

# How to compete in the new era of customer-centric insurance

Adopt an agile pricing strategy that recognises changing behaviour and risk profiles



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“People are generating more data than at any point in human history, giving insurers huge insight into their behaviour and risk profiles. This is transforming the industry with innovative, tailored and customer-centric products. For those looking to compete or grow, the challenge now is how to build and maintain a new breed of pricing models at scale, leveraging machine learning and advanced analytics.”

**Norman Black**

Insurance Industry Principal EMEA, SAS

## A changing consumer landscape

People are navigating their lives in a radically different way, compared to only a few years ago. The digital revolution continues to transform all aspects of how we live, work, socialise, communicate, travel and consume.

If you are starting a new job today, for example, it is less likely to involve a traditional nine-to-five routine. Flexible working is on the rise as technology makes it possible – and preferable – to be productive away from the office. In fact, 70% of employees now work somewhere other than the office for at least one day per week, and 53% work remotely for half of the week or more<sup>1</sup>.

Today’s workforce is also less dependent on, or desiring of, a regular salary. A younger generation of employee is emerging that is happy to move around jobs and professions. They are comfortable with a ‘portfolio career’, where they work multiple jobs, or have a ‘side hustle’ to pursue a passion project, or use the gig economy to supplement their income when needed. This type of temporary work in Britain has more than doubled in size over the past three years, with 1 in 10 working-age adults now using a gig-economy platform<sup>2</sup>.

The generational shift to a more flexible lifestyle has brought a new perspective to the two big life purchases: a house and a car. It used to be that getting a mortgage and owning your own vehicle went hand in hand with getting that first proper job. But today, many see these as liabilities, rather than assets. Younger people can see ownership as a burden or a restriction, and are much happier to rent, share and pay for services as they go. For example, 78% of people aged 18-24 have used a sharing platform for transport and accommodation, compared to just 39% of the over 55s<sup>3</sup>.

Economics and market conditions are a key underlying factor in this, of course, but the shift has also been driven by the rise of mobile phones, always-on connectivity and easy app-based services, like Uber, Deliveroo and Airbnb.

People have embraced the flexibility and choice that these digital services enable with just a tap and a swipe. And this mode of accessing services has very quickly become the default expectation – hence the cross-industry mantra of ‘digital transformation’ and why nearly all organisations have some strategy in place to modernise their operations.

As we’ll see next, the impact on the insurance industry runs even deeper.

People have embraced the flexibility and choice that digital services enable with just a tap and a swipe

<sup>1</sup> IWG, Global Business Survey, 2019

<sup>2</sup> Future of Work Research, University of Hertfordshire, June 2019

<sup>3</sup> UK Sharing Economy Consumer Survey, Warwick Business School, July 2017

## New expectations for insurers

There are two interlinking implications of the digital revolution for insurers – and both are an imperative to thriving and surviving in a competitive market:

### How do you keep pace with new entrants who are offering a modern, Uber-like user experience?

From a user experience perspective, customers want their web or app interface to be easy to use; they want meaningful self-service capabilities; and if they need to get in touch with their insurer, they want a joined-up journey without having to repeat information.

### How do you provide services and products that offer suitable cover for people's changing behaviour and risk profiles?

But even the greatest user experience will count for nothing if you don't offer the right services to start with. As people pursue new work patterns, lifestyles and consumption models, they face different risks, so want and need new types of insurance – such as:



Pay-as-you-go motor cover when borrowing a friend's car for the weekend



Quick and easy replacement of essential life items (e.g. phone, laptop, headset)



Per-day professional indemnity and cybersecurity cover for freelance and contract work



Scooter insurance to cover periods as short as one hour, perfect for delivery drivers



Autonomous car insurance that covers loss or damage caused by operating system failures

### Customers also expect to be rewarded for lower-risk behaviour and treated fairly in terms of pricing, for example:

- Health insurance schemes that reward people who adopt a healthier lifestyle with lower premiums and other benefits, using data from subsidised wearable devices
- 'Black box' car insurance that lowers monthly premiums based on safe and responsible driving habits, recorded by vehicle telematics and GPS
- Transparency of prices at renewal time to ensure existing customers have access to a fair and competitive deal

## New challenges to overcome

These expectations present a new set of challenges for insurers and pricing teams. Beyond the balancing act of having to compete on price while optimising profit, there's now demand for more adaptable and personalised policies.

