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From art to science:
The future of underwriting in commercial P&C insurance

Underwriting in insurance is essential to performance excellence. Today’s carriers will need to evolve the role to meet the industry and customer needs of tomorrow.

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Introduction

In commercial property and casualty (P&C) insurance, underwriting excellence remains paramount to company performance. Recent research from McKinsey's Journey Analysis, which looked at leading commercial-focused P&C companies over the past three decades, reinforces why the stakes are so high. The analysis confirms what has been true for decades: there is significant variability among top insurance companies. What's more, operating results—more than capital leverage or investment returns—has the greatest impact on overall financial performance. And within operating results, loss ratio generates much more variability than expense: when comparing top- and bottom-quintile performers in both the United States and the United Kingdom, loss ratio varies by up to 28 percentage points, whereas expenses vary by just 2 to 4 points (Exhibit 1).

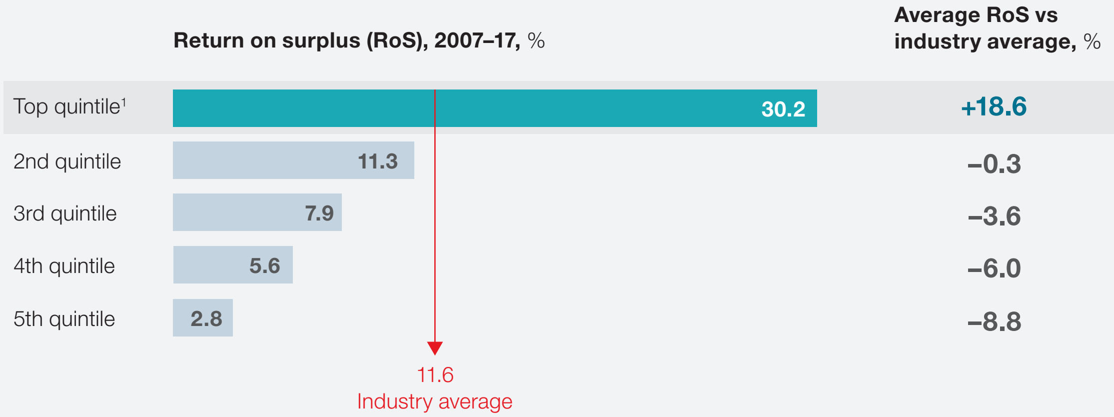
Achieving underwriting improvement can be a Herculean task. Compared with retail personal lines, commercial exposures are heterogenous, intermediated, and often qualitative. This heterogeneity is even true in the small and medium-size enterprise (SME) category, where thousands of microsegments can each have unique risk profiles and face different hazards. Risk outcomes are not binary—policy wording and exclusions might seem straightforward until they are challenged by litigation and subject to interpretation. Further, achieving and documenting improved results in underwriting performance can take up to several years.

Over the past decade, we have witnessed both successes and shortcomings in underwriting improvement programs. These observations have shown that underwriting excellence requires a relentless focus on five essential building blocks: portfolio steering, pricing adequacy, risk selection, capacity optimization, and coverage design. As technologies such as big data, advanced analytics, and artificial intelligence continue to advance and new applications emerge, each of these building blocks will evolve and become increasingly more data driven. Organizations must adapt to incorporate these technologies while also focusing on critical enablers such as distribution, culture, digital, and strategy. Collectively, these building blocks and enablers are the foundation of underwriting excellence.

