SOCIETY OF ACTUARIES

# The Actuary

FEBRUARY/MARCH 2013 VOLUME 10 ISSUE 1

## ACTUARIES WITHOUT BORDERS

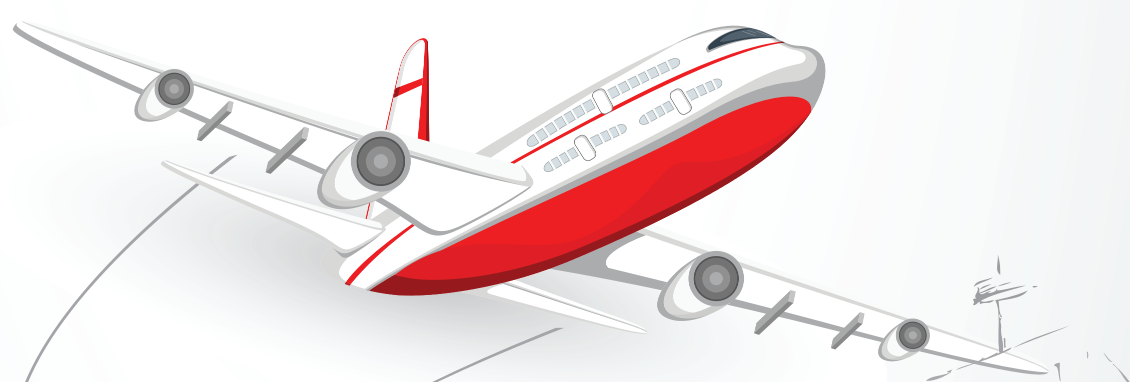
Helping mankind, promoting the actuarial profession

