



WHITE PAPER

INSURING AGAINST CHANGE

What modern actuaries need from their software

A WORLD OF CHANGE FOR TODAY'S ACTUARIES



New risks. Evolving regulations. Disruptive competitors. Change never stops in the insurance industry and actuaries are more aware than most of its potential impacts.

Technology can help monitor and report on the risks. But in an increasingly demanding world, does your actuarial modeling and risk management software always keep you prepared for the future and ahead of the next challenge?

There are costs to consider, too. Today's actuarial software must move with the times without adding to your overhead. And as software specialists know, evolution should come as part of the package, not make you pay for every regulatory update or version upgrade.

Constant change requires comprehensive solutions. Now, actuaries need their software to deliver on seven fronts:

1. Consolidation

U.S. insurance companies often run multiple actuarial platforms and systems for different lines of business – or for pricing, valuations and projections within one business line. Some still create and run valuation and projection models in Excel spreadsheets or open-source programming languages like R and Python.

The result is usually a complex patchwork of modeling processes and calculations – and a wealth of operational challenges.

For example, in a fragmented landscape of technology, it can be a headache to reconcile results between systems, with whole teams often dedicated to the task.

Fragmentation also makes it harder to price products or project the balance sheet under a new or updated reporting regime, whether it's LDTI, PBR or, most recently, enhancements to the Bermuda Solvency Capital Requirement (BSCR).

The latter is especially pertinent to U.S. insurers. As the market becomes more competitive, many are not only investing in more sophisticated, riskier instruments but also reducing capital drag on their annuity blocks with offshore reinsurance in territories like Bermuda.

An inability to model and forecast BSCR and similar regulatory updates could therefore place firms at a major disadvantage.

So, in the interest of simplicity, efficiency, consistency and competitive advantage, a single, consolidated platform and calculation engine for valuation, pricing and risk analysis is the only way forward for modern actuarial modeling processes.

Plus, by consolidating your systems in this way, you make it easier to achieve end-to-end automation. Ultimately, this promotes actuaries from being model builders to model owners – and frees them up to focus on communicating their results to support business decision making.

2. Flexibility with control

Historically, U.S. actuaries have used a combination of transparent open systems and black-box closed systems.

With an open system, you gain the flexibility to design models as you see fit, build company-specific tests or model new product features, management actions or policyholder behavior. By contrast, the closed system somewhat simplifies the management of models – but only the software vendor can modify the code base.

Now, since the adoption of principle-based (rather than rule-based) regulations like PBR and LDTI, U.S. insurers are moving increasingly toward open systems.

An open system provides not only a clear line of sight to the calculations and processes that underpin pricing and valuations, but also the flexibility to modify modeling methods and product features so firms can differentiate themselves from their competition.

There are cultural benefits for insurance companies, too. The longer that actuaries use an open system, the more knowledgeable, innovative and effective they can be – and the more able to adapt to shifting climates.

A drawback of the open system, and also of open-source tools like R and Python, is the lack of control over models, as code can easily be changed without leaving an audit trail.

R, Python and other programming languages are certainly useful for testing new actuarial or statistical techniques and are often deployed for experience studies and assumption setting. But it would take considerable investment into in-house controls to make them fit for full-scale results production and financial projections.

The best option for actuaries is to run an open but controlled and supported platform for actuarial modeling which combines transparency with strong governance of data input, results output and end-to-end workflow.

3. Out-of-the-box calculations



Another disadvantage of open-source modeling tools is the lack of out-of-the-box capabilities for actuarial modeling and regulatory calculations. As programming languages, R and Python are not developed with actuarial users in mind, less still to support evolving reporting requirements.

But with no visibility of the underlying code, closed-box actuarial solutions also make it harder to keep up with the latest regulatory changes.

By contrast, the ideal actuarial software will provide whole libraries of the variables, actuarial definitions and formulas that define the calculations you need to make.

However, not all open software is created equal – or offered on the same terms. For example, a consultancy that provides its own software on the side is likely to charge clients dearly for every update to a library – creating something of a monopoly on market or regulatory change.