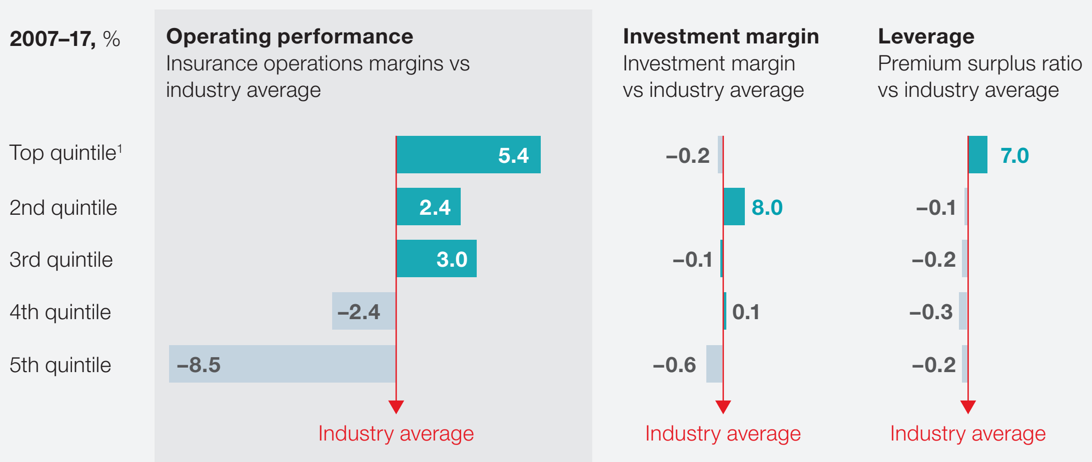
Of course, making this shift is much easier said than done. Underwriting has historically been slow to change, yet clients—and the perils they face—are rapidly changing. Making transformational investments to reinvent the role of underwriting has never been more important.

Exhibit 1

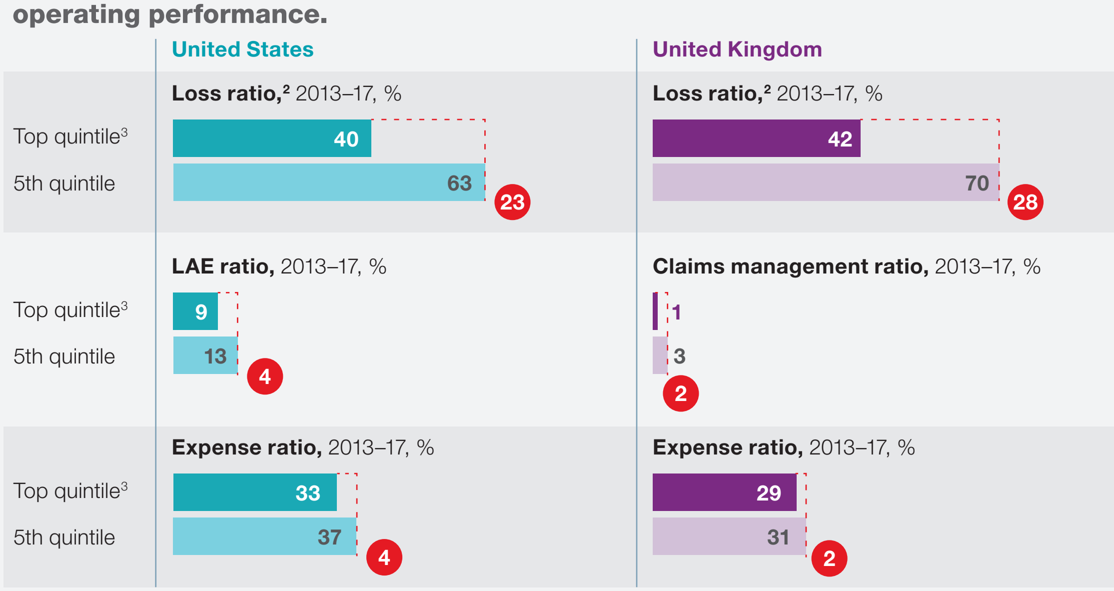
Even among top commercial-focused insurers, there is significant variability in performance.



Operating performance is the determining factor underlying returns.



In the US and UK, loss ratio has the most pronounced impact on operating performance.



[1] Quintiles have seven carriers each; industry is the average of all 35 carriers.
[2] This category is "incurred loss ratio" in the US and "claims incurred ratio" in UK.
[3] Total of 35 companies in US sample, 20 in UK sample.