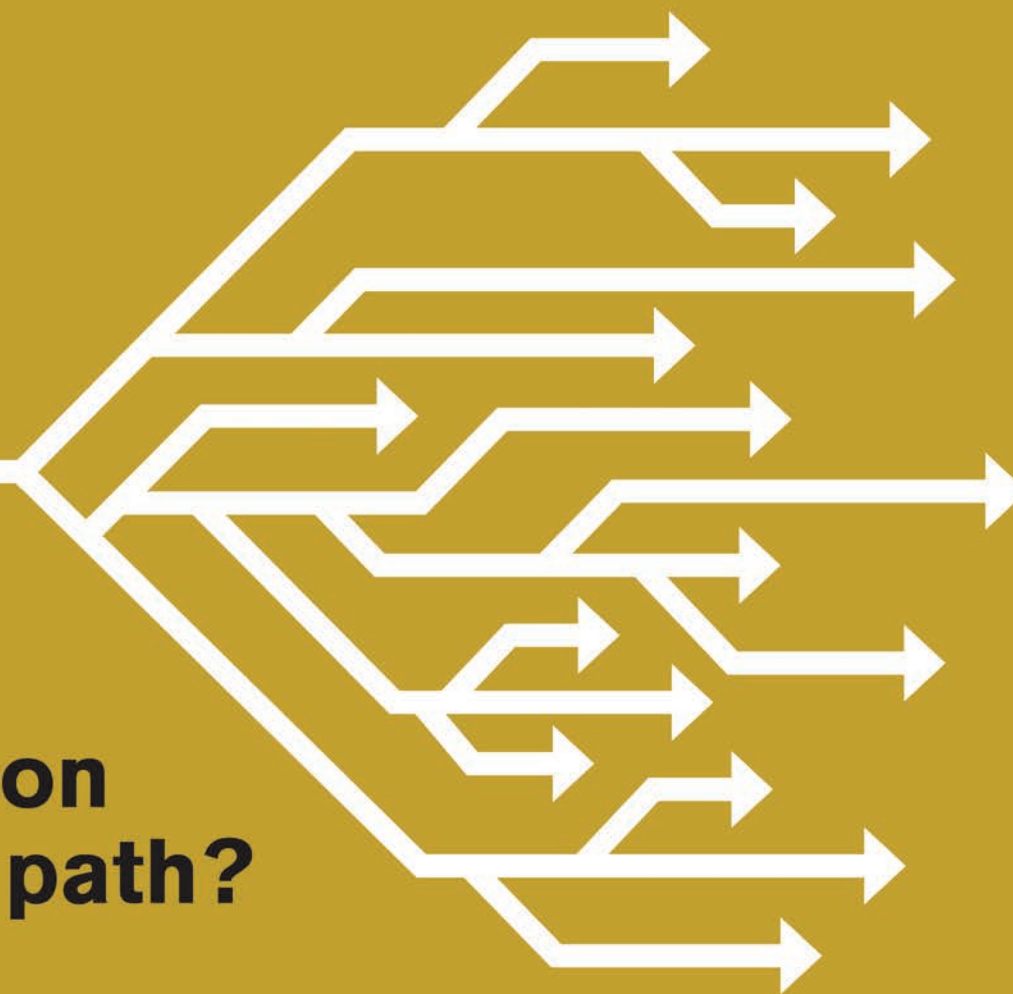
### THE SOA EDUCATION DEPARTMENT

Structuring the general insurance fellowship track

### STRATEGIC RISK MANAGEMENT

A robust yet practical approach





# Feb/March'13

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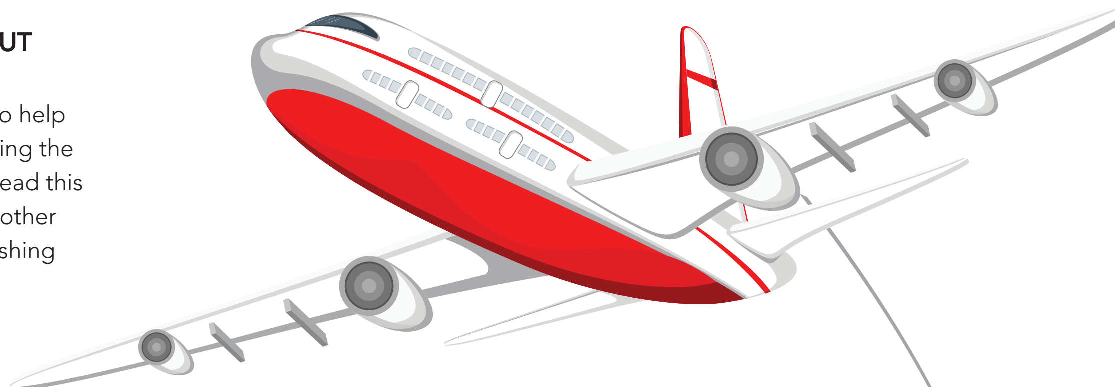
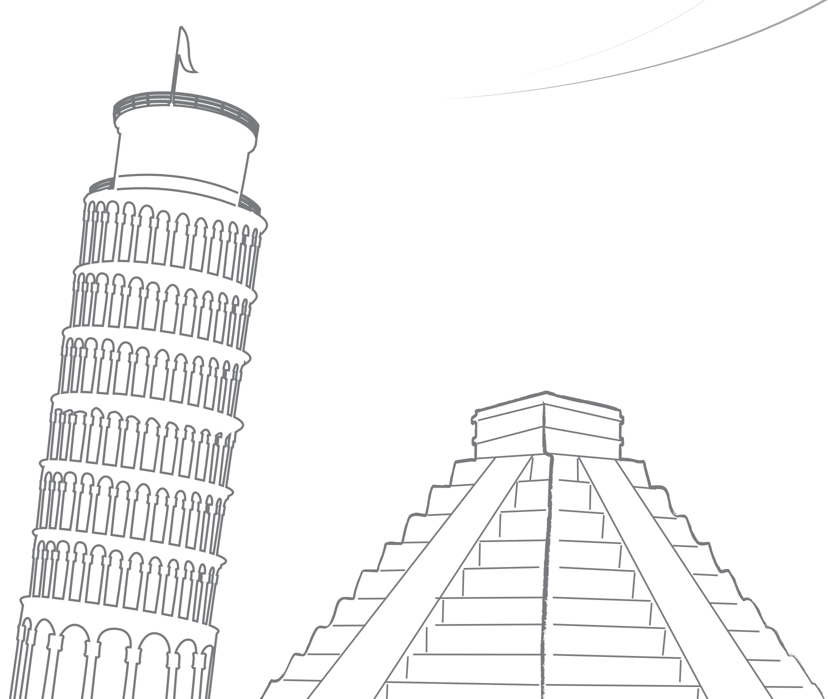
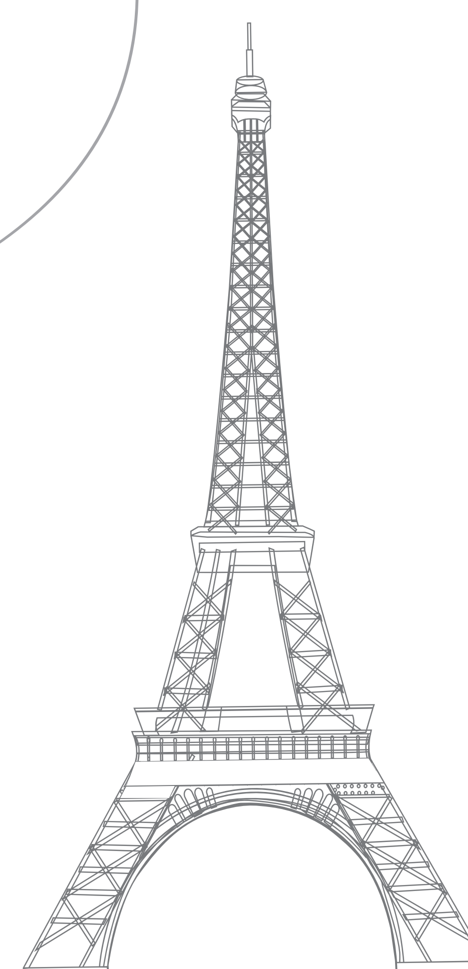


