Digital Underwriting: How to Drive Intelligence and Speed Across the Underwriting Life Cycle

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Introduction

The insurance industry is on the verge of unprecedented change – change that will drastically shift the very nature of how risk profiles are created. Societal and demographic transformation are compelling the industry to reconsider its entire approach to risk. Take, for example, workers' compensation: how do insurers assess the risk of thousands of people working from home instead of offices? Or auto insurance underwriting: how is risk assessed when people forego vehicle ownership opting for ride sharing instead? Does all risk shift to the ride-hailing companies? Given these circumstances, the insurance industry will have to change its approaches, creating modular products that adjust coverage as customer needs shift.

Given the fast-evolving nature of the business, insurers are increasingly recognizing the importance of agile underwriting capabilities and adding skills beyond risk selection and pricing to create a more holistic set of competencies that include hard and soft skills, data-based risk judgment frameworks, and rigorous portfolio management.

Added to these pressures, insurance companies are operating in a highly challenging and competitive environment in which many macro, micro, and industry-specific factors are impacting policy decisions, including:

- High interest rates, an impending economic slowdown, and high inflation
- Pricing pressures
- The emergence of digital-native challengers
- Lack of skilled talent, attrition, and rising wages
- Increasingly large data sets coming from connected IOT devices
- Fraudulent claims
- Cybersecurity risk as the business is increasingly digitized
- The impacts of climate change
- Demand for online distribution channels to enhance CX

Given legacy technology evolving digital-first distribution strategies, insurers are realizing that existing operational inefficiencies will have a cascading impact on their future performance. Further, as the industry moves from a catalog-based product development mindset to hyper-personalized offerings that cater to the ever-changing custom needs, insurers need to become more agile in their decision-making processes. Taken altogether, these changes are driving significant digitization in underwriting.

In this report, we describe the scope of digital underwriting and explore how insurers are embracing digitization in underwriting.

Current challenges in underwriting

Today's underwriter spends majority of their time in low value-add activities like servicing, manual data entry, data cleaning and standardizing, customer follow-up, meetings, and administrative work. The challenges to this work process are many:

- **Low quality of data**
  Data available to underwriters is stored and retrieved from multiple systems and is not standardized. An underwriter needs to go through heaps of irrelevant data to identify valuable information, which then needs to be cleaned before it can be used. Often, vast amounts of data also need to be retrieved from the client and manually entered. Third-party data integration into legacy infrastructure and processes also is a challenge. All this manual data ingestion opens the door to human error in an overly critical and judgmental process. Furthermore, it is not well positioned to serve future needs.

- **Poor customer experience**
  Data available to underwriters is stored and retrieved from multiple systems and is not standardized. Manual underwriting is rife with long manual paper forms, complicated fine print, omissions, and errors. Clients often must wait as many as five days to get a quote after submitting their paperwork. Due to a lack of customization, customer questionnaires often vary by channel making it very difficult to enter and analyze data. Limited or no data validation and remediation at the start of the process means significant follow-up throughout the process, wasting employee time and annoying customers.

- **High operational costs**
  Underwriter costs per hour range from $50 to $150 depending on the geography. The entire process takes anywhere from one to a few weeks (or more), making underwriting very expensive. Given that about half of an underwriter's time is spent on low value-add activities, this high operational cost is not justified. Add the fixed costs and scaling up underwriting operations becomes an even more expensive proposition.

- **Lack of talent availability**
  The insurance industry employs millions of people across the world, and claims and underwriting are major areas of staffing in commercial insurance. The median age of an insurance employee is older than in other financial sector industries, which means retirements are taking a higher toll. Furthermore, the cyclical nature of the insurance business means the need for talent fluctuates, increasing the recruitment burden. Unprecedented demand over the last few years has only increased the challenge as employees have burned out and left or retired at higher rates than in the past. The talent challenge coupled with high underwriter salaries is pressuring insurance companies' budgets, particularly given the current people-centric nature of the business.

