grow increasingly global and complex, underwriters will play a pivotal role in driving portfolio growth and resilience.

Getting underwriting right will require more than automation. It demands a synchronized effort across systems, data, people and culture positioning underwriters the true orchestrators of risk in a digitally driven world.



Looking ahead

In our next whitepaper, we'll focus how to operationalize these principles—what it takes to build underwriting models and workflows that are both tech-enabled and human-centered. This will include a structured implementation roadmap for creating AI-augmented underwriting systems that deliver real business value.

Key references

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