## FEATURE







The Actuary

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# DEPARTMENTS





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February/March 2013 issue of *The Actuary*


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Editorial

# THE NEW NORMAL AND THE ACTUARIAL BUBBLE

BY JAMES RAMENDA

**THE NEW NORMAL ONLY FEELS NEW** if you don't remember the "old normal." For example, it's not really a new concept among banks that "you need good credit to get a loan." It's not new for consumers to spend less than 100 percent of their income. In fact, there was even a time when "consumers" was not our collective name; we were called, well, just people.

For sure, most of the new normal doesn't seem nearly as fun as the bubble that preceded it. Yet there is some satisfaction that comes to an actuary in recognizing how much of the economic bubble was really an actuarial bubble—not that actuaries were responsible for the bubble, but that the underlying causes were actuarial in nature.

Conventional wisdom regarding the bubble says that 30 years of declining interest rates and easing credit led to highly leveraged consumption and highly leveraged economic growth. All of which, in turn, led to the realization of bad credit, reduced spending, deleveraging and low growth. Throw in a little fraud, a good measure of self-delusion, and a lot of bad risk management, and a credit cycle turned into a systemic crisis.

But how much of the bubble was really actuarial in nature? For starters, there are the demographics. There is no better read on demographic changes affecting growth cycles than Nino Boezio's February 2011 article in *Risks & Rewards*, "Taking Stock: What is the Real Problem with Economic Growth." To grossly oversummarize one of the article's key points, when a population bulge hits its high earnings and high consuming years, growth will be good, but as the bulge moves into retirement, growth will suffer. The 20 to 30 years prior to the crisis were the baby boomers' high earning and high consuming years. It was a long stretch of generally increasing corporate earnings, increasing leverage, higher returns on equity, and generally inflating asset values. During that time, much of the economy's success was attributed to technology, financial innovation, and assorted business superstars—but how much of the boom years' apparent success was simply being on the right side of demographics?

More pointedly for the U.S. corporate segment, how much of the earnings growth was due to shedding defined benefit pension plans and other post-retirement benefits (remember those?) in favor of 401(k) plans? It has been estimated that the once-traditional package of post-retirement benefits for average workers could account for up to 30 percent of total compensation costs. It's a big drop from there to today's 401(k) plans. The difference—a pay cut really, and largely uncontested at that—fell directly to the corporate bottom line over the past three decades. There was no great product innovation associated with this earnings boost, no technological breakthrough, just a big transfer of expense and investment risk from the corporate sector to individuals.