As we've seen, insurers need to understand that customers are living more flexible lifestyles with different risk profiles, and they are demanding more innovative products with fairer and transparent prices.

There are nuances for insurers to get right too, such as auto-renewals. While needing to treat customers fairly and give them freedom to choose the best-priced policy, insurers also have a duty of care not to leave customers knowingly exposed without insurance.

Building trust with customers will allow insurers to factor in a broader set of data sources (e.g. location data, device information, real-time health stats), so they can build new pricing and risk models capable of responding to these new customer expectations.

This is what the new breed of digital-native insurers do so well, and it presents an existential risk to traditional insurers who fail to adapt.

## Market changes

- Increasing competition (e.g. online comparison sites)
- New data sources that drive new pricing opportunities (e.g. from telematics and wearable devices)
- Changing customer attitudes to risk retention and loyalty

Let's now consider the limiting factors facing data science, pricing and IT teams striving to adapt to this changing landscape.





## Typical model development can't keep pace

The model development lifecycle that many insurers follow has served the industry well for many years.

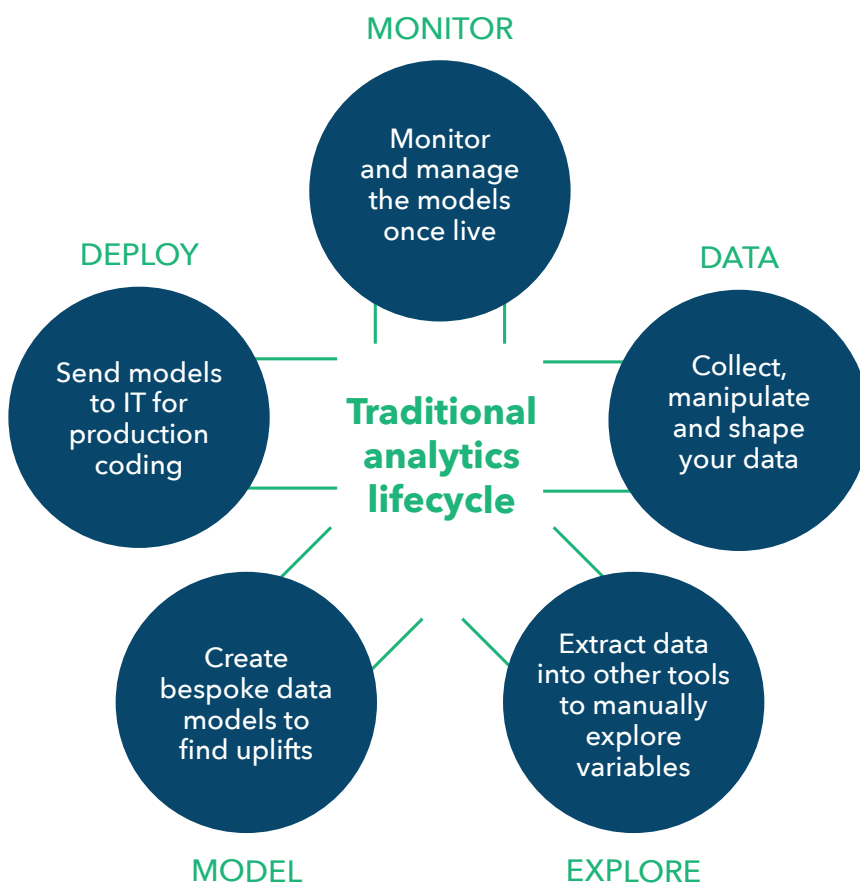
But the market is moving faster than it ever has before. Increased demand for innovative new product types, policy durations and pricing strategies is starting to expose inefficiencies in the development process, and limiting the effectiveness of the models emerging from it.