- **Pricing and risk issues**
  Manual underwriting is prone to error, resulting in incorrect risk profiles and inefficient pricing processes that cause critical risks to be under- or overpriced. Currently, there are no effective methods to forewarn the insured of possible risky situations to help mitigate future claims.

- **Slow business growth**
  Insurance quotes generated through manual underwriting are slower than digitally generated quotes, which may drive clients to insurance companies that avoid cumbersome processes and generate quotes more quickly. This trend will, of course, negatively impact insurers that use manual underwriting. Clients also tend to postpone the decision to take up the insurance due to bad experiences caused by unnecessary delays and this demand accumulates over time and takes a lot of time to be plowed back into action.

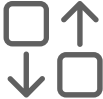# Digital and its applications across the underwriting value chain

As carriers recognize the inadequacies in their underwriting processes, they are increasingly implementing technologies that streamline the entire quote-to-bind lifecycle.

EXHIBIT 1

Components of a digital underwriting framework and key benefits

Source: Everest Group (2022)

Underwriting value chain stakeholders   ● Agent   ● Customer   ● Digital lever   ● Underwriter   ● Underwriting Analyst

	Intake	Triaging	Risk analysis	Pricing
Tech components	• Real-time data extraction from unstructured data elements using NLP solutions • Data standardization and auto-population in multiple carrier/broker systems	• Automatic routing of submission to the relevant underwriter • Prioritization of submissions through risk-based scoring and ranking	• Augmented underwriter capabilities through AI-based insights • Leverage of internal and external data sources for continuous risk assessment	• Pricing transformation through AI/ML-based tools • Identification of new data sources for tailored pricing
Key benefits	• Faster data extraction • Fewer manual and administrative tasks • Better data quality/integrity • Lower in operational costs	• Automated acceptance/decline of submissions • Accelerated quote-to-bind time • Increased quote capacity for underwriters	• Increased STP • Consistency in decision making • Accurate risk assessment	• Improved loss ratios • Faster and more accurate pricing • Improved future pricing prediction

Everest Group take

Digital underwriting leverages existing data pools and emerging technologies, such as Artificial Intelligence / Machine Learning (AI/ML) models, analytics, and IoT, across the underwriting lifecycle to automate the process to make it faster and more efficient, ultimately increasing underwriter capacity.

Addressing broker pain points using digital tools

There are several bottlenecks for brokers in the current policy management process. Typically, the service representative must manually check the entire policy for errors, which can be cumbersome and increase errors. Further, brokers face a persistent backlog, which delays policy delivery to the client once it is bound. Automation of data entry and policy management processes offers significant opportunity across the policy lifecycle to improve efficiency and enhance customer experience.

With the relevant digital tools, brokers can standardize and streamline the policy-checking process. They can use automation to read and review policies to identify errors and omissions such as missing endorsements, address errors, and incorrect limits. In addition, they can use analytics to generate policy insights and create dashboards to track policies, view policy discrepancies, and identify next best actions for their accounts. The use of Natural Language Processing (NLP), automation tools, and analytics can benefit brokers in many ways, including lower E&O risk, increased productivity, and shorter policy turnaround time.

Using digital tools across the underwriting lifecycle

Today's underwriter spends majority of their time in low value-add activities like servicing, manual data entry, data cleaning and standardizing, customer follow-up, meetings, and administrative work. The challenges to this work process are many:

- **Submissions intake**
  The current submissions intake process is highly manual, complex, and time consuming. Data coming from brokers/agents is unstructured and in different formats such as ACORD forms, emails, PDFs, Word documents, and Excel spreadsheets. Before this data goes to the underwriting staff, an internal team standardizes it. The underwriting staff then has to sift through multiple data points in different systems to identify the relevant information they need to assess risk.

  Advances in NLP can help carriers to clean, read, and extract incoming unstructured data from various kinds of insurance-specific documents such as policies, submission emails, loss run reports, binders, and quotes. NLP models can contextually understand and categorize the data contained in these documents, which can then be sent to the underwriting team for further action.