Source: A.M. Best; McKinsey P&C Journey Model; PRA (Prudential Regulatory Authority)

The essentials of great underwriting

Some insurers have a great reputation for their underwriting capabilities—as reflected in their underwriting results—while others struggle to achieve consistent quality. When seeking to improve performance, it is important to recognize that underwriting is more than risk selection and pricing. It requires a comprehensive set of capabilities across hard and soft skills, qualitative judgments about future industry performance, and rigorous portfolio management to avoid markets where even great underwriting cannot compensate for unfavorable conditions. Underwriting performance is also influenced by exogenous factors, such as the business development activities with distribution partners to generate consistent and attractive submission flow.

There is no "one size fits all" formula for success. Underwriting operating models vary significantly based on industry, region, client size, and product. For instance, SME coverage needs are relatively standard, so simplicity and automation are critical success factors. Large corporate accounts have more bespoke coverage needs, so successful underwriting encompasses rigorous risk selection, creative but prudent coverage design, and limits management. Midmarket companies occupy a unique and sometimes confusing position between large and small accounts. As such, they require a lighter touch than large-account underwriting to be cost effective, yet they also demand more analysis and structuring than simpler SME accounts. Midmarket accounts (those with premiums of $50,000 to $300,000) are often bundled to meet industry-specific needs but without the same level of bespoke customization as large accounts. Beyond SME, midmarket, and large clients, many other "segments" have their own unique underwriting requirements—including programs or managing general agents, binders and delegated authority, wholesale, London Markets, non-P&C coverages (political risk, surety), and industry-centric products such as environmental, construction, marine, cyber, and energy, among others.

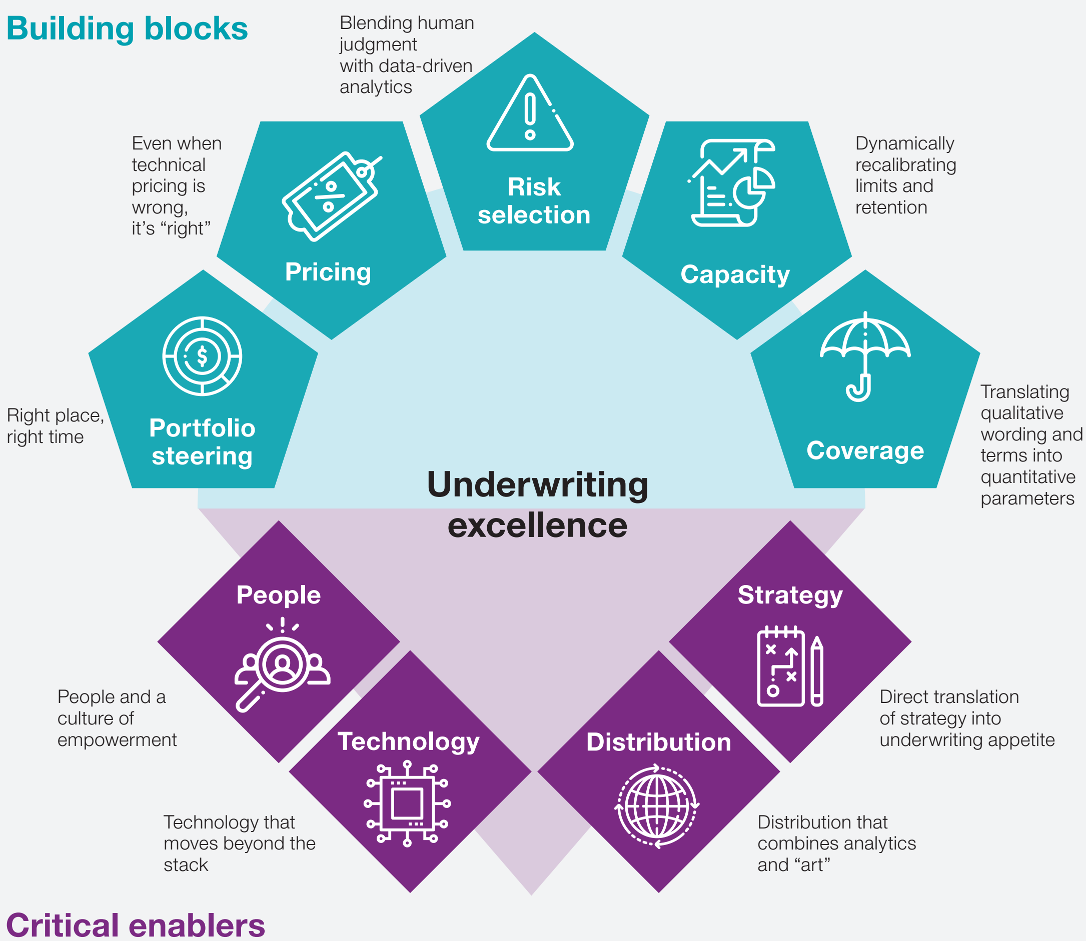
Regardless of these differences, we believe that underwriting excellence has five common and essential building blocks (Exhibit 2).

