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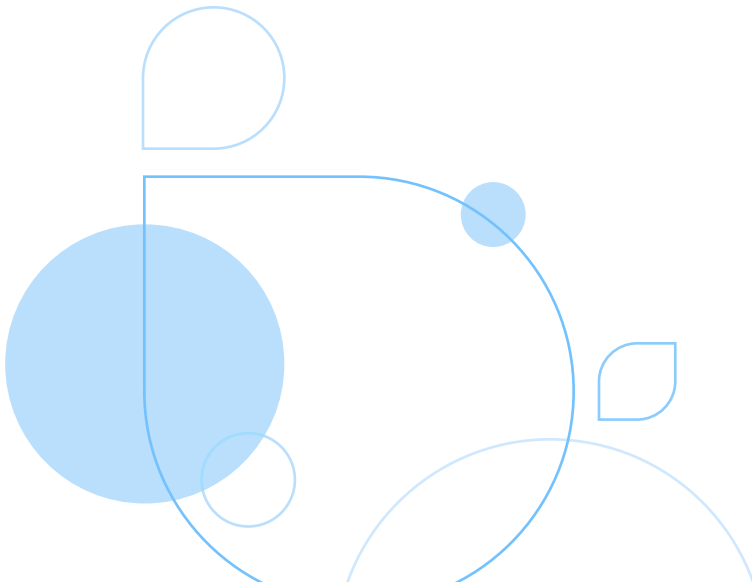# Ready to see results from your actuarial investments?

Learn how AI-enhanced processes can boost innovation and profitability

Contents

As customer behaviors change radically, insurers must move faster. That means adopting new approaches and capabilities to stay ahead of competitors and to attract customers with the right products at the right time. Some key market factors are:

- Increased competition heightened by the ease of comparing prices online.
- Availability of new data sources (such as telematics data), which drives new product and pricing opportunities.
- Changing attitudes about loyalty, which affects policy retention.

Many insurers have familiar concerns, such as:

- Adapting faster to the market – currently, it can take months to get updated rates approved and into the market.
- Remaining relevant and competitive – which requires more insightful pricing models.
- Improving operational efficiency to support agility and a modernized approach.
- Protecting the customer base.

The role of risk management and decisioning

To balance their portfolios, improve actuarial models and make smarter choices, insurers can combine risk management and decisioning techniques with environmental, social and governance (ESG) principles. Doing so can help to reduce risk, prevent fraud and ensure adherence to growing regulatory demands.
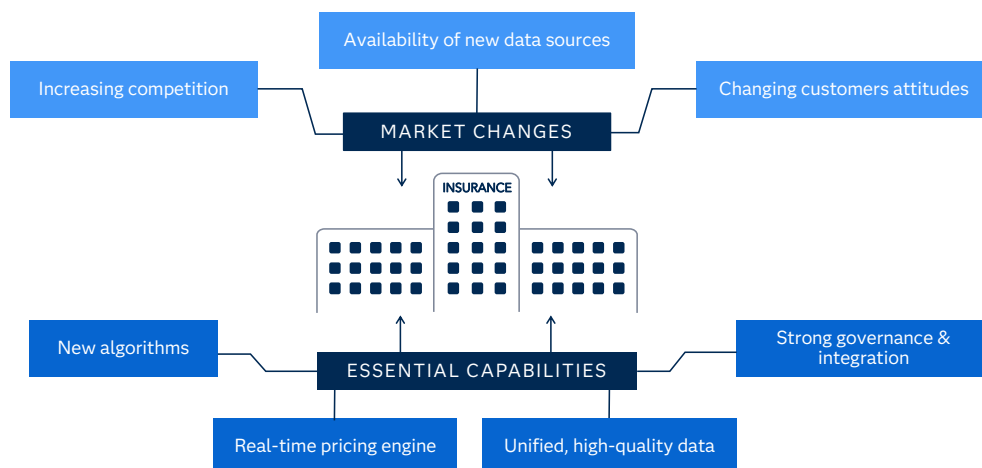
How can you take actuarial processes to the next level to achieve even more? Consider applying:

- New algorithms that support more competitive premiums.
- A real-time pricing engine that allows faster premium deployment.
- Governance and integration of new technologies into your actuarial processes.
- Methods to reduce unexpected risk and tighten standard deviations – helping minimize the uncertainty of loss.

Even fractional improvements in the combined ratio on a $1 billion book of business can result in millions of dollars in compounding returns.

Figure right: SAS Dynamic Actuarial Modeling provides a guided and governed actuarial process – from data preparation and modeling to automatic deployment and firmwide integrated reporting.
To improve decision making processes, you can also incorporate predictive analytics with your existing rule-based systems. This approach is especially valuable when introducing new insurance products or services and fine-tuning pricing strategies.

