

## Redefining insurance pricing in the digital transformation age

Digital transformation is on the rise in the insurance sector, with property and casualty (P&C) insurers, regulators, and other market participants across Canada prioritizing their investments in becoming digital.

This evolution—implementing automation, powerful machine-learning models, and open-source software—will profoundly affect how insurers price their products. And they can't do it alone: teams of actuaries, data scientists, and

IT specialists are joining efforts to redefine insurance pricing, with sophistication as the top objective.

Their first challenge? Speeding up the notoriously slow pricing process.

## Current pricing process

Pricing actuaries can currently spend anywhere between three to six months performing a full pricing analysis from start to finish. These analyses are complex, involving activities such as:

- Data retrieval and business planning
- Assumption building and actuarial pricing calculations
- Rate filing
- Rate implementation<sup>1</sup>
- Conflicting priorities and staff constraints

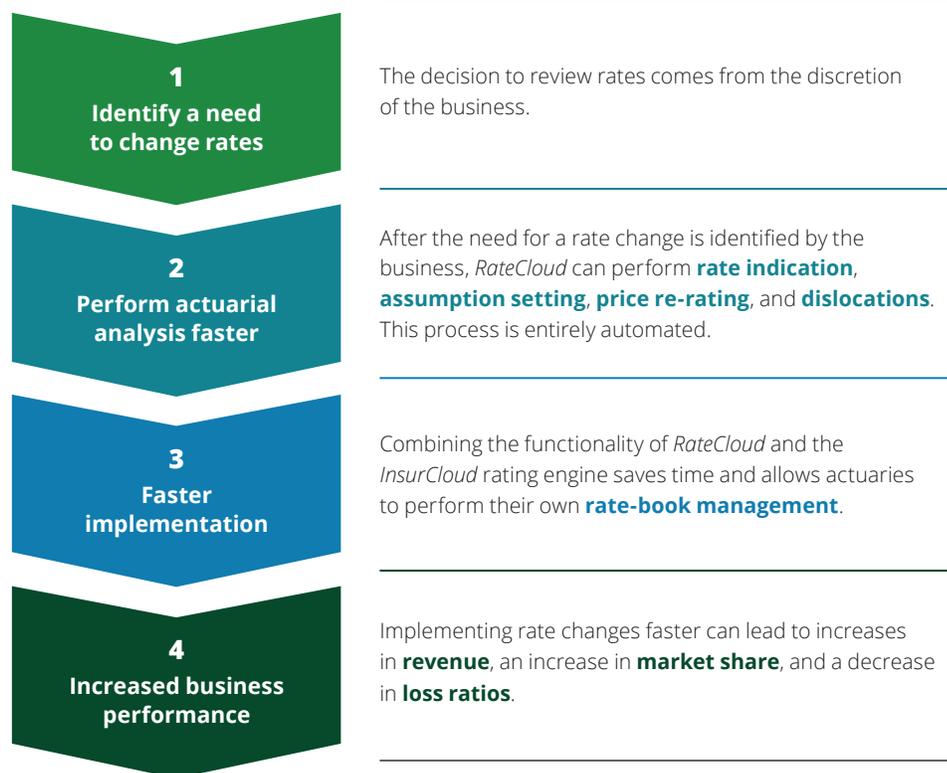
It's a lengthy process because the work involves extensive analysis and ongoing communication with other teams within the organization, from distribution to marketing to management. Actuaries have many challenges when building and maintaining their pricing models, from managing too many software platforms to communicating complex results to senior leaders (who don't always understand the intricacies of such analyses) to a lack of proper controls and governance, among other reasons.

As P&C pricing analysis becomes more sophisticated, it's important for actuaries to find effective solutions for their challenges, to streamline the pricing process, and to effectively communicate with other business users.

## End-to-end solution

To address the current challenges in ratemaking and rate filing, our Actuarial and Insurance Solutions (AIS) team has developed a flexible software platform to help insurers streamline every step of these complex processes. *RateCloud* is an innovative product designed to improve the efficiency and speed of pricing while eliminating human error.

*RateCloud* is both a software platform and process workflow tool that can be custom-built to suit a company's exact needs. Built on top of the open-source statistical software R, *RateCloud* can function in parallel to traditional pricing software and enhance in-house solutions, or it can be implemented as stand-alone pricing software.



## Rate filings in fast forward

*RateCloud* generates significant time savings throughout the pricing process by reducing manual computations. This enables actuaries to focus their time on more meaningful aspects of their work, such as assumption setting, rate strategy, and communications with other stakeholders.

