

WHITE PAPER

The Future is Here: Why Now is the Time to **Engineer Underwriting**

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Engineering the Underwriting Future

Introduction

Underwriting workbench solutions are finally a reality and can enable sophisticated new capabilities, shortening the path to innovation and high performance.

During the last decade, insurers have made significant investments to upgrade their technology. But one part of the business — underwriting, the most complex and least standardized function — stands as the last frontier for tech-driven transformation. Following almost three decades of experimentation with desktops, workstations and workbenches, the time is now to transform the business of underwriting as componentized solutions are viable and pressure for profitable growth has never been greater.



A Brief History of Underwriting Technology

Bringing modern technology to underwriters and underwriting teams has been a journey of discovery for most insurers – and a challenging one.

Early efforts focused on document handling and rigid workflows were coded into document management systems. These significant investments failed to deliver on expected returns and business process efficiencies. In fact, insurers with these solutions found their underwriting teams reverted to work-around processes outside of the document solution to handle necessary tasks.

First generation underwriting workstations were client-server technologies that started to bring efficiencies to underwriting teams by aggregating information into a single user interface. That helped underwriters navigate multiple processing systems (e.g., clearance and registration, work tracking, policy administration). Document scanning started to eliminate paper and centralize document access. Still, the underwriting process remained largely manual and inconsistent, with data buried in vast amounts of documents and legacy systems.

The race to the web and Y2K provided distractions in the late 1990s. The focus on online commerce and the ticking

clock on operational viability of legacy systems de-prioritized technology enablement for underwriting functions. The early 2000s saw the birth of the first packaged solutions for underwriting from the vendor market. These systems brought important functionality designed to automate routine tasks, centralize account underwriting, capture risk information, integrate with external data sources, systematize support for underwriting notes and correspondence, and address gaps of policy administration systems (PAS).

Fundamentally, these vendor solutions were based on the principle that underwriting processes and decision making could be standardized across underwriting departments and products. In reality, these solutions were extensively customized for each insurer as well as each underwriting team. Lesson learned: the challenges with these packaged solutions had less to do with the modern (at the time) technology architecture and out-of-the-box functionality and more to do with the variability of underwriting processing and expectations.



At the same time, these vendor workstation solutions were gaining traction, PAS vendors continued to profess that their technology supported the underwriting decision processes with workbench-like functionality. Insurance IT teams believed these systems were intended for underwriting functions and therefore must support those needs. The notion that a separate system would need to integrate with the range of (still) legacy policy systems was not popular with insurer CIOs because of the increased complexity of the application environment. The policy administration vendor sales pitch was compelling to CIOs: the PAS supports the end-to-end underwriting process. Industry analysts supported this conventional thinking with annual surveys that largely echoed the vendor rhetoric. Underwriters knew better, but the absence of a well-defined solution blueprint and distinct, viable vendor market, meant the vision of a true underwriting workbench for underwriters was not yet a reality.

In the past several years, with this gap in viable market options, some attempts were made to extend customer relationship management (CRM) solutions to take on the complex workflows and data structures of underwriting.

But those solutions proved to be expensive mistakes. More recently, the emergence of low code/no code (LCNC) vendor solutions has refreshed hope and enthusiasm that these tools might be the answer for delivering underwriting workbench functionality.

Certainly, with the wave of second-generation agent and customer portal investments to advance the digital engagement between insurers and their distribution partners and insureds, LCNC has proven to bring both speed and lower cost delivery to these gateway solutions. Many LCNC solutions are efficient tools for rapid development of screens and digital workflows. They have introduced the benefits and challenges of multitenant SaaS platforms to the insurance industry. Some insurers have built entire quote-to-issue solutions using LCNC, primarily focused on speed-to-market deployment of greenfield products. But to date, few insurers have extended use of LCNC into the complex needs of underwriting despite the marketing press.



New Possibilities & New Tech Signal a New Era in Underwriting

So, what has changed? Why is the time now for these underwriting workbench solutions? How will these past challenges be addressed? What will be the new challenges presented by today's technologies and business demands? Can a common solution really serve the diverse products and processing needs across underwriting teams? Can that ever be a global reality?

