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Software Selection: Process and Considerations

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“The times they are a changing.”

—Bob Dylan

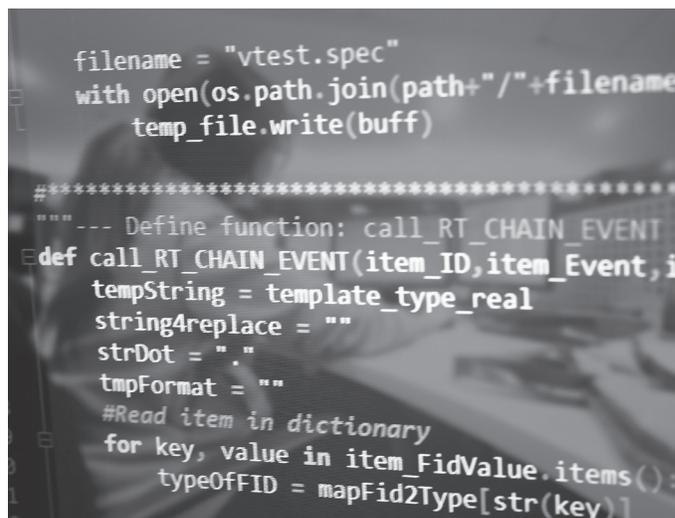
Yes, this is also true in the world of actuarial software. The demands of financial reporting and projection analysis, combined with the complexities of hedge calculations, have resulted in a mad scramble by life insurance companies to find the “perfect” platform. Not only does this platform need to flawlessly perform millions of calculations, it must also play nicely within a well-designed and controlled information technology environment, sometimes controlled by humans and other times by other machines.

Determining the need to “upgrade” software is the easy part. As new regulations require principle-based approaches, the demands on actuarial software have grown exponentially. Most companies update their financials monthly, which puts additional pressures on actuaries. The valuation process does not end with the creation of a set of balance sheet figures; it also requires a full set of analytics to explain any movement in the numbers.

A single reporting or unlocking period in which the reporting actuary runs out of time before fully analyzing the numbers will have the chief financial officer (CFO) demanding a process improvement. Normally the actuary will point to the computer and blame it, and rightfully so.

It is not possible to meet all the current needs without an efficient process. And one of the key components of the efficient process is using the right software.

This article will cover the key steps to an efficient and thorough actuarial software selection process as well as some of the complications companies have faced in selecting and implementing new software. We will cover both valuation and projection software as one since these two sides of the equation are converging. Although no one single correct approach to selecting new software can be identified, we hope to highlight some of the key considerations that should be part of this process.



THIS AFFECTS EVERYONE

Any change in software has wide-reaching affects within an organization. The actuarial department is just one of the areas that needs be part of the process. It is critical that all key stakeholders are identified from the beginning. These would typically include the office of the CFO, information technology (IT), operations and actuarial areas. Depending on organization’s structure, the list will be different.

This group needs to decide on a process to select a new platform and what the criteria for selection will be. It is critical that this be fully vetted up front so that all future activities are consistent with the plan. Last-minute haggling often occurs among the interested parties. Defining the decision criteria up front will help bring the process to a close at the appropriate time.

In most situations the key criteria will include the ability to meet the current and future functionality and reporting needs for each actuarial area and the ability for the platform to fit into the current or future technology operating model.

It is incumbent on the key stakeholders to assist in the process of refining the key criteria because this helps dictate how the process will unfold and what steps will be followed. Although the number of platforms under consideration is likely limited in number, each of them has different pros and cons across a wide range of attributes. These must all be considered.

NOW WE CAN START

Once the initial groundwork has been laid, the first step is usually to identify the universe of systems that will be studied. This includes legacy systems that are currently widely used, newer systems that are becoming increasingly popular, and the newest entrants in the field whose capabilities are still unknown. The final group presents a challenge to evaluate because it may be

difficult to actually see how these systems are currently used. In addition, oftentimes the systems are not fully developed, which requires potential licensees to take a leap of faith.