- **Triaging and submissions prioritization**
  NLP models can also help in automatically routing submissions to the relevant underwriter based on factors such as coverage and claims history. The underwriter then is tasked with prioritizing the routed submissions, which has been traditionally done through a "first in, first out" approach. This approach can create inefficiencies as the underwriter may spend time on non-profitable applications or those with limited probability of binding.

  Technology can also help to remove bottlenecks in this process; AI/ML models can prioritize submissions on factors such as likelihood to bind and coverage amount. For applications that do not meet the required criteria, submission can be auto declined, and an email can be triggered to the concerned agents/brokers via APIs.

- **Risk assessment**
  Traditionally, the risk assessment is based on analysis of historical records and the underwriter's experience and judgment. This process is time consuming and error prone. In addition, the nature of risks in commercial lines is more complex and heterogeneous, making it increasingly difficult for

underwriters to accurately assess risk. Carriers have access to vast amounts of data from both internal and external sources, but they cannot harness it. With the right tools, they can harness this data to great benefit by integrating real-time data for continuous and tailored risk assessment. In addition, based on the type of risk involved, commercial insurers can accordingly adjust their approach:

- For less complex risk, the underwriting can be done with Straight Through Processing (STP), which requires little to no human intervention
- For more complex risks that require human intervention, the process can be augmented by using these predictive tools and models

CASE STUDY

The Hartford is using connected devices for risk assessment

The Hartford analyzes the data that comes from applications on wearable sensors, connected equipment, and industrial monitoring products as part of its underwriting process, such as water-sensing technology to assess water flow, water damage, and other risks within construction sites.

For its middle and large commercial portfolios, where risks are unique and more complex, The Hartford is leveraging AI to provide more accurate pricing. It is also using aerial imagery to evaluate location risk exposure for middle and large commercial clients, which can sometimes run into hundreds.

In the workers' compensation segment, The Hartford is using data gathered from wearables such as belts, clips, and vests for its risk assessment process. Further, it is also working on technologies such as computer vision for enhanced, remote risk engineering services.

Pricing

Traditional industry standards for pricing involve the application of Generalized Linear Models (GLM) / Generalized Additive Models (GAM). However, with technological advances and the proliferation of data, insurers are increasingly adopting machine learning algorithms in risk pricing. Carriers can feed the vast amount of data they generated into the machine learning algorithms and train them through supervised and unsupervised learning. The actuary can then use these algorithms for premium pricing, as well as to reduce the actuary's manual intervention in maintaining and updating pricing models. Further, as they work through different kinds of exposures and risk data, the ML algorithm sophistication will increase, helping carriers to make more accurate pricing decisions.

CASE STUDY

Underwriter workflow solution improved a carrier's combined ratio

A leading US commercial lines carrier had multiple challenges within its underwriting process including excessive time spent on low-value tasks, no unified view for the underwriter, and multiple workflow streams, all of which impacted efficiency.

To address these challenges, the company implemented underwriting workbench solutions to orchestrate workflow and streamline the UW process. The workbench provides a 360-degree account view and smart workflows that support existing core systems. Further, it speeds and eases account servicing, with the underwriter providing quotes to their agents on a single submission view. The company also deployed a risk assessment tool to help underwriters with near real-time analysis of the prospective client and locations, and other relevant historical information about the account.

At the same time, the carrier gained access to third-party data which reduced the decision-making time ultimately leading to a positive impact on the combined ratio for the line of business.

Underwriting transformation for a leading specialty insurance carrier

Overview

Argo Group is a specialty insurance and reinsurance company that provides coverage for businesses and individuals in various industries such as marine, energy, construction and professional services. The company is known for underwriting complex and specialized risks and its global reach, with offices in London, Singapore, New York. and other major cities around the world.

Scope/Business need

Argo Group wanted a digital transformation partner with deep process and operational expertise that could help it integrate and automate its data and manual processes across functions.

