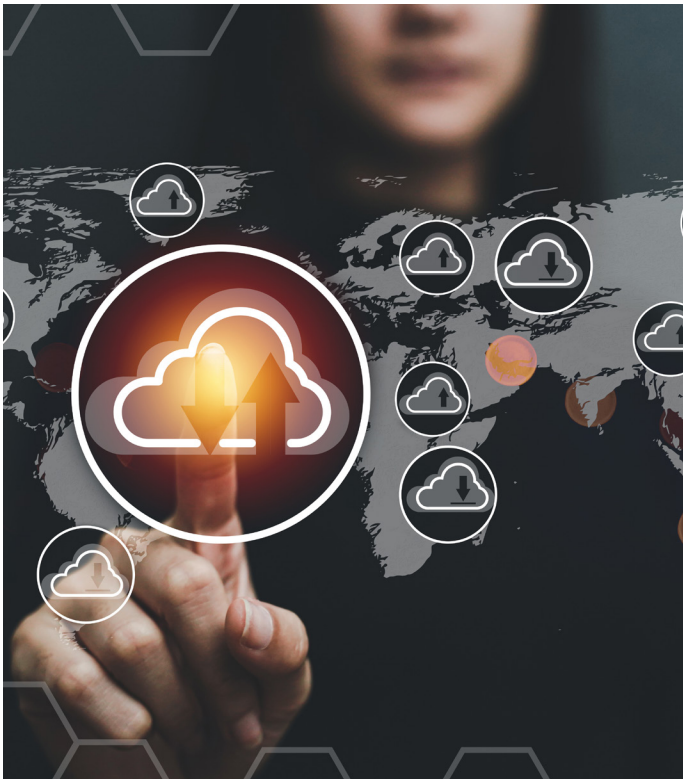
Article from

The Modeling Platform

November 2020

Five Surprising Benefits of Actuarial Model Conversion

By Stephan Mathys



In the past decade, many of the "standard" actuarial practices have been significantly revised. From new access to data sets to the introduction of principle-based reserves in the United States and International Financial Reporting Standard 17 (IFRS-17) across the world, to the introduction of cloud technologies that enable unprecedented scope and speed of calculation, actuaries are now expected to do more than virtually any generation before.

New technologies have enabled these transitions, and with them have come new use cases for those technologies. Robotic process automation, anyone? What about self-service cloud data storage? Or even just the fact that there are finally some real, viable alternatives to Excel.

One area many actuaries are now working in is the "actuarial modernization" effort, which encompasses the transformation from number crunching according to a set of rules to value-added analysis and actuarial judgment in the process.

Along with the changes to support new reporting data requirements, many actuarial employers have initiated actuarial system enhancements to perform the calculations using modern technologies. Those system enhancements are generally of two types. The first is to upgrade a legacy system to the newest version (like upgrading an old version of Windows, maybe Windows 7, to a newer version, such as Windows 10). The second is to purchase a new system and re-create models from the old system in the new one, and then compare results between them. For simplicity, I'll call both of these a "conversion" from here on out.

This article is not about the system selection decision, per se. Systems are chosen based on multiple criteria, and often those criteria are very technical in nature. For instance, simply understanding and tracking all of the cohorts from one period to another, and enabling analysis of change of the reserve balances, might be enough to convince the decision makers to convert from an antiquated setup to a modern actuarial system.

Instead, this article will support actuaries earlier in the process: during their push for converting to another system, to take advantage of advancements in the field since their last system decision.

Technical advantages from conversion are numerous. They include auditing current models and processes; creating a comprehensive view of all those processes; streamlining procedures; reviewing model governance structures and filling in the gaps; reviewing and revising materiality limits; retiring or merging unnecessary models; and discovering latent model risks.

Those who may be interested in changing systems, yet are finding resistance from decision makers, could find support in this article. They could consider using these arguments to make the case that an investment in the transition process would be worthwhile.

Those who have recently completed a system conversion may wish to refer to these ideas as well. They may be able to show broader return on their investment in a new system, in addition to the number of hours of processing time saved or bytes of data stored.

These nontechnical benefits fall into two general categories: what I'm calling cross-pollination opportunities and attitude advancements. All of these are separate from explicit technical modeling practice benefits previously mentioned.

CROSS-POLLINATION OPPORTUNITIES

Cross-Train Team Members on Products or Functionality

Model conversion offers a great opportunity for professionals who have only ever worked with a limited set of the company's products or processes to get an insight into other aspects of the company.

You can assign the universal life model conversion to the annuity team or vice versa. You could assign a pricing model to a valuation expert. This will bring new eyes to the process and often sparks questions of "Hey, why are you doing it that way? That's not aligned with what we do in our area."

This cross-pollination will broaden the skill set of the actuaries involved. Further, it can strengthen the backup systems you may need to call on if an actuary is promoted, takes a different position or even leaves the company.

Such diversity of thought and attitude strengthens the justifications for having your processes set up a certain way and can even bring new attitudes and perspectives to the problems involved. As a result, actuaries can become more robust professionals. Plus, the actuarial functions can evolve to be more resilient for having been tested, refined and improved throughout.

Systematize and Synchronize Processes Across Lines of Business or Functional Units

Most, if not all, of your divisions will have divergent models and model build processes. That is to be expected as you have different modeling needs, different data sources and different expertise.