For many insurers, the key steps in the modelling lifecycle are fragmented, with inherent limitations on the volume of data and range of analytical techniques that can be applied. Meanwhile, competitors are seizing the benefits of machine learning, and taking market share from those who don't respond and find their own edge.

As pressure increases on teams to bring new products to market faster, and to factor in new data sources, they are facing challenges at every step:

It takes too long to prepare our data, as there are more sources and variables to consider.

We need to become accustomed to working with larger, event based-datasets to help us explore new digital insights that give us a competitive advantage.



## Data

Put simply, more data exposes inefficiencies in your data-preparation and data-quality processes. Skilled people spend a lot of time preparing and cleaning data manually, which means they have less time to focus on high-value tasks such as model development or deployment.

## Explore

Data has always helped inform decisions and improve performance. But as datasets grow to an enormous scale – with new information from connected devices and digital behaviour – they are becoming nearly impossible to clean and interrogate manually, due to limitations in storage and processing power. Insurers often resort to using data samples as a result, which limits their ability to explore new modelling techniques and risks losing access to valuable, unique insights.

## Model

Insurers need to look beyond linear models for pricing. They need to explore a broader range of models and adopt a ‘champion challenger’ approach to identify which models provide the accuracy needed. This needs to be done without losing any of the necessary governance throughout the process – from raw data collection through to model selection and deployment. Models developed in open source languages should also be encapsulated, to make the most of the skills across the analytics community.

## Deploy

After new models have been developed by actuaries and data scientists, the next challenge is getting them into production – especially as there is growing evidence that only a small percentage of machine-learning models ever go live. Organisations that want to become a true market leader must be adept at deploying and managing tens or even hundreds of models. As we’ll see next, this can be achieved by leveraging the DevOps approach used so successfully in IT to bring new services to market quickly.

## Monitor

Traditionally, once models are up and running, they are tracked and monitored in a manual way. But as the number of models increases, this approach isn’t sustainable for already time-pressured teams. Yet monitoring is more crucial than ever as regulators increase their watch over the industry to ensure fairness and transparency. Insurers must therefore consider ways to automate the monitoring and re-training of their growing number of models.

The time needed to build hand-coded models and accommodate a range of programming languages means we are less responsive to market changes.

Data science teams have vast expertise and knowledge, but a new approach to developing models is needed to predict risk more effectively and accurately. By moving away from Generalised Linear Models (GLMs) and towards Gradient Boosting Models (GBMs), insurers can make decisions that align closer to 'actual' events - and thereby improve their profitability.





## Accelerating the analytics lifecycle with ModelOps

We've seen how insurers are under increasing pressure to bring new products to market quicker, as customers demand new and innovative insurance products to fit their changing lifestyles - and how this requires a more agile development process. Insurers also need to consider more granular risk segmentation, applying more models to more segments of customers to win more market share at the right price.

It's a challenge familiar to many other industries, where traditional companies are pursuing digital transformation to keep pace with start-up disruptors and tech giants that offer more personalised, modern, app-based services.

Many companies have adopted the methodology now known as DevOps to help. This aims to bring new applications and offerings to market faster by improving communication and collaboration between development and IT operations teams.

In the insurance world, the DevOps approach can be applied in a similar way - known as 'ModelOps' - to help data science and IT teams work closer together and move new models into production faster.

ModelOps focuses on getting models from the lab, through to validation and testing, and then into deployment as quickly as possible, while ensuring quality results.

It enables teams to:

- Develop and deploy models smoothly and efficiently
- Manage and scale models to meet demand
- Monitor models continuously to spot and fix early signs of degradation

The aim is to operationalise analytics - to get models out of the lab and into production - by fostering dynamic collaboration and improved productivity between teams, regardless of what coding language is used. Enabling the last mile of analytics.