Portfolio steering: Right place, right time

Across the portfolio—and within subsegments and industries—great underwriters have a clear view of the sweet spot from which they can profitably underwrite risk. Over time their appetite will change based on supply and demand. The main supply dynamics are other companies exiting and entering the market or adapting their own appetites, whereas the main demand dynamics include changing perils and coverage needs, evolving exposure traits, and new business models.

Great underwriters blend quantitative analysis with qualitative, forward-looking judgment about how exposures are likely to change. And great companies strike a delicate balance between consistency in appetite and the need to continuously calibrate that appetite, pulling back when conditions are unsustainable. To enable this balance, leading companies have established management information frameworks that provide a multilensed view of the portfolio. This perspective captures the many nuances of commercial performance, including treatment of prior year development or catastrophe and shock losses. It also thoughtfully considers where and

Exhibit 2 **Building blocks and enablers form the foundation of underwriting excellence.**



how to include or exclude allocated expenses and explicitly incorporates capital-based returns alongside typical profit-and-loss performance. Last, performance management translates directly into account-level guidance on target rates and renewals, with real-time corrective action taken within the renewal season.

We observed leading global companies where these management information practices are immature. Some cases revealed a concerning lack of clarity about drivers of underlying performance.

Pricing: Even when technical pricing is wrong, it's 'right'

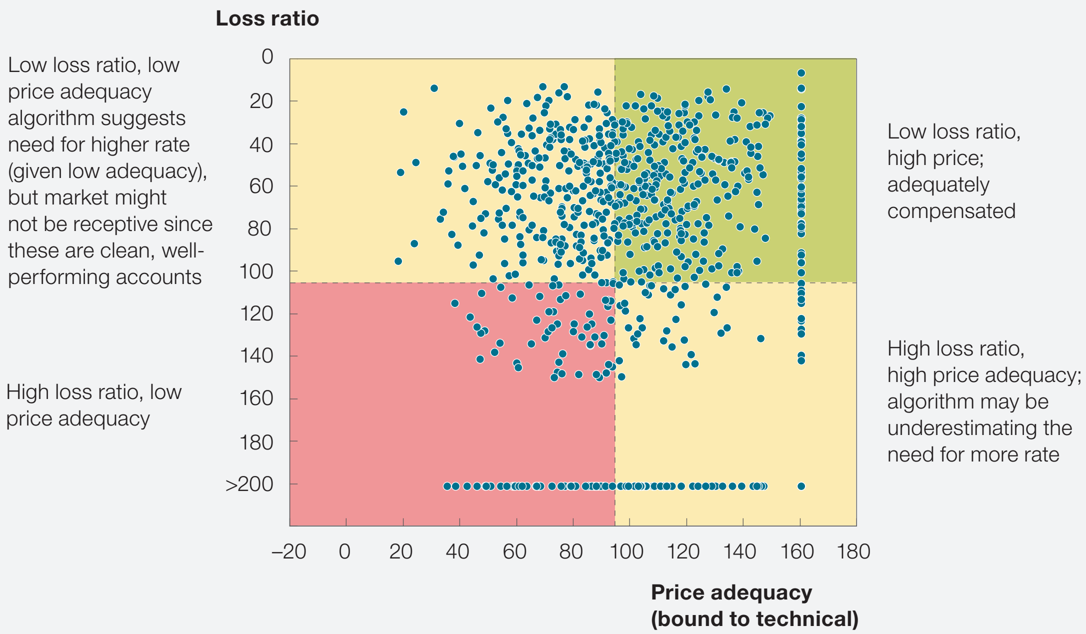
Since the early 2000s, many companies have more systematically introduced technical pricing as a core part of underwriting governance. The notion of a model-driven price for any risk is now commonplace in the industry. Technical pricing has its limitations: it sometimes results in prices that are overly biased by input factors, creating under- or overpriced guidance (Exhibit 3). Further, in practice, client and competitive considerations determine the "real" price. That said, as imperfect as it may be, technical price can serve as a benchmark that provides invaluable insight into directional movement of pricing for a portfolio of common exposures over time. It can also serve as a tool to support discussions with clients and negotiations with brokers.