Of course, some of the gains that corporations realized through pension savings were offset by rapidly rising health care costs. This increasing expense was itself partly offset by employers shifting costs to employees in the form of increased contributions. How were employers able to shift costs back on to employees? This goes right back to demographics. The opening up of global labor markets, including developing countries with relatively younger populations, helped shift the bargaining power to the employers' favor. Who knew the math of non-stationary populations would be so relevant to global economics back when we were studying it?

Actuarial realities unfold very gradually over many years and decades, a much longer time frame than the typical company or employee considers in their planning. Investment returns earned during years of

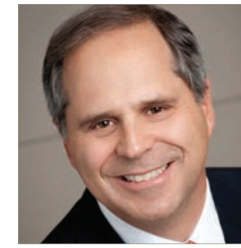
CONTINUED ON PAGE 10

rapid population growth, with leveraged balance sheets and inflating asset values may seem normal at the time. So it's understandable that behavioral adjustment can lag ongoing long-term shifts.

For example, even with the pressure on real wages, the evaporation of pension plans, and the widespread awareness of increasing longevity, individuals kept increasing their borrowing and their consumption (actually bringing the overall savings rate below zero), fueling the bubble. This spending boosted corporate earnings and overall economic growth statistics, but from an actuarial perspective what was happening was that individuals were de-funding the third leg of their retirement—private savings. Many remaining pension plans, both private and public, have since had to question whether their assumptions reflect the future, or a historical averages that may not be relevant.

Private savings rates are now trending solidly positive, but the generally inadequate funds committed to this third leg of retirement, together with the weakening of employee retirement plans and ever-increasing longevity, seem to make it likely that the "new normal" of constrained consumer spending will be a long-term reality. How different might the economic contours of the past 30 years look if individuals had saved something on the order of their "normal cost" of retirement annually, rather than take savings rates down to zero?

It is hard to measure the shortfall in private retirement savings because there are no unfunded liabilities to amortize, no trust funds to run down. The impact will be gradual—an increasing number of older people without enough money to sustain the spending that our economy has been built upon. But they will not be completely out of luck. What they lack in economic power they will make up for in political power. If you think that Social Security and Medicare, so central to the spending side of the fiscal cliff, are tough political issues to touch now, remember that the baby boomers are just getting into their retirement years. It is a discomforting fact that the financial crisis began to break not long after the first baby boomers went on Social Security.



James Ramenda

It's probably human nature to see the issues of the day through the lens of one's own profession. Still, it's hard to avoid the conclusion that many of our economic challenges have at their roots—a lack of policymakers' understanding (or perhaps willful ignoring) of intergenerational transfers, and long-term demographic shifts. While many of the aftereffects of the bubble are unpleasant, actuaries can take pride that our training is so relevant to the current economic situation and perhaps afford ourselves some optimism that we will be critical to developing future solutions. A

**James Ramenda, FSA, CERA,** is senior vice president, Enterprise Risk, with SS&C Technologies, Inc. He can be contacted at *JRamenda@sscinc.com.*



Letter From The President

# COLLABORATION, COMMUNITY AND THE COMMON GOOD

**BY TONYA B. MANNING**

**WELCOME TO THE FEBRUARY/ MARCH ISSUE** of *The Actuary* magazine and happy 2013. It has been an incredibly busy few months since I took office in October. We have turned the page on the calendar, made (and possibly broken) New Year's resolutions and if we took time off for the December holidays, we've launched back into work, hopefully rested and refreshed, after spending time with family and friends.