Even today, there is not a single, commonly understood definition of an underwriting workbench solution. While industry analysts have started to recognize this as a distinct application in the insurance technology landscape, the underwriting workbench fails to be consistently defined — even by insurers themselves. But maybe that's the point. The underwriting workbench solution is not a single, monolithic system like most of the insurance technology platforms. Systems for policy administration, billing, claims, reinsurance and ERP have conformed to a largely consistent set of well-defined features for many years. There are clear table stakes for these systems with little room for differentiating capabilities. Insurers have come to expect robust out-of-the-box automation, interoperable architectures and high levels of functional configuration. Underwriting workbenches will not follow this pattern of shrink-wrapped automation.

With underwriting, technology needs are driven by a range of considerations, including product complexity, risk complexity, organizational structures, third party data and data service requirements, and operating models. Unlike the binary processes of policy rating, quoting, booking and issuance, underwriting is inherently dynamic and account oriented. Underwriters, especially commercial and specialty lines

underwriters, typically handle multiple lines and work on accounts with multiple policies and often complex operational exposures. While profitability of each policy matters, profitability of the overall customer — accounts made up of multiple insureds and policies — also matters.

This type of account underwriting requires different approaches to workflows, data capture and user experience than offered by policy administration systems. There is no predictable sequence or finite data in account underwriting; underwriters continually assess the acceptability and quality of the risk as they learn more about it. The influx of information from a range of sources and discussions is iterative and drives iterative decision-making. Operating model variations, grounded in product and risk complexity, also influence levels of targeted automation. Underwriting workbench solutions must have flexibility in workflows, data capture and business rules to account for both low-touch underwriting and higher-touch underwriting models. Similarly, workbench solutions must support organizational variations driven by product, customer, industry and channel and different models for delegating to underwriting and operations teams.

Can a single solution really address the full range of requirements and expectations with this amount of variation, unpredictability and iterative processing?

Fundamentally, taking full advantage of the latest generation of underwriting workbench solutions requires a paradigm shift. Instead of thinking of software packages and tools (e.g., LCNC), insurers should embrace an engineering approach to solution development. New underwriting workbench solutions will be hybrid, combining customization with third-party software components and integrating with existing tools and components. An engineering-led approach provides the necessary discipline for designing and operating effective [componentized architectures](#).

The solution design must address critical elements of the business of underwriting (including key differences across products and operating models that will drive design variation) and codify the component architecture for design clarity. Here are the eight critical elements to solution design:

01

PRODUCT COMPLEXITY

A common and cohesive product architecture is critical and underpins successful underwriting solutions. This foundational capability enables reusability of screens and data, as well as extensibility of rules and functionality.

02

RISK COMPLEXITY

A clear data topology and rules architecture will guide variations in underwriting decision processes and help achieve goals for operating model automation. Risk complexity drives process complexity and the goal for the underwriting workbench is to guide and structure the artful aspect of underwriting risk assessment and solution creation, rather than seeking to remove risk complexity variations altogether.

03

DYNAMIC PROCESS MODEL

Instead of rigidly defined and prescriptive workflows, the underwriting workbench should allow a user-driven approach that enables the dynamic and iterative decision behaviors, while ensuring key process milestones (e.g., operational KPIs, underwriting authority referrals, regulatory compliance) are completed.

04

PORTFOLIO & TRANSACTIONAL VARIATIONS

Underwriting is both transactional (driven by the rhythm of submissions, renewals and mid-term adjustments for individual risks) and portfolio-oriented for aggregate risk analysis and comparison. Data access and task automation need to reflect these different approaches and user experiences.

05

INTEGRATION & DATA OWNERSHIP

With overlapping use of policy, customer and location data between the underwriting workbench and policy administration systems, a proven integration design is crucial to manage the flow, ownership and system of record business rules. As top PAS vendors further evolve their system architectures and expose product definition, document generation and task management as enterprise services, the integration of underwriting workbench solutions will necessarily evolve, too.

06

FUNCTIONAL BLUEPRINT

Underwriting workbench solutions must be grounded in a business capability blueprint that outlines priority business functions and a functional component blueprint to support the range of capabilities and inform the technology components required. The functional blueprint helps identify and organize commonality and differences across underwriting needs, define important functional component boundaries and inform the technology component blueprint.