The solution's simple, efficient, and governed processes saves time, too—up to 50%.<sup>2</sup> These time savings are

made particularly evident by *RateCloud's* built-in rate-filing package templates, which ease the compilation of various tables required by regulators. Although the user is responsible for creating a business case for the regulator, *RateCloud* simplifies the administrative work, resulting in a significant decrease in hours spent on the effort.

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## Enhanced integration with admin systems

*RateCloud* can be used across various policy administration systems, facilitating actuarial work on a wide range of topics. In its current version, it includes an integration layer with Guidewire.<sup>3</sup> Furthermore, our gwr R package can

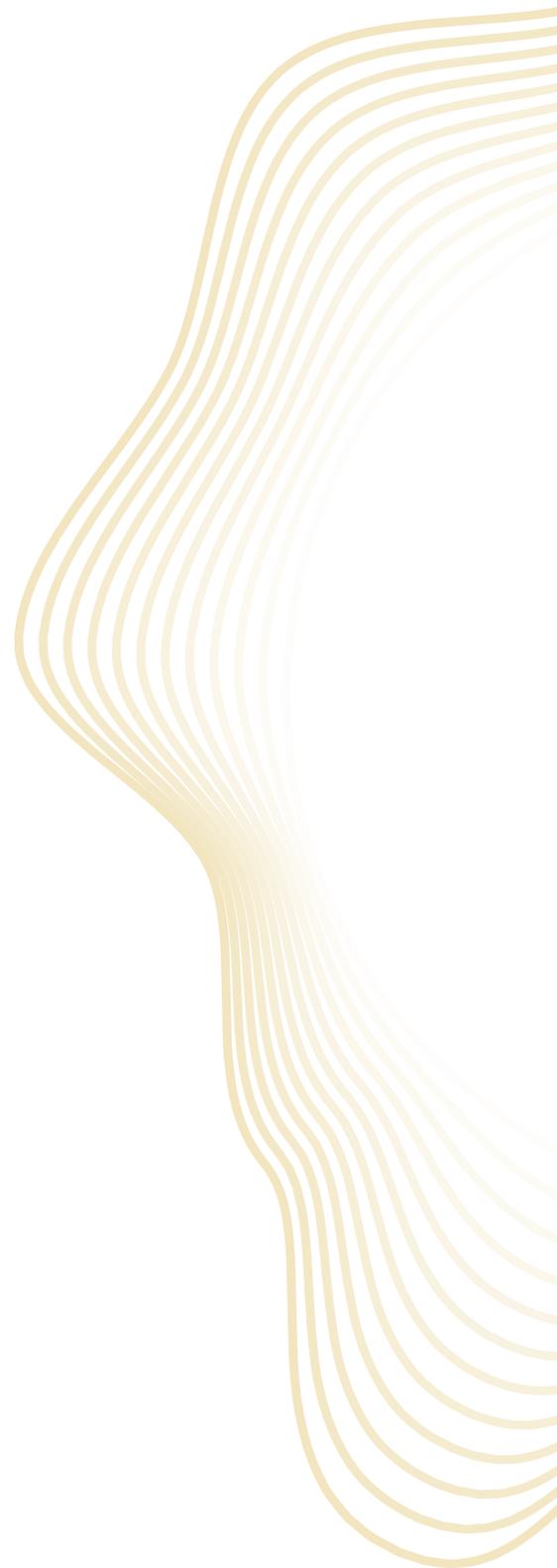
help explore, extract, and edit Guidewire XML rate books, including rate routines and rate tables. It can also help build bulk rating tools utilizing parameters from the insurance company's rate book.

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## *RateCloud* and COVID-19

As P&C insurers across Canada rushed to react to changing market dynamics in 2020, many faced limitations in resourcing, systems, and implementation. This led to prolonged turnaround time for rate changes and relief measures, not to mention delays in passing much-needed savings to consumers in a challenging environment.