Reflecting on my first few months as the president of the SOA, it has been a whirlwind of activity. In addition to holding down a challenging and interesting day job, I have been honored to represent the SOA and the actuarial profession at numerous meetings and events. For instance, I attended an International Actuarial Association (IAA) meeting, where the first International Standard of Practice (ISAP-1, General Actuarial Practice) was approved. In October, I met with the Cincinnati Actuarial Club, where we had great dialogue around the SOA's strategic initiatives, including expanding support for candidates taking our exams, and the recent addition of the General Insurance track. In December, I participated in our semiannual Employers Council, where we received important input on how the SOA is supporting and serving its members and their employers. Immediately after that, I attended my first Fellowship Admissions Course as president. It was a great honor to participate in such an important day for the new fellows and I am certain this will be one of my favorite events as president. In January, I attended a meeting of the Council of U.S. Presidents (CUSP), where we discussed how that group might respond to the United States Actuarial Profession-Wide Task Force's recommendation to develop a strategy for the profession. I then visited my alma mater, the University of North Carolina at Chapel Hill, to meet with actuarial students from both UNC and Duke University. Not much has changed since I was a student—the SOA exams are still viewed as tough and free pizza is highly valued. Finally, I attended a dinner with members of the committee on Post Retirement Needs and Risks, led by Anna Rappaport, committee chairperson and past SOA president. All of this in just four months!

**The SOA board remains fully committed to promoting the profession and being a good partner to the global profession.**

My travels and many conversations these past months have strengthened my conviction that the actuarial community is passionate about its profession, and is genuinely engaged in an enthusiastic dialogue about the external and internal issues and opportunities we are addressing now and in the years to come. I am so proud to be a representative for our profession. Thank you to everyone who has offered insights, concerns and compliments. I've been pleased to share your candid and thoughtful feedback with my fellow board members and the SOA staff.

As I cannot converse directly with each of you, I'd like to take this opportunity to address a recent viewpoint that has come to light. Some feel that the SOA's recent launch of our new mission and strategic plan, and our direction over this past year, has diminished our focus on the advancement of the profession. While most reaction from our members and candidates has been positive, the concerns I've heard are understandable.

I'd like to focus on the SOA's recently updated mission: "The SOA, through research and education, advances actuarial knowledge and improves decision making to benefit society. We enhance the ability of actuaries to be trusted financial and business advisors on problems involving uncertain future events. We provide and ensure the integrity and relevance of our credentials." This mission, in my view, includes a strong focus on promoting the profession. Our profession cannot be sustained without growing and adapting as businesses and the financial sector change around us. And, this cannot be done without forward-looking research and the advancement of actuarial knowledge, both key elements of our mission. Such work will enable us to find new ways to apply actuarial principles. Through adaption and expansion, our profession will remain strong and relevant.

One example is recent research regarding climate change. The report, "Determining the Impact of Climate Change on Insurance Risk and the Global Community," was a collaborative effort by The Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries and the American Academy of Actuaries' Property/Casualty Extreme Events Committee. Climate change is an important, emerging risk, and actuaries can be key in understanding and mitigating it.

Another example is an ongoing joint study conducted by the SOA and LIMRA International of individual life insurance lapse experience in the United States. In this study, whole life, term life, universal life and variable universal life experience are summarized and analyzed along many key policy and product factors. Premium payment mode, underwriting method and risk class are just a few of the factors reviewed in the study. The latest study is based on experience data from 2007 to 2009 from 27 life insurance writers.

The SOA board remains fully committed to promoting the profession and being a good partner to the global profession. The SOA's international membership growth has been steady, with the fastest-growing international constituent group located in mainland China and Hong Kong. We continue to find avenues for relevant knowledge sharing and networking opportunities. For example, in 2012 seven face-to-face events were held in the Asia-Pacific region.

The SOA also continues to support the following organizations and initiatives:

- Actuarial Foundation
- Council of U.S. Presidents
- North American Actuarial Council (including its collaborative research effort)
- International Actuarial Association
- Joint Risk Management Section
- ERM Symposium
- BeAnActuary.org website
- Collaboration with the American Academy of Actuaries and the Canadian Institute of Actuaries on research that informs policy makers
- Partnership with the Canadian Institute of Actuaries to develop and deliver professional development seminars
- Efforts to promote diversity in the actuarial profession
- International Congress of Actuaries (ICA) 2014
- Partnership with the American Council of Life Insurers on ReFocus 2013, an industry conference focusing on insurance issues that impact the life insurance industry
- LOMA and LIMRA (including conferences such as the Life Insurance Conference and the Retirement Conference)


Tonya B. Manning

We are committed to supporting any other areas where our members and candidates can benefit from such work.

Let's keep the conversation going. If you have ideas on how the SOA can continue to advance its mission, please drop me a note at *tmanning@soa.org*.