Market changes and customer behavior are requiring new approaches and capabilities

Availability of new data sources

Increasing competition

Changing customers attitudes

MARKET CHANGES

INSURANCE

New algorithms

Strong governance & integration

ESSENTIAL CAPABILITIES

Real-time pricing engine

Unified, high-quality data

Weighing costs and understanding value

All benefits come at some cost. In addition to new software, there are implementation costs and the issue of adapting to new actuarial and technical processes.

Such costs can be offset by both qualitative and quantitative benefits, improved profitability and reduced operating costs. And while it's relatively easy to quantify (in advance) the costs of acquiring software and hardware and implementing a solution, it's harder to obtain an overview of all potential benefits upfront so you can justify investments.

Some customer benefits achieved with SAS Dynamic Actuarial Modeling

- 15% fewer issues with the quality of data used for modeling.
- 20% less time required to integrate external data sources.
- 95% less time to deploy new insurance rates, leading to a 75% reduction in deployment costs.
- 50% lower cost of premium modeling.
- 50% (or more) retention level for key segments.

How SAS can help insurers

More than 88% of actuaries say SAS improved their way of working. Let's examine some of the reasons.

Lower operational costs and improved scalability of the actuarial process

Using SAS, insurers work within an integrated, collaborative environment. This enables more efficient processes for the entire actuarial process – including model development, model governance, monitoring and visualization. In turn, insurers have reported:

- Elimination of data silos.
- Faster time to market.

Portfolio optimization

Optimizing the portfolio strategy is enhanced when insurers can build an accurate renewal/lapse model and when they significantly reduce the manual efforts involved in setting global and local constraints. With SAS, the entire premium modeling process is self-contained in a single tool, which speeds deployment. Having a guided workflow and a fully auditable and traceable solution also assists and speeds up practitioners' work.

A German insurer estimated a more than 50% efficiency gain in its technical pricing process. Freed-up actuarial resources are now available for value-added work, such as model improvement, benchmarking or optimization.

Faster, more advanced premium modeling changes

Insurers who seize advantages from automation, standardization and better asset reusability can change their premium model as often as needed. Using more advanced techniques for variable selection and premium modeling innovation also helps keep them up to date with competitors. Some of the advantages include:

- Developing more innovative models by incorporating new data types in the modeling (like low-frequency climate risk data).
- Gaining deeper insights and finding additional risk factors that could influence the premium model because of having time to dig deeper into the model that defines the rates.

Four scenarios for insurers

Based on real project experiences and weighing tradeoffs from technology investments, we developed four scenarios to illustrate potential benefits insurers could expect to achieve based on their company size, structure and other variables.

Note that these examples represent potential benefits only and do not guarantee any certain result or compliance goal. Each insurer must calculate an individual return on investment for their company and unique situations. Ultimately, the benefits you receive will depend partly on your current actuarial pricing capabilities and platform maturity.

Read the Appendix to understand how we calculated our scenario results.

Scenario 1: A mid-sized US property and casualty (P&C) insurer with double-digit premium growth and a greater than 100 combined ratio

- **The challenge:** Manage the total cost of ownership for technology and improve the expense ratio.

A Spanish insurer estimated a 15% (or more) gain in renewal profit due to an optimized renewal pricing and underwriting process. They also saw a 50% gain in key client segments – despite economic difficulties.

The value SAS can bring to benchmark P&C
Impact on key drivers

$8.2 M
3Y benefits

$1.1 M
New business & customer retention

$0.8 M
Productivity improvement

$6.3 M
Loss ratio improvement

12 Months — Payback

414% — ROI

0.50% — Loss ratio improvement

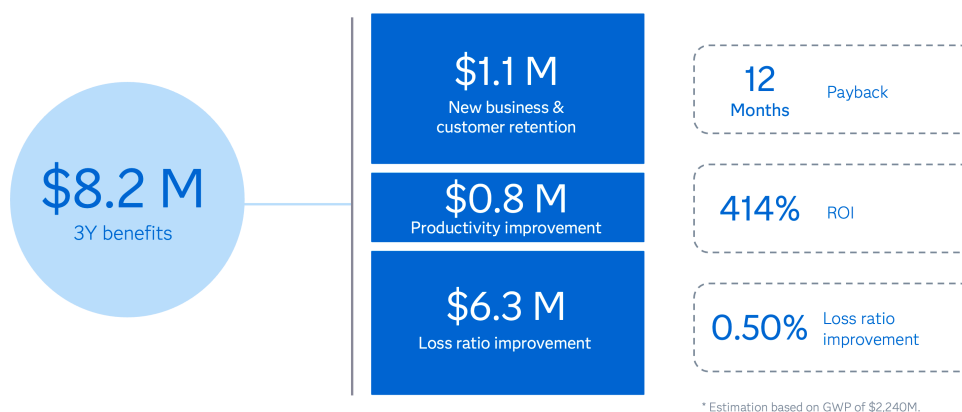* Estimation based on GWP of $2,240M.