The number of systems that actually make it into the process is normally in the range of three to five. A larger group than this could bog down the process. Once these contenders are selected, the company is ready to start gathering information to educate the selection team on the pros and cons of each system and how it would meet its needs.

Very often the selection process results in the development of a scorecard that is used to compare systems. Although these scorecards have value, companies need to be cautious about using the scoring to directly develop a software recommendation. The scorecard is an excellent tool to identify the strengths and weaknesses of each system. They usually cover a number of attributes, including functionality in modeling liabilities and assets, controls built around the system, the underlying technology strengths of the system such as cloud-computing abilities, quality of vendor support, documentation, ease of customization and implementation, and licensing cost. Other attributes can be assessed, but this list covers the most common ones.

Actuaries love to calculate numbers and rely on them for decisions. However, the use of the scorecard should be limited to information gathering. Ultimately, the choice between one tool and another will be determined by its ability to meet a company's "must-haves." These are part of a short list of items that are mandatory for the system. Often seen in this list are items such as ability to fit into the IT operating model, ability to drill into calculations (no black boxes), transparency and auditability, and the ability to model specific products. Speed is generally not on this list; although computing time is important, ways can be found to reduce run time, including adding hardware. Of course, in some situations run time may be a must-have, such as situations in which hedge calculations are performed. However, for regular valuation and projection needs, speed may not be a crucial consideration.

Much of the information used to fill out the scorecards will come from two sources: a request for proposal (RFP) sent to each vendor and vendor demonstrations. The RFP gives the vendor an opportunity to describe its tool's abilities. With either approach, companies need to be cautious because vendors tend to be show their product's best side, as is to be expected. It takes good detective work to uncover the areas that may be problematic in specific situations.

OPEN OR CLOSED?

One of the key differences among the systems is how much access the user has to the code and what level of customization is allowed. The "closed" systems generally limit how much can

be done with respect to system changes, while the "open" systems usually give the user free reign. A full discussion of this is beyond the scope of this article, but a key aspect is that closed systems generally do not require as high a level of programming skills by the staff. This is an important consideration when a company is thinking about the staffing implications of bringing on a new system. Another relates to a company's need to implement new product functionality or other coding changes, such as in pricing, on an as-needed basis. Closed systems create more challenges in this area because some changes require vendor involvement. Some companies find it advantageous to leave all programming up to the vendor. Others cannot work this way. Finally, installing upgrades with closed systems are generally easier since the vendor controls the code at all times.

PROOF OF CONCEPT

Following the vendor sessions and a full reading of the RFPs, some teams are comfortable making a recommendation to management. However, in most situations companies will ask the vendor(s) for a trial license so they can dig deeper into the system. Sometimes this may be limited to a small group of actuaries and IT people who spend two or three weeks drilling through the system to get a feel for it. In a growing number of situations, companies are performing intensive proofs of concepts where they use the system for a few months and execute real model building. Bringing in new software is a significant commitment. Only hands-on experience can identify potential issues or confirm that the choice is correct.

IMPLEMENTATION, CONVERSION AND TRAINING

No level of due diligence can replace actually using software in a real-time setting to meet valuation and analytical needs. Although an extensive selection process, including a proof of concept, will expose potential issues or areas that will stress the implementation team, only during the conversion does a company really get to know how the tool will work for it.

Several considerations need to be contemplated after all the information gathering has been completed but before signing on the dotted line and starting the implementation.

Set a Realistic Timeline and Budget

Conversions will never go as smoothly as planned, so a realistic timeline should include sufficient time for adding and testing new functionality, tracking down issues and dealing with unexpected discoveries. It is important to try to anticipate as many obstacles as possible, but be ready to adapt for the unknown. It is unrealistic to expect the same people doing the conversion to also perform their current jobs; therefore, the budget and timeline needs to contemplate the use of consultants as well as a company's subject-matter experts and dedicated project staff. The timeline should also account for things such as new

products or rate updates that now need to be incorporated into both the current and future-state models.