Modelling risk in a scalable way is more critical than ever. But how do you ensure it delivers the right business outcomes?



### DATA

Access data from a trusted source and align it to privacy and security standards



### MODEL CREATION

Create models with a deployment scenario in mind to avoid re-work



### GOVERNANCE

Preserve data lineage and track-back information for governance and audit compliance



### DEPLOYMENT SPEED

Do it all in minutes, not months, with close collaboration between data scientists and IT



### MODEL MONITORING

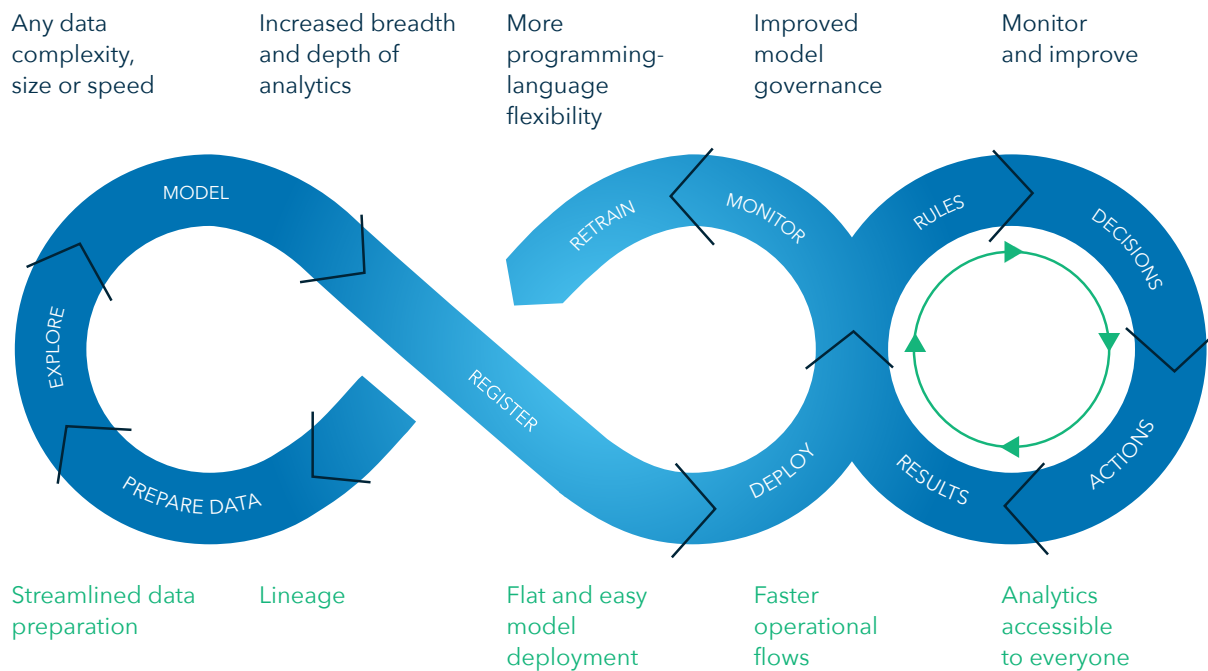
Deploy models with a monitoring mindset so analysts can monitor and retrain models as they degrade

## Enabling the last mile of analytics

To fully capitalise on this new normal, where hundreds of complex models are being deployed and maintained, insurers need assurance that ModelOps is driving real business results.

You need to know that all the complex rules and decisions that you're deploying are having the right outcomes - i.e. that the business accurately understands each customer's risk profile, that customers are being offered the right cover at the right price, and that they see you as an innovative and responsive provider.

This means getting the 'last mile' of analytics right - by surfacing customer insights via APIs across your business systems, so all teams can deliver the best-possible service and experience. To help with this, SAS has developed a single analytics layer to sit across the full analytics lifecycle, providing better control and visibility of how models are used.