Consultancies, after all, are “thought leaders” first and technology providers second. Without the necessary expertise in fintech, they may be less adept than actuarial software specialists at creating a robust end-to-end modeling and reporting process.

Above all, a direct provider of open actuarial software will be continuously and routinely developing its libraries behind the scenes, keeping abreast of every regulatory change and making sure it's early to market with solutions for new accounting standards and principle-based rules.

As a result, your calculations will always be up to date in good time without your having to pay extra for the privilege. And at the same time, you're free to work with other partners to help the software meet your requirements.



4. Security



Whether you run your software on-premise or in the cloud, keeping it secure from cyberthreats is a complex challenge.

The answer, though, is surprisingly simple. You need a software provider that invests heavily in security and carries out all the necessary penetration tests, checks for vulnerabilities and compliance audits on your behalf.

5. Speed and scalability



As regulatory reporting requirements become more complex, today's insurers have more disclosures than ever to report – but no more time to deliver the results.

In a managed cloud environment, advanced actuarial software will scale easily and cost-effectively to sudden rises (or falls) in the volumes of reported data. But its developers will also be working constantly to step up the speed and efficiency of your model runs.

With every minute costing money in the pay-as-you-go cloud, you need as many levers to pull as possible to turbocharge models and improve your run time – including the ability to extend formulas, configure report settings and set variable targets.

However, at its best, software can accelerate more than run time. When a technology partner provides centralized code, insurers can respond faster and more effectively to new challenges and speed up their ability to carry out ad-hoc analysis or price a new product – all without spending more money on a consultant.

6. Integration



No actuary is an island. Many different stakeholders across an insurance business need to consume actuarial results and use them for strategic planning and decision making.

The question is, does your technology provider understand the needs of these stakeholders? To deliver the right insights in the right format and level of detail, it's critical that software can integrate seamlessly and exchange data effortlessly with a wide range of other internal systems.

7. Confidence



In a modern world where technology is advancing quickly, you need an actuarial software specialist that is constantly investing in the latest capabilities – but is also financially stable.

Since the collapse of Silicon Valley Bank, which lent primarily to small technology companies, there's been growing anxiety about the stability and reliability of fintech providers. That makes it all the more important to invest in tech from larger, more established firms with years of industry experience and partnerships behind them.

When your insurance business runs its actuarial models on an open platform with centralized code, confidence can also come from the wider community of users. By exposing new code globally to all its clients – and developers – for group review, the platform's provider can incorporate feedback into its libraries.

Then, as enhancements and fixes are shared with the global user community, the code becomes more robust and functional over time – while keeping up, as ever, with changing actuarial requirements.



Choose a software vendor that's always on top of change

FIS® Insurance Risk Suite provides a single, highly automated platform for actuarial modeling and risk management with integrated capabilities for pricing, valuation and projection.

With the backing of the largest fintech provider in the world, scalable technology and robust security measures, the solution gives you the flexibility to model and analyze complex risks across your enterprise, in a tightly governed but high-performance environment – on-premise or through the cloud.

And with more than 20 actuarial libraries, you can model your whole insurance business, carry out sophisticated asset liability management and meet all the latest regulatory requirements head-on.

Insurance Risk Suite is used by more than 1,000 insurers in nearly 100 countries. Some clients have been with us for as long as 34 years; others joined us for the first time in 2023. Talk to us now to learn how we can support your business – and help your actuaries stay on top of change.



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FIS is a leading provider of technology solutions for financial institutions and businesses of all sizes and across any industry globally. We enable the movement of commerce by unlocking the financial technology that powers the world's economy. Our employees are dedicated to advancing the way the world pays, banks and invests through our trusted innovation, absolute performance and flexible architecture. We help our clients use technology in innovative ways to solve business-critical challenges and deliver superior experiences for their customers. Headquartered in Jacksonville, Florida, FIS ranks #241 on the 2021 Fortune 500 and is a member of Standard & Poor's 500® Index.



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