Successful companies mandate technical pricing as guidance but make allowances for deviation. Debate about divergence from technical becomes a regular part of performance discussions. They recognize that technical pricing is a critical input to ensure price adequacy but also that it cannot be the sole basis for pricing risks.

Risk selection: Blending human judgment with data-driven analytics

We observed that the highest-performing underwriters are those with a structured, intentional approach to analyzing exposures. In some cases, this approach is explicit and can be articulated. In others, it is implicit and reflects intuition based on hard-learned experience. We have also

Exhibit 3 **When blending technical price with loss experience to 'score' renewal books, there may be unintended biases in the score.**



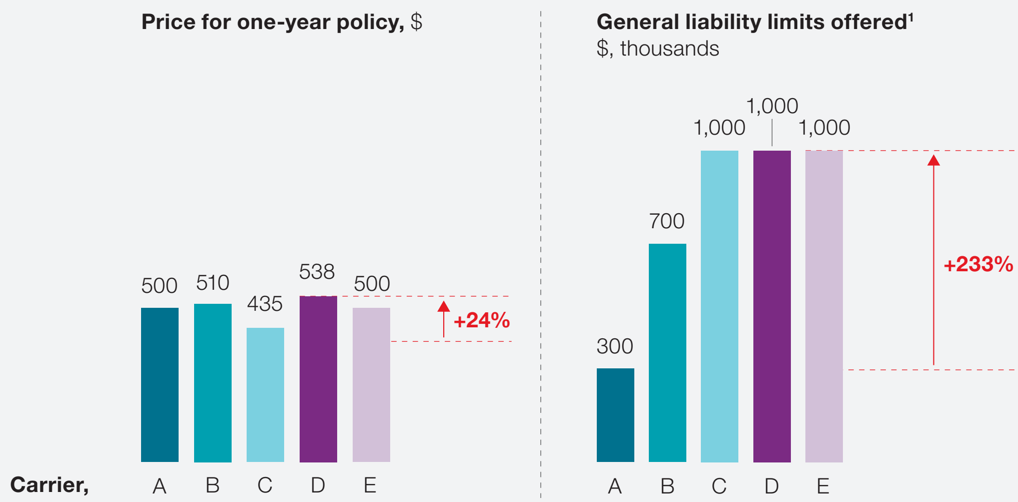
Note: Assumes that 50% of score is based on historical loss ratio and 50% on price adequacy.

Source: McKinsey analysis

observed that data-driven tools can greatly supplement human judgment, enabling many successful underwriting teams to outperform peers, especially by employing superior risk selection in overcapitalized markets in which pricing is barely adequate. These tools have proved successful across all segments of risk, spanning SME to midmarket to large to specialty accounts. In some cases, however, we observed companies putting the cart before the horse—enamored with the promise of artificial intelligence and advanced analytics, they mandated that the black box–modeled output prevail over subjective underwriting judgment. Despite good intentions, this overemphasis on analytics led to a vicious cycle in which imprecisely modeled guidance did not accurately anticipate future risk experience. As a result, underwriting performance deteriorated, staff lost faith in the models, and (since judgment and creativity were discouraged) underwriting skills diminished.