However, similar to cross-training professionals, undertaking a model conversion project is an opportunity to review what's working across various divisions of your company and apply those best practices to other locales.

For example, if the annuity group has streamlined its assumption review and improvement process, maybe that will help the asset group with its cumbersome and outdated workflow.

Just as you might do with any individual element in a set of models within a single vertical division, comparisons across divisions can provide opportunities to pull out best practices that were previously isolated from the company as a whole and apply them across the board.

This advances capabilities and can enhance the work done, amplifying the effects of the model conversion process itself.

ATTITUDE ADVANCEMENTS

Develop a Culture of Innovation and Critical Thinking

Everyone is looking for competitive advantages. And as barriers to entry fall everywhere, all types of entities—from insurance companies to consultants to regulators—are looking to take advantage of these new opportunities. Those can be in the form of new technologies or new approaches to existing problems.

However, these new approaches can't be adopted when minds are set against change, innovation and advancement.

There's an old actuarial joke that illustrates the all-too-often state of affairs:

> Q: How many actuaries does it take to change a light bulb?
>
> A: How many did it take last year?

Very funny.

Unfortunately, this is illustrative of a traditional mindset: What was done before is good enough, so let's just go with that.

However, it also highlights an important skill that is sometimes missing in actuarial work: a willingness to try something new without knowing exactly what the steps are. And yet this is the component that is often most critical to innovation and discovery.

Most employers say they want that innovative, problem-solving mindset. Incorporating a new modeling system represents a step in that direction. It can be like "putting your money where your mouth is" when encouraging this perspective that looks for new ways to approach new challenges. After all, that's why actuaries are involved in the first place: to be innovative problem solvers, not just order takers.

Reduce Conversion Risk by Implementing New Systems in a Phased Transition

Remember, implementing a new modeling system need not be an all-or-nothing approach. Yes, it can be good for a company to have all models and modeling processes standardized, documented and implemented across all functions and lines of business. But that ignores the reality that many companies have blocks of business that just are not consistent in terms of model needs, data integrity or back-end support.

For example, individual life insurance and annuity policies will have differing modeling bases, different priority model outputs and different materiality thresholds from group life and group disability policies.

It's likely that these different business units already have different model systems in place. Some may be using a comprehensive actuarial system, while others have Excel spreadsheets or data warehouse applications that do everything for them. To assume that the individual life and group life actuaries must all convert their existing models to a new platform at the same time does not reflect the actual business needs of those departments.

Because of this, companies may find value in a limited conversion or trial of a single block or small product line before committing to converting the rest. This would limit their potential risk of overcommitting to the new system. It would allow them a chance to practice and refine their model conversion process as well. They could see what works and what doesn't with that line of business and adapt the remaining conversion process (including timelines and dependencies) to better reflect realistic expectations.

Plus, any good system should allow limited use and application, whether it's the number of users or the volume of policies you're choosing to model, with further scaling-up possible as your conversion process is evaluated, refined and optimized. You should never be required to make an all-or-nothing bet that you will be able to achieve a positive ROI on your investment in a new system.

Make the Investment in Actuarial Talent Pay Off

ASA and FSA credentials represent a significant investment of time (to study) and money (exam fees, study seminars, etc.). This is a two-sided investment, in that both the candidates and their employers have dedicated significant resources to achieve that credential. Having tools that allow those actuaries to harness that intellectual capital they have worked so hard and long for is an absolute must.

If you ask someone to do high-level work—optimization of a decades-long investment strategy for your block of multiyear guaranteed annuities, for example—and give them simplistic tools (e.g., Excel), are they going to be effective? Are they even going to be happy? Would they feel trusted and valued for their contribution?

Will they be working at the top of their credential?

Giving actuaries access to the best software and hardware that allow them to actually implement their knowledge is a payoff for both the actuary (greater job satisfaction, more time on task, less mental energy displaced on nonactuarial tasks) and the employer (faster processing, more robust analysis and greater longevity and tenure of talent).

To be frank, most actuaries didn't get into this profession to be software programmers. That's why a modern actuarial system is necessary for them to do their best work.

Without one, actuaries may be forced to spend time on tasks they're overqualified for (building spreadsheets or babysitting models as they churn) or just not skilled enough at (programming or debugging IT errors).

That's almost like hiring a very expensive courier who is doing nothing more than shifting data from one place to another in an endless cycle.

CONCLUSION

There is clearly a multitude of ancillary benefits that come from model conversion. The visible, system-synchronous benefits are easy to quantify. You'll have newer tools for cash flow modeling; you'll probably have access to cloud-based processing and you will often get the capability to handle whatever regulatory regime you have to report under.

These bonuses are less technological and relate to being better actuaries: clear understanding of your models (and the risks therein), greater robustness across your team and company, and a mindset that recognizes the value that actuaries bring to the table.

Far from being a headache and an intimidating challenge, model conversion can be seen as an opportunity. It's a chance to advance your practice and achieve a significant return on your investment in both your actuarial software and your actuaries themselves.

As a result, conversion to a new or upgraded system just may be an incredibly sensible business decision. ■

Stephan Mathys, FSA, is chief product evangelist for Slope Software. In his current role he enlightens actuaries to all the good they can achieve by using a modern actuarial system. He can be reached at *stephan.mathys@slopesoftware.com.*