Figure: More than 400% return on investment.

Scenario 2: A $60+ billion insurer with less than double-digit growth and around 26% expense ratio

- **The challenge:** Generate additional gross written premiums while gaining the benefits of SAS Dynamic Actuarial Modeling.

The value SAS can bring to large P&C
Impact on key drivers

$258.9 M
3Y benefits

$63.4 M
New business & customer retention

$0.9 M
Productivity improvement

$194.6 M
Loss ratio improvement

12 Months — Payback

391% ROI

0.60% Loss ratio improvement

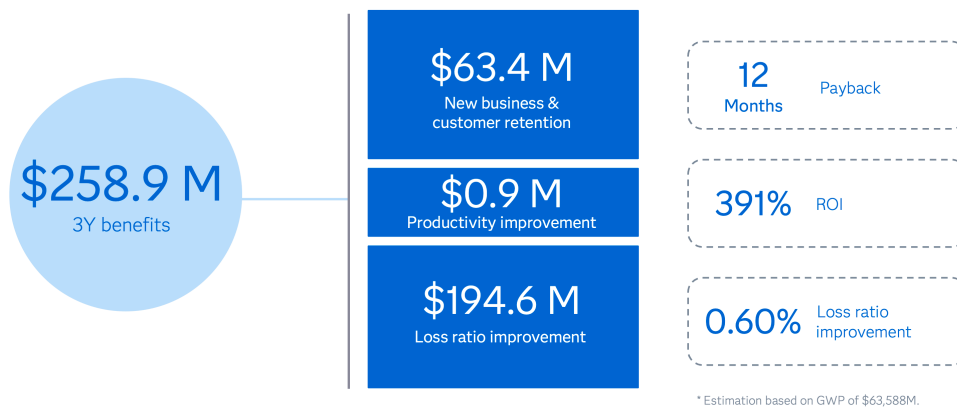* Estimation based on GWP of $63,588M.

Figure: Nearly $200 million in loss reduction.

Scenario 3: A $40+ billion regional life insurer with negative single-digit growth and less than 20% expense ratio

- **The challenge:** Reverse declining market share and enhance distribution channels.

The value SAS can bring to benchmark life
Impact on key drivers

$128.8 M
3Y benefits

$43.6 M
New business & customer retention

$2.2 M
Productivity improvement

$83.0 M
Loss ratio improvement

8 Months — Payback

406% ROI

0.60% Loss ratio improvement
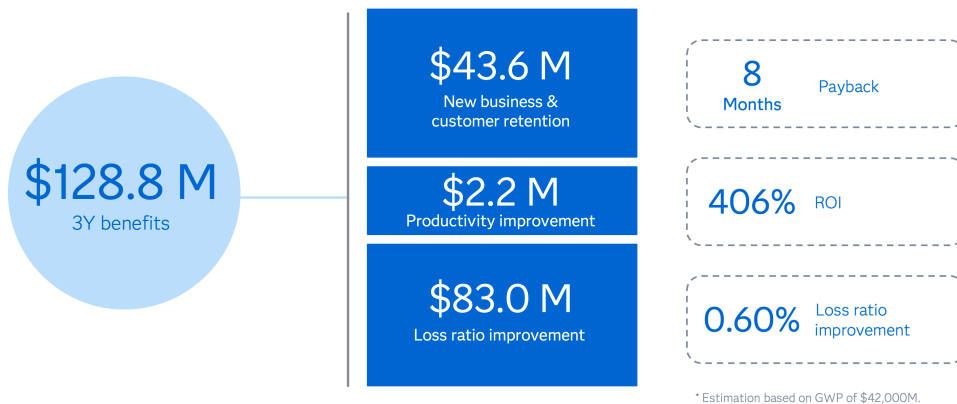
* Estimation based on GWP of $42,000M.

Figure: Payback in just eight months.

Scenario 4: A global life insurer with less than a 20% expense ratio and a mix of 80% life/health and 20% P&C growing low single digits.

- **The challenge:** Increase revenue streams and diversify the product portfolio.