Solution and transformation approach

Sutherland's solution offering centered around adopting a human-centric design approach to redefine customer journeys and reduce process inefficiencies and work duplication, all wrapped in digital-first practices enabling upfront digitization for STP and downstream automation. Sutherland leveraged best-fit in-house and industry-leading automation tools across a wide array of underwriting processes such as policy booking, renewals, and policy issuance. Throughout the transformational solution design, Sutherland emphasized targeted business outcomes / next-generation metrics such as speed to market and expense ratio reduction, powered by smart analytics to drive measurable improvement/enhancement.

Business impact

Sutherland's transformation approach was to look across the entire process, rather than individual tasks, building on lessons learned from implementing holistic intelligent automation across an organization. Sutherland's solutions tailored to Argo's varying business needs successfully delivered the following measurable business benefits.

- 90% submission with UW within an hour (near ready to quote), increasing speed to market
- New business data entry time reduced from 25 to 7 minutes
- Underwriter's effort educed by 20%+
- 2-3% improvement in expense ratio
- Platform for unification across multiple disparate core systems
- 80+ bots in action currently; 150,000 transactions automated annually

Sourcing implications

As each new wave of digitization creates opportunities to increase efficiency, improve customer experience, and deliver superior returns, insurers need to embrace digitalization now to evolve with changing market dynamics.

Because the underwriting function is critical an insurer's overall operations, the function has traditionally been managed in-house. The accelerating application of analytics and AI-powered solutions to underwriting is fundamentally transforming the process, shifting it from a data-led judgment process to one based on predictive modelling. This fundamental shift is opening the door for insurers to reconsider their management models, presenting three potential options: remain in-house, move to a captive, or outsource broadly. Insurers can use different models in different components of the value chain, depending on process complexity: they may outsource lower or mid-complexity processes while keeping more complex processes in-house.

We have described the advantages, warnings, and strategic approach for each of the three models below.

In-house: The insurer handles end-to-end underwriting functions from intake to pricing in-house.

Key capabilities required

- Availability of talent in the insurer location (onshore) for day-to-day, seasonal, and ramping-up requirements
- Ability to scale up operations, including talent and infrastructure
- Availability of platform, automation, analytics, and point solutions for various touchpoints in the process
- Ability to run best-in-class lean and efficient operations
- Strategy for employee training, engagement, career planning, and retention

Advantages	Areas to look out for	Strategic approach
• Management oversight and control of day-to-day underwriting operations • Data privacy protection • Confidentiality and security • Quality assurance • Similar time zone • Intellectual property control	• Slower pace of technology adoption • Difficulty in scaling operations • Operational and process inefficiency • Higher cost • System integration issues for external tools and technologies	• Partnership with InsurTech and pure-play tech solution providers • Process mining and re-engineering • Building out point solutions • Transformation journey plan

We have described the advantages, warnings, and strategic approach for each of the three models below.

Captive: The insurer transfers all or some of the underwriting function to its existing captive or establishes a captive center to offshore back-office functions.

Key capabilities required

- Experience in handling and scaling captive center operations
- Robust reporting and governance structure between the parent company and the captive
- Superior human resources and training strategy
- Ability to hire skilled resources in captive locations
- Availability of platform, automation, analytics, and point solutions for various touchpoints in the process
- Ability to run best-in-class lean and efficient operations
- Ability to migrate additional processes or parts of the value chain to a captive center

Advantages	Areas to look out for	Strategic approach
- Economies of scope and utilization - Planned demand and supply - Standardized service levels compared to in-house - Intellectual property control - Lower cost than in-house	- Slower pace of technology adoption - The added cost involved in running a separate captive - System integration issues for external tools and technologies - The cultural dissimilarity between the parent organization and captive - Employee motivation challenges that come with working for a captive	- Partnership with InsurTech and pure-play tech solution providers - Process mining and re-engineering - Building out point solutions - Transformation journey plan - Effective governance between parent and captive - Additional process migration to captive plan

Outsourced: Outsourced: The insurer outsources all or part of the operations to one or more service provider(s).