The SAS Platform brings different models together in one standardised format, no matter what coding language they were developed in - and our modular approach supports full integration with existing actuarial engines and tools. Not only does this allow teams to collaborate closer and get models into production faster, it provides full transparency on how they are used.

By setting clear rules based on data, insurers can then make informed, responsible pricing decisions that are right for the business, and that win customer trust and loyalty.

This approach also provides a strong foundation to evolve the ratemaking process - enabling insurers to offer more competitive tariffs and support new capabilities, such as real-time pricing and renewal optimisation.

## Three ways SAS can transform your pricing

### 1. New ratemaking capabilities – for more precise modelling

To help you build benchmarks and discover new variables quickly, SAS has developed a visual modelling interface that accelerates the data exploration and discovery process.

It allows you to blend traditional techniques like GLM with advanced machine learning capabilities (e.g. Neural Networks, Gradient Boosting and Random Forest), in a simple drag-and-drop interface.

As a result, you can build prototype models in just 30 seconds – and quickly and accurately assess variables to be included in the tariff.

### 2. Optimised renewal pricing – to get the most from existing portfolios

Setting the right renewal price for each customer profile, so you can meet revenue and retention objectives, requires a flexible, high-performance optimisation engine.

The SAS solution can be deployed easily alongside your existing tariff-modelling engines, as integration is only needed at the data level.

Users can typically master the simple visual interface in less than a week, which has multiple configuration options to explore. A key feature is the ability to perform granular comparisons between different scenarios, with no limit on data size.

### 3. Real-time pricing capabilities – for agile tariff deployment

If you want to bring complex tariffs and real-time pricing to market quickly, you need a flexible underwriting engine that supports advanced decisioning workflows.

The SAS platform allows you to deploy tariff and underwriting policies directly from rate books into a decision flow, which can then be tested by business users without the need for recoding.

To provide the right price at the right moment, it can also incorporate Comparative Market Analysis services and online behaviour variables, so you can offer dynamic pricing and discount models.

#### Your benefits at a glance:

- Develop new tariff models using machine learning
- Bring tariffs into production much quicker
- Embed complex models for real-time pricing optimisation
- Optimise renewal pricing using a dedicated algorithm
- Compare different scenarios in detail via an easy-to-use interface
- Analyse unstructured text data to assess new types of risk

## How SAS is helping customers today

### Caser Seguros

Caser Seguros is a Spanish insurer, offering products ranging from home and car insurance to health and life cover. They operate in a price-competitive market, with high rates of customer churn.

Using SAS Customer Analytics to refine their pricing strategy and policy models, we're helping them to grow a loyal customer base.

#### Key results to date:



For us, the predictive capability of SAS is essential. It's vitally important for us to be prepared for churn and capable of launching retention initiatives quickly.

### Covea

Covea is one of the biggest insurers in Europe, offering both commercial and personal product lines. They issue over 10 million quotes per month via traditional linear rate-making processes.

To prepare for further growth and larger datasets, SAS is helping them use machine learning to build, test and deploy new pricing models faster - with the aim of scoring incoming quotes in real time.

#### The integrated SAS pricing platform has helped real customers:

- Reduce ratemaking costs by 50%
- Cut the cost of tariff changes by 20%
- Improve conversion rates by 5x with Real-time pricing
- Increase existing portfolio profits by 15-20% with renewal pricing optimisation
- Increase overall profits by 1-3%

We're expecting significant improvements in our risk models and street pricing capabilities. Just a small fraction of a percentage improvement could lead to millions in savings.

## An easy first step to scalable, customer-centric insurance

Our specialist insurance team at SAS would be happy to engage with you as you consider your next step to a more agile and customer-centric pricing strategy.

To schedule an initial discussion, please contact your local office:

[www.sas.com/offices](http://www.sas.com/offices)



To contact your local SAS office, please visit: [sas.com/offices](https://sas.com/offices)