07

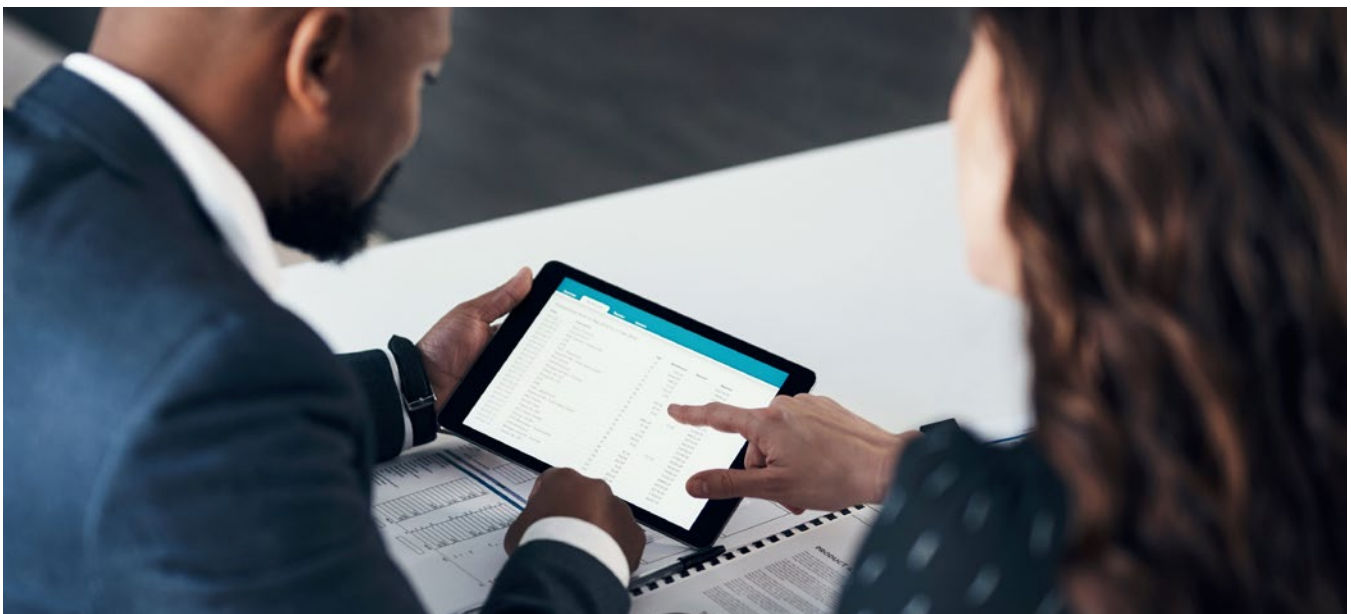
TECHNOLOGY BLUEPRINT

The technology blueprint outlines components that fulfill the functionality and services required for the underwriting workbench solution, as well as guide options for leveraging existing capabilities, integrating third-party system components and developing custom components. This technology blueprint will also help clarify optimal use LCNC, rules engines, document management and other tools in the overall solution.

08

SITE MAP

A clearly defined site map can outline common and different processes, screens, functions and data usage, and facilitate alignment across diverse underwriting groups. This strategic approach to underwriting workbench solution design also prepares insurers to extend globally. Unlike policy, billing and claims systems that are subject to local regulatory rules, underwriting workbench solutions can flex globally as long as variations in product, process, data and channels are addressed.



The Emerging Promise of Generative AI

Underwriting workbench solutions will drive much of the adoption of GenAI by insurers, not only for process efficiencies but also for decision-making effectiveness.

There are a range of important underwriting use cases across functional, conversational, visual and analytical AI. Today's proof-of-concept exercises are expected to be operationalized and scaled in the future. Targeted benefits include new levels of accuracy in digital ingestion, greater efficiency in semantic searches and summarization of public and private information sources, and support for more rapid and articulate communications.