Key capabilities required

- Efficient procurement department to handle the outsourcing process
- Vendor management
- Change management process
- Dedicated teams to ensure data privacy and confidentiality
- Contract management

Advantages	Areas to look out for	Strategic approach
- Lower cost of operations - The provider manages the SLAs - Flexibility to scale - Digitized and efficient processes - Potentially superior customer experience through the utilization of best-in-class tools	- Quality - Data privacy and confidentiality - Internal change communication	- Encourage the use of outcome-based and gain share models in the complex underwriting process - Diversify service provider base to increase competition - Periodic audit of the contract and the provider account

When outsourcing, insurers also need to carefully consider their options when assessing the best-fit provider. Their clients have disparate requirements and unique risk exposures depending upon the nature and size of their business, property locations, etc. Carriers need to consider their own clients' needs as they engage with providers, seeking out those that have the relevant experience and that are developing solutions/tools that meet the insurer's commercial clients' specific needs. For example, while small and mid-size clients might want STP and automation for their initial submissions, large clients may focus more on making sense of the volumes of structured and unstructured data.

Further, to derive maximum value out of a partnership, carriers should analyze the inefficiencies within their current underwriting process and engage with providers with the experience and capabilities to address those specific issues.

Key considerations for finding the best-fit partner provider:

- Business benefits in the form of RoI, CX improvement, etc.
- Integration with existing systems
- Implementation and service-level support
- Technical training on the tools/solutions for the underwriting staff
- Solution scalability as the partnership grows
- Data security and governance

Underwriter of the future – journey to becoming a savvy underwriter

While the core of the underwriter role will not change substantially, the skills required of a savvy underwriter in the future will be fundamentally different. This change in job function may drive many out of the role while at the same time, the underwriting workforce will also be impacted as majority of the underwriters near retirement age. Another threat that most professionals feel due to the advent of automation and digitization is a sense of their role becoming redundant and replaceable, However, this will not be a cause of concern due to the critical nature of the work. On the contrary, the underwriter role will become even more important in shaping the algorithms to determine risk.

These new tools, which involve making decisions based on data coming from multiple sources, will require underwriters to be well-versed in data strategy and advanced analytics fundamentals. The tools and technologies will help to expand underwriters' bandwidth by freeing them from doing low-value activities and enabling them able to focus on complex and high-value transactions.

As a result of these changes, savvy underwriters will have to play some new roles. Insurers will need to develop action plans to integrate these requirements into underwriters' learning and development programs in the future.

Tech evangelist

- Aware of the complete end-to-end digital workflow and various aids available to assist in decision making
- Actively involved in developing and updating algorithms to keep pace with the changing market conditions

Required skill sets: basic knowledge of automation; interest in emerging technologies

Data aficionado

- Willing and able to analyze vast amounts of data from multiple sources to understand risk and set prices
- Accustomed to basing decision making on insights provided by tools and technologies and capable of blending insights with additional data points
- Collaborative with multiple stakeholders including data scientists, InsurTech, and database providers to look out for changing dynamics within the space

Required skill sets: Data analytics, data strategy, master data management

Intercessor

- Adaptable to arbitrating and closing insurance sales by negotiating terms and conditions with clients, brokers, and other intermediaries
- Able to identify new commercialization opportunities for the changing risk landscape

Required skill sets: Collaboration, excellent communication, customer, and stakeholder management

Business champion

- Business acumen to generate ideas for new products and revisions for existing products based on trends and changes in customer preference
- Able to cultivate partnerships across the value chain to strengthen offerings and capabilities

Required skill sets: Business planning, product management, portfolio management

Risk senser

- Able to sense risk to predict and inform the organization about future risk exposure for clients and to prevent future claims to the extent possible
- Ability to handle high-risk cases regularly and consistently, particularly as algorithmic models send quotes for low-risk clients STP, essentially eliminating the easier work

Required skill sets: Risk management, data analysis

Insurers need to focus on these points going forward to instill new capabilities into the DNA of the underwriting organization. Doing so requires a significant cultural shift in the underwriting organizational as described below.