Through hard experience, companies now appreciate that the black-box approach does not work. When successfully implemented, new data-driven tools supplement—rather than replace—human judgment. In addition, beyond the models, successful companies build a culture that systematically encourages qualitative debate around underwriting outlook. Having an institutional forum for this debate is the hallmark of many great underwriting teams. In this environment, underwriters

Exhibit 4 **A comparison of carriers found significant differences in price and coverage.**



[1] Included limits: general liability per occurrence: $300,000 to $1 million, general liability annual aggregate: $300,000 to $2 million; medical: $10,000; employment practices liability: $10,000.

Source: McKinsey analysis

challenge one another. Collective problem-solving informs transaction decisions and translates into an adapted, sharpened underwriting appetite. These adjustments to appetite happen rapidly and proactively, rather than by reacting to adverse development or awaiting ex post facto guidance from the corporate center.

Capacity: Dynamically recalibrating limits and retention

Capacity optimization has several elements, including the total limits and sublimits offered, the level of risk a client will retain through self-insured retention and deductibles, and, once deployed, net retention across the portfolio based on use of reinsurance. Within large-account, shared-and-layered towers, attachment point is an additional consideration. Best practice is to have quantitative, dynamic tools that track performance and provide "what if" guidance to inform how these parameters should change.

The discipline of capacity optimization applies not just to large, syndicated placements but also to very small risks. For instance, in the American SME market, our comparison shopping across five different companies found up to a 24 percent difference in price and a 233 percent differential in the amount of general liability for the same risk (Exhibit 4). Specifically, a small business owner could get general liability coverage ranging from $300,000 to $1 million for about the same price (around $500). While these accounts may typically be low frequency, deploying capacity more prudently could have a material impact on the results from a handful of losses.

Coverage: Translating qualitative wording and terms into quantitative parameters

Broad coverage allows differentiation and ensures that client needs are addressed satisfactorily. That said, overaccommodation also leads to underperformance, and precise wording can have material impact: famously, the World Trade Center's claim after the 9/11 terrorist attacks faced litigation regarding whether the two towers reflected two events or a single event. Given the past several years of soft conditions, coverage creep—that is, providing broader and more accommodating coverage—has increasingly undermined performance.

Beyond careful controls around wording, we observed that great companies engage in thoughtful debate around the breadth of coverage offered. We also saw early attempts to apply artificial intelligence and translate qualitative contract wording and endorsements into well-defined parametric variables. Here, the insurance industry lags behind other industries, where intelligent contracts and rules-based, data-centric clause management have become commonplace.

Top-performing companies comprehensively consider all five building blocks of underwriting together and avoid the trap of narrowly focusing on any single dimension—particularly pricing, which is more easily measured. In addition, leading companies are investing to embed data-based insights across the five building blocks, with data and advanced analytics informing all aspects of underwriting. Since these technologies are still nascent, great companies are encouraging—in fact, demanding—the blend of art with science, ultimately excelling at each.

Underwriting excellence requires more than underwriting

For underwriting to thrive, the environment in which it operates is as important as the building blocks described above. Four critical enablers of great underwriting are distribution, culture, digital, and strategy.

Distribution that combines analytics and 'art'

Leading companies build data-driven analytics to inform broker and agent relationships, including the optimal number of appointments, where and how to shift volumes, and the negotiation of performance-based commissions. Distribution management goes hand in hand with underwriting performance as it allows access to a quality submission flow.

In midmarket and large accounts, production skills can be as important as technical skills: business development is a key factor underlying submission volumes, and negotiation skills can reduce leakage in the underwriting process.

People and a culture of empowerment

Controls are obviously an essential line of defense to avoid undisciplined underwriting. However, the compliance process is sometimes cursory and focused on "checking the box" process discipline. At worst, we observed cultures where rigid controls had eroded morale, leading to a stifling environment in which frontline staff were discouraged from applying initiative and creativity. In contrast, great underwriting companies establish an underwriting review process that is both rigorous and constructively challenging, in a manner that meaningfully contributes to improving underwriting quality.