Development of proprietary large language models (LLMs) and integration of text, image and audio will likely advance underwriting risk analysis to even higher levels of performance. GenAI will become the underwriter's co-pilot of the future and will accelerate the pace of learning for new underwriters. Underwriting workbench solutions will require the next generation of application programming interfaces (APIs), microservices architecture and event architectures, as well as GenAI studio tools to orchestrate across LLM and other APIs with curated prompt queries for greater efficiency.

Underwriters can engage with GenAI tools for foundational risk assessment and to identify potential market gaps and opportunities.

OCR Can you please show me the risk exposure that I need to underwrite insuring an oil rig for property and liability insurance?

Underwriting insurance for an oil rig, whether it's for property or liability coverage, involves assessing various risk factors to determine the appropriate premium to charge. The risk exposure can vary depending on the location, type of rig, and other specific details, but here are some key factors that underwriters typically consider:

- Location:** The location of the oil rig is a critical factor. Is it located in a stable and safe geographical area, or is it in a region prone to natural disasters such as hurricanes, earthquakes, or tsunamis? Different locations carry different levels of risk.
- Property Value:** The value of the oil rig itself, along with any associated equipment and structures, is a key component of risk assessment. Underwriters will evaluate the replacement cost of the rig and related assets.
- Maintenance and Safety Procedures:** The maintenance and safety procedures in place at the oil rig are crucial. Regular inspections, safety protocols, and risk management practices can significantly affect the risk exposure.
- Environmental Risk:** Oil rigs are subject to environmental risks, such as oil spills. The underwriter will assess the risk of environmental damage and the measures in place to prevent and mitigate such risks.
- Fire and Explosion Risk:** Oil rigs are at risk of fires and explosions. Underwriters will consider the fire prevention measures and fire-fighting capabilities on the rig.
- Third-Party Liability:** Liability insurance is crucial for oil rigs as accidents can result in damage to third parties, including pollution liability, bodily injury, and property damage. The underwriter will assess the potential liability exposure.
- Regulatory Compliance:** Ensuring the rig complies with all relevant industry and government regulations is important. Non-compliance can lead to increased risk exposure.
- Financial Stability of the Operator:** The financial stability and track record of the company operating the oil rig are important. Underwriters may assess the operator's ability to respond to and recover from losses.
- Historical Loss Data:** Past loss history can be indicative of future risk. Underwriters will look at any previous insurance claims and losses related to the oil rig.
- Security Measures:** The security measures in place to protect the rig from theft, vandalism, and sabotage will also be evaluated.
- Business Interruption:** Underwriters will consider the potential financial impact of business interruptions caused by accidents, equipment failures, or other incidents.
- Political and Geopolitical Risks:** If the oil rig is located in a region with political instability or geopolitical tensions, these factors can affect the risk exposure.

OCR Provide different coverage types in IP insurance products. Provide in a table format by Coverage Type, Description, What Coverage Should Offer, Current Insurance Carriers of the product/coverage.

Intellectual Property (IP) insurance typically covers a range of risks associated with protecting intellectual property rights. Here is a table summarizing different coverage types in IP insurance products:

Coverage Type	Description	What Coverage Should Offer	Current Insurance Carriers
Infringement Defense	Protects against claims of IP infringement	Legal defense costs, settlement or damages payments	Chubb, AIG, Hiscox, Zurich
Enforcement	Covers legal costs to enforce IP rights	Legal expenses for pursuing infringement claims	Chubb, AIG, Zurich, Allianz
Abatement of Infringement	Covers the cost of stopping an infringement	Costs to halt infringement, including court-ordered actions	Chubb, AIG, Zurich, Allianz
Defense for Unauthorized Use	Defends against claims of unauthorized IP use	Legal defense costs if someone uses IP without permission	Chubb, AIG, Hiscox, Allianz
Loss of IP Value	Compensates for diminished IP value	Pays for lost revenue due to IP devaluation	AIG, Chubb, Hiscox, XL, Catlin
IP Portfolio Management	Covers the cost of managing an IP portfolio	Legal, administrative, and renewal expenses for IP assets	Chubb, AIG, Zurich, Hiscox
Cyber Liability	Protects against IP theft or cyberattacks	Costs of data breach response, litigation, and damages	AIG, Chubb, Hiscox, Travelers
Media Liability	Covers IP-related issues in media and advertising	Legal costs related to IP infringement in marketing and media	AIG, Chubb, Hiscox, Zurich
Patent Infringement Search	Covers the cost of pre-litigation searches	Expenses for researching prior art and potential infringement	Chubb, AIG, Hiscox, XL, Catlin
Copyright Infringement	Protects against copyright violation claims	Legal defense and damages for copyright infringement	Chubb, AIG, Hiscox, Zurich