Cultural element	Current state	Key changes required	Future state
Strategy	Enterprise senior leadership have realized the need for change and have started to invest in tools and technologies, but the overall strategic roadmap to get from current to future state is not developed.	• Senior leaders need to create a roadmap for the future with one-, three-, and five-year plans and measure achievement at the end of each cycle to understand the gaps. • Buy-in from investors, intermediaries, InsurTech, and employees needs to be secured on the overall strategic alignment.	The end-to-end strategy is aligned to make the underwriter role more strategic and delegate non-strategic priorities to lower-cost staff or handle through STP/ process automation.
Talent development	Currently, underwriters are more aligned to a traditional mindset and are involved in low-value activities, which results in significant inefficiency.	• Current staffing needs to be skilled in emerging technologies and their application in various stages of the process to increase digital adoption in decision making. A change management plan needs to be developed to transition from traditional to new ways of working • The current hiring process needs a significant shift, and all future talent needs to be assessed differently on their ability to adapt to new technologies and use them in day-to-day activities in addition to core skills required • Organizations need to cultivate a strategic thinking mindset	The talent of the future is skilled and fully equipped to take on the new roles and responsibilities leading to the establishment of a robust business framework for growth.
Compensation and incentive structure	Underwriter compensation structures currently have direct and indirect components, with direct being specific to the individual's performance and indirect is dependent on team and company performance.	• Organizations need to revamp underwriters' compensation to include incentives for driving automation and STP • The bonus component needs to consider the performance of past underwriting critical deals and risk prediction; forbearance need to be awarded	• Underwriters are financially motivated to drive digital adoption and ensure prudent risk management for current and future policies to achieve bonuses and incentives • The compensation structure is on par with top technology companies hiring for niche skills

Cultural element	Current state	Key changes required	Future state
Innovation	• Most current innovations and technology breakthroughs in underwriter operations are driven externally, primarily by providers and InsurTech. • There is no unified workflow to manage end-to-end activities.	• Underwriting organizations need to be motivated to innovate their approaches and produce ideas to increase productivity. • These organizations need to adopt workbench, risk assessment tools, scalable architecture, and AI/ML solutions within day-to-day activities.	• Most of the underwriting is accelerated. • Tools and technology use is standard operating procedure for underwriters.
Data-driven decision making	• Data is dispersed in disparate systems with no way of deriving insights and analytics. • Reporting mechanisms are poor.	• Insurers need to integrate data systems and available standardize and normalize data for use in advanced reporting and analytics capabilities. • The business needs to be driven by analytical insight-driven decision-making.	• Data-driven decision-making is at the heart of all major policy decisions. • Decision making is aligned with foresight into risk assessment and prevention.
Collaboration	• Teams are mostly working in silos with limited collaboration. • Industry partnerships, while in place, are not leveraged to their greatest advantage.	• Organizations need to encourage teams and industry collaborations to drive better business outcomes. • Stakeholder consultation needs to be incorporated in key decision making	All teams work collaboratively internally and with the external partners; organizations use agile decision making.

Conclusion

The insurance market is experiencing unprecedented change, with inflation, pent-up demand, climate change, and changing consumer expectations and behavior to name a few. To survive and thrive into the future, carriers need to radically transform their current underwriting processes; failing to do so will not only impact the bottom line, but they will fall farther and farther behind as the underwriting function becomes increasingly digitized.

Digital underwriting applies technologies across the quote-to-bind lifecycle, introducing significant potential benefit in the form of increased productivity, shorter turnaround times, and increased capacity for underwriters to focus on value-add activities. Insurers have several options to gain access to underwriting tools and applications, including technology providers, InsurTechs, and service providers. Carriers should consider their current and future states to determine the best choice fit.

The rising adoption of digital underwriting is dramatically impacting the underwriter role, including skills, expectations, and talent availability. Insurers need to rethink and revise talent expectations to ensure they attract and retain the best underwriting talent for the future.

Given that underwriting is a core insurance process, carriers that are able to build digital capabilities across the underwriting value chain while making strategic investments in talent are likely to gain a competitive advantage over their peers.

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