These companies also manage to promote autonomy and empower frontline underwriters. There is a clear cascade of authority, with a fast and constructive process to escalate issues. However, decision making definitively happens at the front line. With empowerment comes accountability, so the front line is held accountable for results and receives compensation directly tied to underwriting performance.

Leading companies also create a culture of collaboration and engagement across functions, including claims, engineering, actuarial, and finance. Teams have joint ownership of results and are encouraged to constructively challenge each other. In this way, company-wide views on underwriting performance holistically incorporate input across functions.

Technology that moves beyond the stack

Commercial P&C has systemically underinvested in technology. Leading-edge technology is less mission critical to commercial insurance than to other industries, arguable because underwriting is an annual transaction that does not require the same level of real-time, on-demand execution compared with more transaction-intensive industries. Also, loss ratio has much more impact on performance than expense, sometimes resulting in a vicious cycle where expense management is neglected and actually becomes a drag on performance. As such, the technology landscape in many commercial insurers remains hindered by legacy systems. Based on our observations, anywhere from 30 to 40 percent of underwriting's time is spent on administrative tasks, such as rekeying data or manually executing analyses.

Meanwhile, technology continues to evolve rapidly. Today's modern platforms are based on cloud-native and multispeed architecture, allowing the automation of application development.

Furthermore, application programming interfaces (APIs) more readily enable incorporation of external data and tools. These advancements have placed a fully digital workflow, with seamless access to data, within arm's reach. Supported by a user-friendly underwriting workbench, companies that establish modern architecture can capture a multitude of benefits, such as making the job more interesting for underwriters, allowing more effective governance, enabling a better handle on productivity, and—critically—facilitating easier access to data and advanced analytics.

Despite these benefits, the road to technology modernization has been painful and littered with failed IT projects. One challenge has been the translation of business requirements into practical technical specifications that are fit for purpose and accommodate the complexity inherent in commercial underwriting. Another challenge has been sourcing the required talent and capabilities to fuel transformation. Yet another has been building a business case for change when the ROI may not be obvious, at least in the near term. And yet another challenge has been the mix of a "large IT project" mind-set with incremental thinking, in which companies install new monolithic systems through massive systems integration efforts. Typically, the result is only marginally better than the status quo. Instead, companies should be transitioning to a cloud-native, microservices environment in staged, agile waves. As insurers continue to confront the burden of legacy IT, they must appreciate the potentially profound benefits of successfully establishing a nimble, modern architecture.

Direct translation of strategy into underwriting appetite

Strategy for an underwriting company requires a bottom-up plan across segments or divisions that comprehensively considers the five building blocks and the following questions: Where should capital best be allocated across segments and divisions? How do we believe the supply of capital, competitive intensity, and customer coverage needs will change over the next several years? Should emerging risks be excluded or translated into expanded underwriting appetite? What is the willingness to give up margin to increase gross premiums and market standing? Can coverage and terms be differentiating? Are there unique services that can result in premium pricing or other benefits, such as higher retention? Or, are services "table stakes"—and commodity pricing merely a reality that must be accepted? In commercial P&C, strategic view of industry outlook and future value creation needs to translate directly into underwriting appetite. The lines blur between the chief underwriting officer and chief strategy officer.

The future of underwriting

When the above building blocks and enablers are solidly in place, insurers have an opportunity to make transformational investments as they reshape the underwriting role to be ready for the challenges of tomorrow's world.

Underwriter as business builder

With today's crowded landscape, many companies are attempting to decommoditize capacity by offering differentiated services or insights. To do this, leading companies recognize that cutting-edge expertise cannot be exclusively developed in-house. It often requires tapping into broader ecosystems and involving third parties. As underwriters look to provide this expanded level of service, more third-party partnerships will develop where insurance companies are seen as the "tip of the spear" in helping clients navigate the complex ecosystem of risk prevention. Building third-party relationships—and incorporating them into the underwriting value proposition—represents a dramatic shift for the industry and will require new capabilities.