Underwriting as a Conduit for Bimodal Transformation

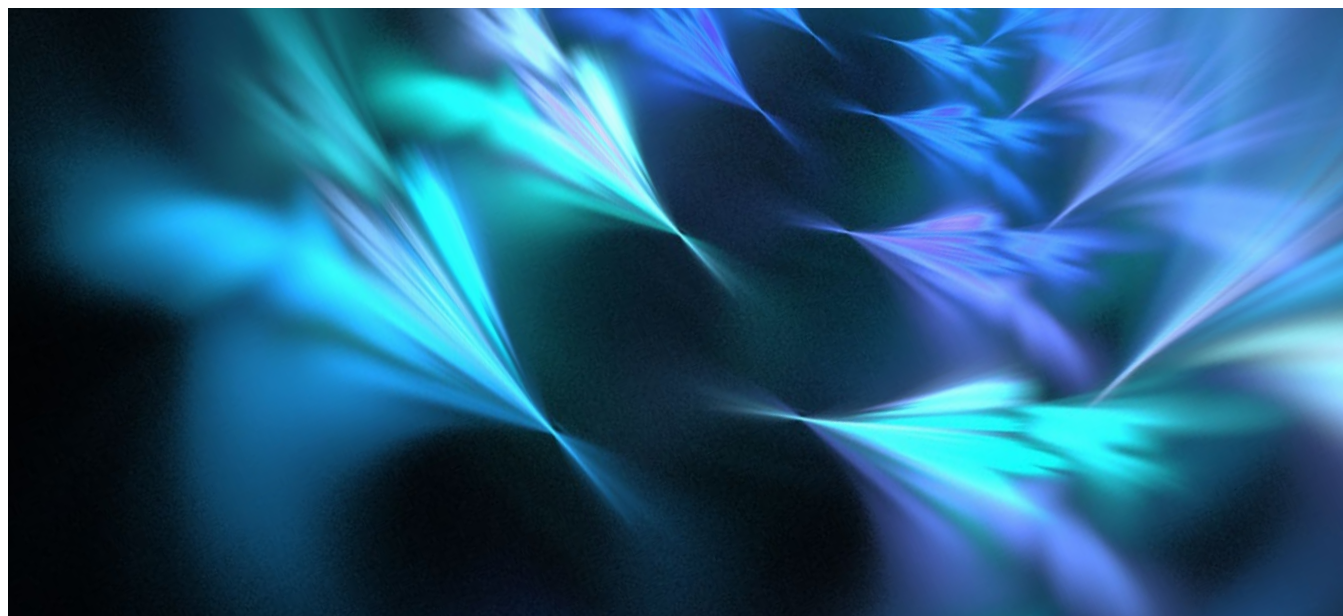
Underwriting workbench solutions are a key part of the [bimodal transformation needed for insurers](#). No longer can these solutions be viewed as nice-to-have or optional; they must be viewed as core and mandatory in order to position insurers for sustainable, profitable growth and efficient rules-based processing. The future of insurance places underwriting as pivotal in driving the waves of strategic change.

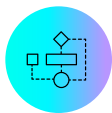


Virtual (Re)Insurance Ecosystems

Underwriting will be central to managing the ecosystem relationships and stream of commerce from new forms of data exchange, new business models, new products and services, new partnerships, digital engagement and fluid capital deployment. Underwriting's market leadership role in the future will require pervasive connectivity in order to transform value delivery. Ultimately, that will position underwriting as the nerve center of ecosystem strategies, growth opportunities and innovation.

Engagement with specialty providers (e.g., InsurTechs) and other third parties, along with the integration of entirely new data streams, will enable insurers to collaboratively design and co-create products and tailor services in a sophisticated fashion. Harnessing the power of ecosystems requires insurers to break down barriers to collaboration and partnering — especially with regards to perceived competitors — and underwriting must lead the way. The underwriting workbench solution positions insurers to take full advantage of APIs and cloud-based architectures to share data efficiently and securely and accelerate decision-making processes.