The value SAS can bring to large life
Impact on key drivers

$652.6 M
3Y benefits

$355.2 M
New business &
customer retention

$1.2 M
Productivity improvement

$296.1 M
Loss ratio improvement

13
Months   Payback

376%   ROI

0.60%   Loss ratio
improvement

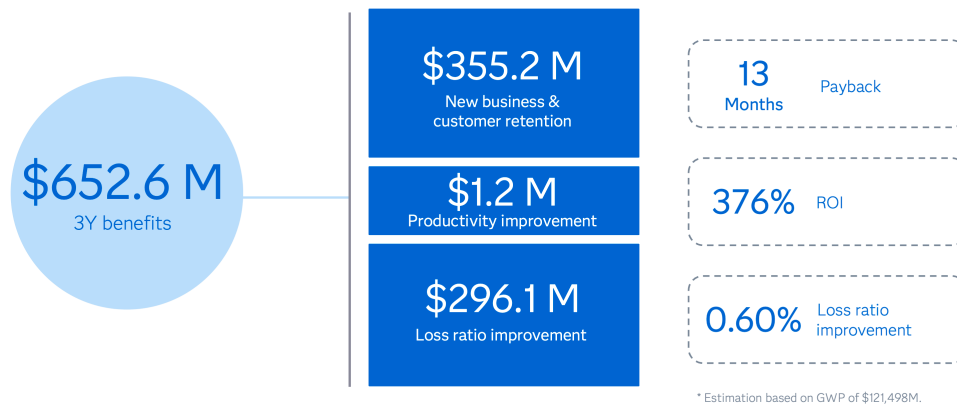* Estimation based on GWP of $121,498M.

Figure: Over a quarter billion in loss cost reduction.

Appendix: How we calculated our results

Following are explanations of the assumptions we used when developing the four scenarios featured in this paper.

- Different gross written premiums (GWP) and salaries were taken into consideration, depending on the size and region of the insurers.
- Improvements in the three pillars for each scenario are based on a combination of proven customer experience with projects and proofs of concept.
- Productivity improvement is calculated as:
  - Invested time in the premium calculation process, times the time percentage improvement of the process, times the average salary of the team involved in the process, times the actual number of times per year of premium calculation. This was assumed to be 2, divided by (V) desired number of times per year to run the premium calculation, assumed to be 4.
- New business and customer retention improvements are calculated as:
  - New business:
    - The percentage of yearly new business from the whole GWP, assumed to be 20%, times the expected improvement, assumed to be between 0.5% – 5%.
  - Customer retention:
    - The % of customers that are profitable, assumed to be ~27% (One-third of the 80% GWP of the non-new yearly business from the whole GWP), times the expected improvement, assumed to be between 0.5% – 2.5%.
- Loss ratio improvement is calculated as:
  - The percentage of yearly new business from the whole GWP, assumed to be 20%, times the expected improvement, assumed to be between 0.5% – 0.6%.
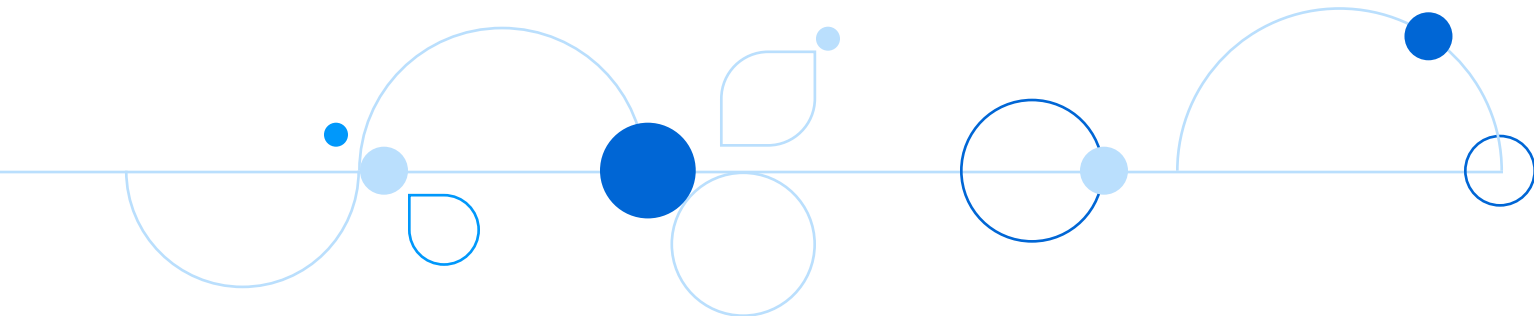
**Contact us to learn how SAS can help you take full advantage of AI-powered insurance.
Please visit sas.com/dynamic-actuarial-modeling.**

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