Timing and Approach

It is important to consider the company's future state of modeling and its approach to implementation. Conversions can take at least one to two years, so plans will need to ensure continued support of the current environment while building toward the future. Consider how frequently the project team will want to rebase to the current quarter. Cutting over to a new system is never going to be perfect, so timing a conversion to coincide with year-end or an assumption unlock quarter is probably less than ideal. Depending on the complexity of the conversion and whether this will impact results, it is recommended to plan for at least one to two quarters of parallel testing and several rebases.

Vendor Dependency

The sales pitch will always make it sound like buying a new system will solve all modeling problems, but no system is perfect. The evaluation team needs to distinguish between what exists today versus promised future enhancements. If the vendor promises a future enhancement, the conversion is dependent on their timeline and is subject to potential resource contention with other clients. Every step should be taken to keep the vendor work off the critical path. Realizing this up front will help set realistic expectations regarding the state of the software at the conversion date—a company may actually be giving up some current functionality for a period of time by moving to the new software. Doing a thorough review on the front end can minimize surprises on the back end.

Opportunity for Thorough Review and Documentation

The greatest value in a software conversion is the resulting reconciliation, review, documentation and model cleansing. It is important not just to replicate the old system, but also to use independent tools to verify that the new setup is correct instead of rolling forward existing issues. This is also the chance to thoroughly document customizations and inputs. This will add time and expense, but it will provide confidence in the new results and set a company up for success to maintain the system in the future.

Examine End-to-End Process

Actuarial modeling is no longer just about the inputs, outputs and code, but now needs to consider automation and controls. A system conversion should also examine any manual processes used to create inputs or aggregate outputs to see if system capabilities exist that could do the same thing faster to free up actuaries to do more analysis.

Cross-functional Project Resources

Most system conversions will not just involve the actuaries. Typically, interactions will take place with IT, finance,

internal and external audit, and investments. Within the actuarial department, each area using the model will need to provide subject-matter experts who can help create requirements, evaluate issues and perform user acceptance testing. Support from senior management and a good project management team will be critical to ensure all departments are working toward this common vision and can prioritize actuarial requests appropriately.

Organization Structure and Future Governance

Evaluate the modeling roles and responsibilities: An organization wants to ensure that once the conversion is complete, proper governance is in place for future changes. Many companies are moving to a centralized modeling team to maintain and enhance the models consistently in the future. It is important to discuss this before the project ends so roles and responsibilities are well defined before the first change occurs.

Audit Requirements

Assuming that the conversion work changes results, auditors will need to get comfortable with the new model. By engaging

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with them early, any required documentation can be developed along the way instead of trying to go back in time. It is helpful to build spreadsheets that replicate calculations and pull a representative sample of single cells to demonstrate the review. In addition, use this as an opportunity to show evidence of the correct implementation of assumptions by not only running the baseline model, but also running sensitivities. Also, agree on how many quarters need to be tested.

Agreement on Error/Methodology Quantification

No system is coded perfectly, so a conversion will uncover errors or difference in approaches in the existing model. It is good to agree ahead of time whether such an error will be corrected in the existing system or if it will be first addressed in the new model. If the error is material, the project team will need to determine the feasibility of making model changes to quantify the historical impact or if estimates can be used for that purpose.

Scope

Models implemented now must deal with future challenges, not just today's requirements. A multiyear project may first handle the conversion, but then focus on the new and improved future state. Clearly spell out what must be completed for the conversion to go live and what improvements can happen once the system is in use. The scope should also allow for anything new that comes along during the conversion so the system is not out of date as soon as it is implemented.

Technology/Infrastructure

It is important to blend actuarial and technical solutions to modeling problems. Solid IT infrastructure and grid support must be considered. Everything looks good on a small demo scale, but the evaluation team needs to assess what things will look like with more users and an increase in the number and types of projections.

CHANGE IS GOOD

Using a new software system can be an exciting time for a company. In most, if not all, instances it provides an opportunity to

do things better and faster and provide management with much needed information that may not have been accessible in the past. Most current valuation and projection installations have evolved to their current state based on emerging needs over a number of years. Converting to a new system provides companies with a chance to actively design their computing environment. A well-designed and -executed selection process provides the best chance of finding the platform that will both meet current needs and be able to grow with the organization. ■



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