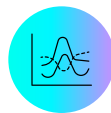




Decision Architectures

Advancements in the science of underwriting will propel new levels of performance with new forms of data fueling robust insights and timely modifications to business rules. Sophisticated decision architectures are comprised of layers of products, processes, data and rules. They guide the lifecycle of decision processes in underwriting, including risk appetite, submission triage, information retrieval, risk assessment, account handling, risk pricing, risk structuring, coverage wording, predictive models, regulatory compliance and account servicing. Institutional knowledge is codified through a business rules architecture, which is primarily owned by the underwriting workbench.

Decision rules align with a strategic rules taxonomy and are enabled through the workbench solution by leveraging different technology components and configuration capabilities. The decision architectures of the future will form the backbone of an insurer's frontline decision-making, where increased reliability and predictability will produce higher business performance and consistent outcomes.



Continuous Insight Generation

In the future, underwriting will be fueled by continuous streaming data and ongoing insights for better underwriting and risk engineering. Underwriters stand to gain step-change efficiencies with the underwriting workbench integrated with modern event architectures and data platforms that will synthesize the streaming data, leverage GenAI and semantic rules to summarize and interpret data patterns and notify underwriters in real-time of important risk insights. Building upon years of experience with real-time flows of telematics, weather and climatological data for fleet and parametric insurance (e.g., crop), future data streaming will bring key information to underwriters from smart buildings and cities, smart equipment, smart devices and wearables as well as curated third-party sources and public domains.

Underwriting decision processes will no longer be episodic, point-in-time and reactive; rather they will be defined by continuous risk monitoring and proactive risk management based on fluid, always-on data flows and insight generation coming through the underwriting workbench. The days of fetching data tied to specific policy transactions will shift to a constant continuum of intelligence.

Underwriting Workbench Solutions Will Become Table Stakes for Top Performers

Underwriting workbench solutions must serve as the primary working environment for underwriters and their teams.

They are central hubs for all external risk data, including structured (e.g., applications, schedules of value) and unstructured (e.g., emails, social media, news feeds) data. And they capture and channel data housed in other core systems (e.g., policy administration, billing, claims, data platforms) in forms that are easier for underwriters to use. Underwriting workbench solutions also serve as the unified “home screens” for both risk and portfolio underwriting, enabled with:



Digital ingestion of documents and data



Centralized work management including task assignment, diary and file notes



Team-based account handling and collaboration



Automatic retrieval and pre-filling of customer, risk and policy data



Integrated document management, correspondence and rules-based pre-filling of templates



Dashboards and KPIs for benchmarking and real-time performance analytics

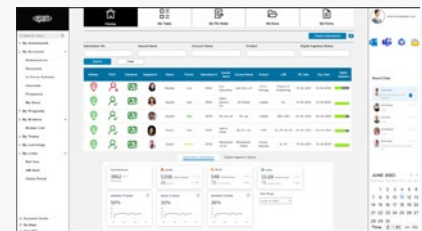
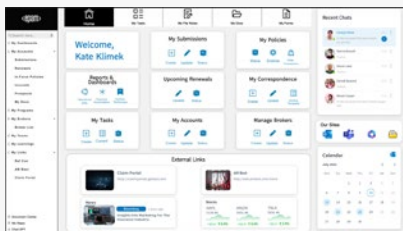


Rules-driven risk assessment



GenAI copilot assistance

Early adopters of underwriting workbench solutions have benefited from more precise and insight-driven risk assessment, more efficiency in task management and team delegation, and higher levels of collaboration and compliance. Looking ahead, these solutions will become the essential front office technology because they allow underwriters to harness the power of expanded data volumes and greater technology firepower to operate more efficiently, engage more effectively in the market and consistently contribute to shareholder value.