Underwriter as data scientist

As digital tools were first being introduced more than ten years ago, we observed pushback from some underwriters: "I would rather drive a taxi than use this spreadsheet." Times have changed. Spreadsheets are now commonplace—not to mention, Uber now competes with taxis. Underwriting may look very different in the future compared with today. There will be visualized

Underwriting may look very different in the future compared with today. There will be visualized views on frequency and severity across portfolios, supported by real-time, dynamic "what if" analytics executed by drop-down menus.

views on frequency and severity across portfolios, supported by real-time, dynamic "what if" analytics executed by drop-down menus. The impact from new perils can instantly be simulated. Re-underwriting a portfolio could happen within minutes. Individual risk decisions will be made in concert with reinsurance-style, portfolio-based underwriting across accounts. Successfully embedding analytics into underwriting requires more than bleeding-edge analytic tools, thoughtful change management, and a center of excellence staffed by brilliant PhDs.[1] It requires frontline underwriters as co-developers and owners of these new analytic tools. The underwriter and translator roles will increasingly become synonymous with underwriters and data scientists working together in agile teams. Companies are rethinking how they source talent so that the next generation of underwriters can handle this expanded, more challenging scope of responsibility.

Underwriter as digital manager

Considerable disruption is occurring in channels, with a push to more digital and streamlined offerings. So far, "digital direct" has had slow adoption in many markets, though we know there is customer interest in transacting online and that up to 70 percent of customer journeys start in direct channels.[2] Some companies are investing to extend streamlined platforms for SMEs to larger midmarket risks. The Internet of Things is also beginning to have more widespread adoption and may increasingly be directly incorporated into the underwriting process. Considering all these factors together, commercial underwriting may experience disruption similar to the airline industry, in which artificial intelligence is responsible for most of the navigation outside of takeoff and landing. In the future, underwriters will become more like pilots, with mundane activities increasingly automated. Additionally, technology, operations and underwriting functions will sit side by side, with the underwriter serving as agile coach and translator to actively guide ongoing platform development.

Underwriter as #renaissance woman #renaissance man

Today's underwriting role often has a singular focus on specific segments or products, with limited movement across different functional departments. To attract younger talent, companies need to recognize that millennial and Generation Z workers are looking for roles that expose them to a wider array of challenges and opportunities. We may see underwriters who build skills across both short- and long-tail lines, rather than the typical monoline focus. Underwriting may expand to encourage more cross-functional and hybrid responsibilities—potentially with engineering, claims, finance, or operations. Another innovation could be more team-based structures, where small groups of underwriters are collectively responsible for portfolios or subsegments of a portfolio. Many of these efforts are already happening in a de facto way throughout the industry—but there is potential to do them more systematically.

■ ■ ■

As companies seek to modernize underwriting, they must strike a delicate balance to manage the tensions of art versus science, automation versus judgment, and autonomy versus control. Excellence must begin with the basics: ensuring robust and modern practice across the five essential building blocks as well as the four critical enablers.

Once the critical building blocks are firmly established, companies have an opportunity to invest in the transformational themes we have described. To succeed, these cannot be tactical investments to upskill today's function, but require a reinvention mind-set to fundamentally redefine the underwriting role. In doing so, leading insurers will establish underwriting as an expanded, more exciting role that matches the pace and complexity of today's world.

What will be true in the future, just as it has been true for decades, is that companies with a strong underwriting culture will continue to outperform others in the industry. ■

[1] Ari Chester, Richard Clarke, and Ari Libarikian, "Transforming into an analytics-driven carrier," February 2016, McKinsey.com.

[2] "Small commercial insurance: A bright spot in the US property-casualty market," March 2016, McKinsey.com.

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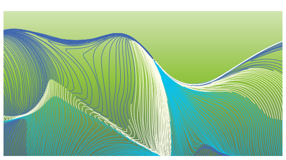

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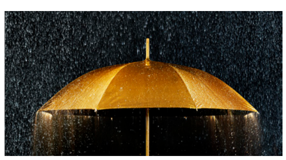

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