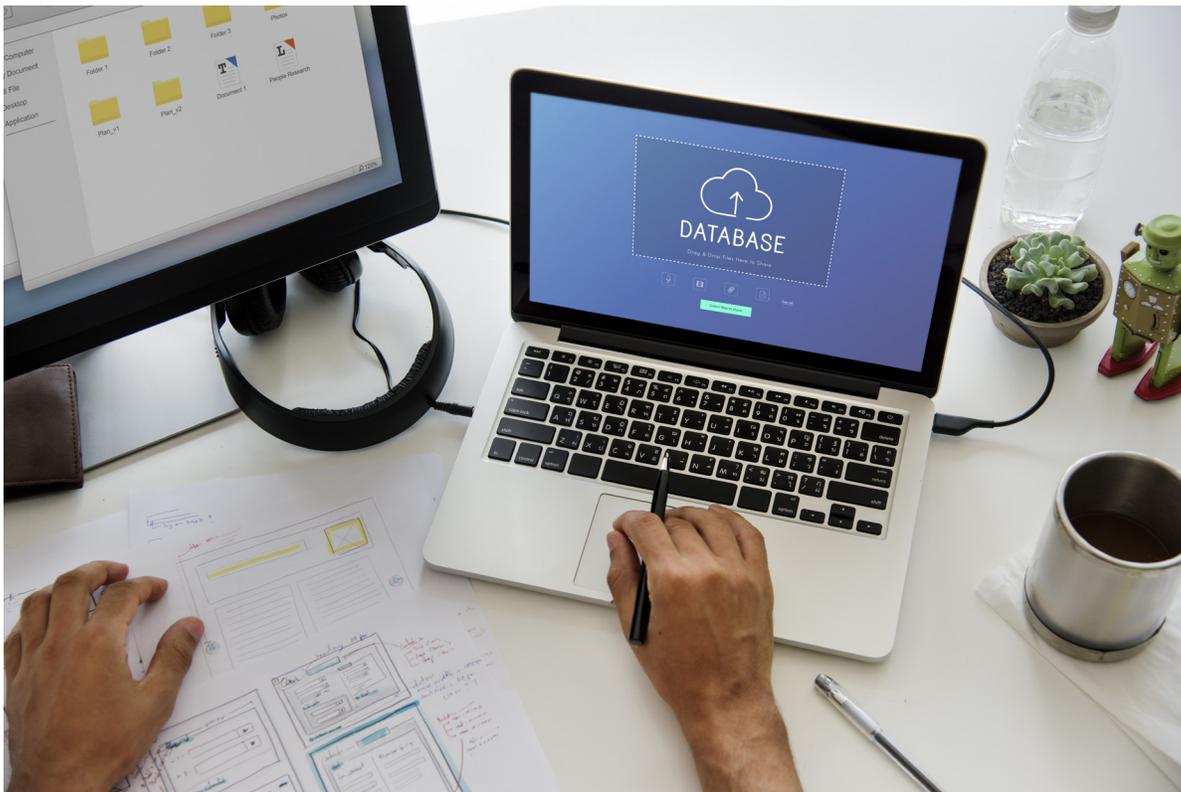
*RateCloud* allows insurers to use automation, amplifying their ability to quote rates closer to real-time and to compete in the marketplace. Had the software been available early in the pandemic, insurers could have, for example, accelerated the implementation of COVID-related discounts to policyholders and tentatively gained higher market share.



# Implementation options

There are two main options for implementing *RateCloud* in your organization.

Option	Benefit
A custom solution developed through <i>RateCloud</i> 's back-end R code	<i>RateCloud</i> is built with multiple proprietary R packages (pcrf, gwr, and rara). Therefore, one option is to use the gwr and pcrf packages to significantly speed up the custom build of an R or Python-based modelling solution. The advantage here is that the core actuarial calculations would not need to be developed from scratch, so the team can instead focus on advanced modelling and/or more efficient processes.
A <i>RateCloud</i> customized instance that provides full front-end functionality	An implementation of the core <i>RateCloud</i> product would still involve a custom-built solution, but the focus is on the functionality of the front-end actuarial modelling product. The implementation is handled by the Deloitte team and so does not require the client to perform any R-programming actuarial work.



# Working with Deloitte

Our AIS team is one of Canada's leaders in pricing and rating transformation, having worked with several of the top 10 insurers over the past two years. The team has highly trained actuaries and technology specialists with experience implementing a wide range of pricing software, including policy administration systems.

Throughout and beyond *RateCloud's* implementation, we also provide extensive support by:

- educating stakeholders of all levels about *RateCloud's* functions and abilities
- providing hands-on training for major functionalities

- offering continual technical support and updates as well as direct support

Virtually done: our team can work at scale on and provide technical and integration support without having to step foot on your premises.



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As one of the leading Canadian professional services firms, Deloitte is:

- Fully capable to work at scale on a remote basis
- Able to provide technical and integration support virtually

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Throughout and beyond *RateCloud's* implementation, we provide support through:

- Educating stakeholders of all levels about the functions and abilities of *RateCloud*
- Hands-on training for major functionalities
- Continuous technical support and updates
- Ongoing direct support

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As a service provider to Financial Services Regulatory Authority of Ontario and other regulatory bodies across Canada, we can:

- Support rate changes required by regulatory bodies
  - Work with actuaries through numerous rate changes to guarantee familiarity of *RateCloud*
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Have questions? **Let's talk.**

## Endnotes

1. Depending on the region, rate implementation may occur before rate filing.
2. Deloitte time study analysis
3. For more information on Guidewire implementation, please consider *InsurCloud*, a tool developed by Deloitte's Consulting practice that provides Guidewire users with base configuration and aims to streamline the implementation process.

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