Engineering the Underwriting Future

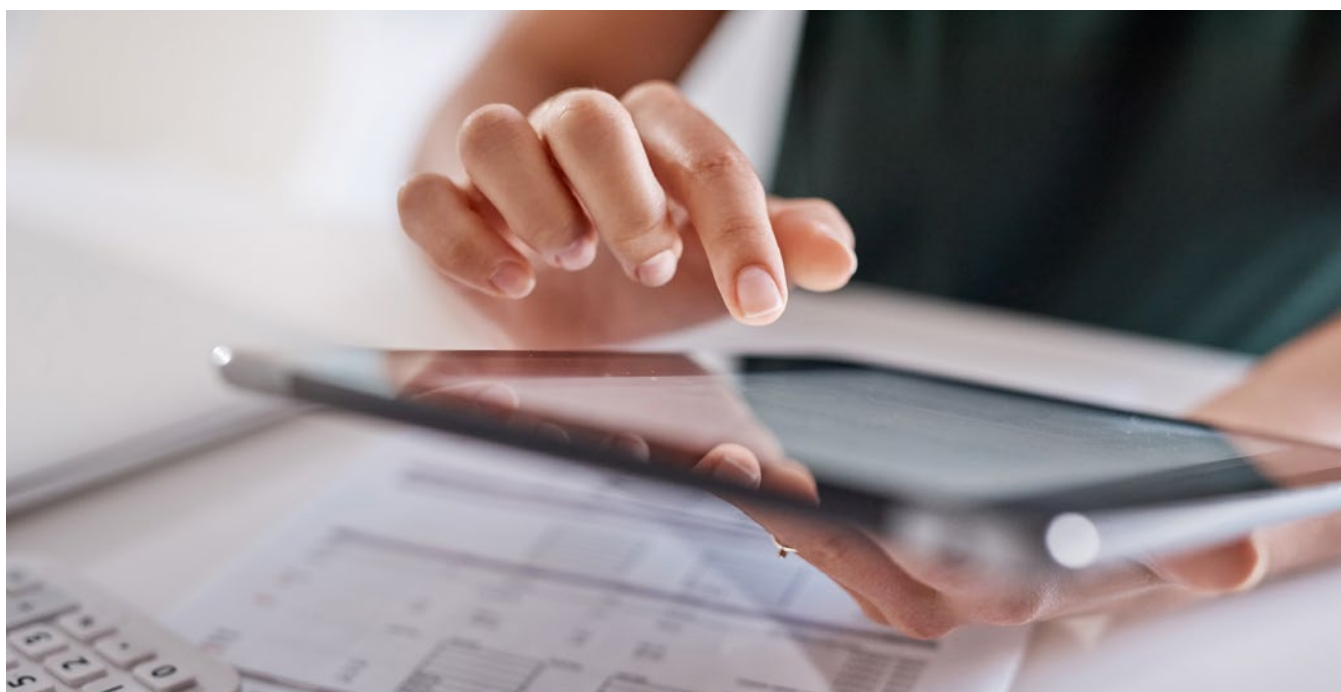
Some industry veterans may think these technologies sound too futuristic, or perhaps even too good to be true. Others remain skeptical about successfully engaging underwriting leaders to develop a common solution across business units. And many business and IT leaders are understandably risk averse, given unsuccessful previous attempts at underwriting transformation, spectacular implementation failures and disappointing business results.

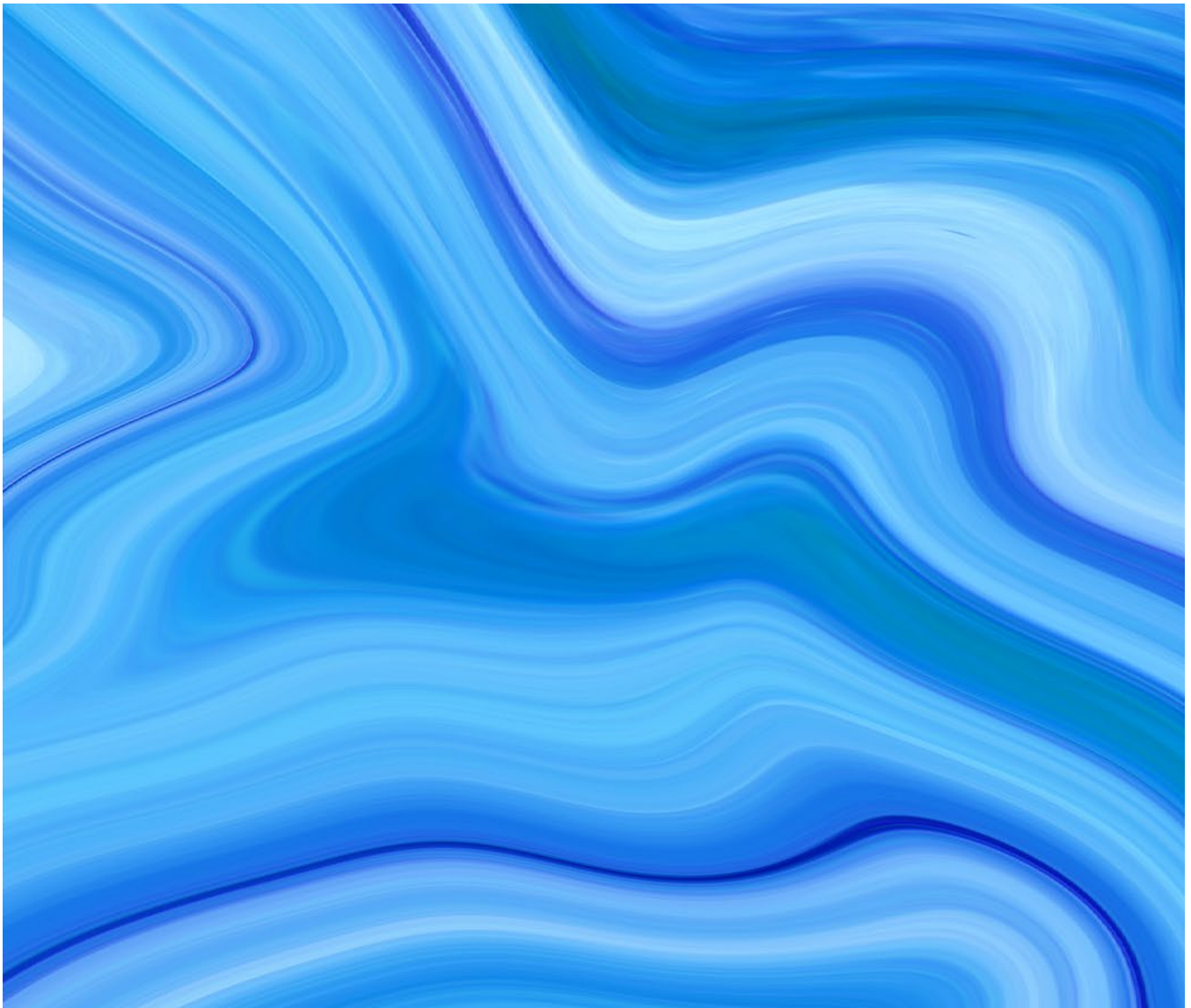
Despite those legitimate concerns, there are examples of successful early-day solution deployment. More importantly, insurers can no longer afford to wait to address this critical function in the enterprise; the explosion of data, pace of technology adoption and competitive market pressures demand insurers bring underwriting into the future.

The key to successful underwriting workbench solution development starts with proven blueprints, product and rules architecture design, technology component architecture design, intelligent integration design and thoughtful delivery roadmaps. These solutions require an engineering mindset and holistic approach to integrating custom components, third-party software, user experience and external data. Business must evangelize the vision and select leaders and champions to partner with IT, while IT must bring strong

architects and assemble engineering talent with a track record of building these solutions.

Underwriting workbench solutions are a critical part of the bimodal transformation, enabling both more effective core processing and the development of differentiating capabilities. And, while many insurance executives and industry analysts speak of the future of underwriting as if it's still a distant prospect, the reality is that the data-driven, AI-enabled future has very much arrived. In fact, it is already playing out in the most advanced and top-performing underwriting groups. The call to action is urgent and clear; insurers need to build resiliency and high performance in their underwriting teams supported with underwriting workbench technology for today's business outcomes, not just tomorrow's.





Headquarters

41 University Drive, Suite 202
Newtown, PA 18940, USA

P: +1-267-759-9000

F: +1-267-759-8989