Thanks for your time and consideration. And, in honor of Spring Festival, better known as Chinese New Year—I wish you good fortune, health and longevity.

Warm regards!

**Tonya B. Manning, FSA, MAAA, EA, FCA,** is president of the Society of Actuaries. She can be contacted at *tmanning@soa.org*.

Inside Scoop

# SOCIAL LEARNING WITH THE SOA

BY LESLIE FAUSHER

**TO DATE,** nearly 20,000 candidates and members have traveled through thousands of pages of e-Learning content in the Society of Actuaries' (SOA) e-Learning system. Fundamentals of Actuarial Practice (FAP) and fellowship modules, end-of-module exercises and assessments have been read, absorbed, downloaded, uploaded, passed and failed.

Each candidate began the journey alone at a desk, logging into the unknown and only aware that the time remaining to complete his course or module had already begun its descent. As the pages slid by, he may have begun to wonder: "What resources are available to help me? I've read the online links. I've thought about the Thought Questions. I've 'Asked An Actuary.' But is there anyone around me also enrolled in the FAP course? Can anyone help me understand the Control Cycle? Are there any actuaries nearby I can consult?"

Until now, the answers to these questions have been: No.

It became clear in the recent SOA Candidate Focus Group discussions that e-Learning candidates lacked the opportunity to connect with other candidates and members while engaged in the e-Learning system. In the focus group, candidates identified key areas where the SOA could better serve and engage the candidate community. In response to the survey and with input from key volunteers, the SOA developed a social learning strategy to address the feelings of "candidate isolation." In addition, the SOA created a Candidate Engagement initiative to more effectively support candidates as they journey toward associateship and fellowship.

The importance of social learning is supported in the following excerpt from the recently released 2012 Social Learning Research report from the e-Learning Guild:

"The top three benefits of leveraging a more social approach to learning are:

1. **Learning from others**—students do better in one-to-one and collaborative environments than they do alone.
2. **Learning in the presence of others**—social comparison is a powerful motivator; without it, it's hard to know how good (or bad) we are doing.
3. **Learning in groups**—Enabling people to learn from each other's experiences, share best practices, connect with experts, and generally make it easier to work are all a part of the social learning landscape. The bottom line is this: leveraging social learning benefits both individuals and organizations."

To better support these needs and interests, the SOA is extending its e-Learning system with a set of new social learning tools. The main purpose of these tools is to establish an environment for e-Learning candidates to connect with other candidates, reach out to working actuaries, facilitate the creation of local study groups, and establish learning communities which will enrich their learning and understanding of e-Learning content. To accomplish this, the use of location-based mapping functions and other social media tools will be leveraged.

The mapping functionality will provide the ability for e-Learning candidates to connect with other candidates and members based upon their location and proximity. For example, a candidate will be able to easily identify nearby candidates who are enrolled in the same e-Learning course or module. From there, connections based upon e-Learning courses in common can be made which will facilitate the formation of local study groups. The social learning enhancement will also provide an opportunity for e-Learning candidates to discover and connect with local working actuaries.

By being part of the SOA's social learning environment, members will have the opportunity to give back to the candidate community by offering guidance and support which will in turn increase their own visibility. Additionally, members may benefit by singling out up-and-coming actuaries in an effort to promote themselves or their employer in the future.

The social learning enhancement will be available to all e-Learning candidates in February 2013. More information and specific instructions will be distributed to all candidates and members prior to its release. A

**Leslie Fausher,** SOA e-Learning manager, can be contacted with questions about the program at *lfausher@soa.org*.

## A NEW PARADIGM FOR

# STRATEGIC RISK MANAGEMENT

**IF YOU ARE LOOKING FOR A ROBUST YET PRACTICAL APPROACH TO THE RISK MANAGEMENT OF STRATEGIC OBJECTIVES, YOU'LL WANT TO CONSIDER THE FRAMEWORK PRESENTED IN THIS ARTICLE.** BY DAMON LEVINE

If enterprise risk management (ERM) was truly ever a hot topic, it seems there is an emerging focus on one of its potential applications or subtopics, namely strategic risk management (SRM). It is perhaps reasonable to conclude that risk management of strategic objectives should be susceptible to the current tools, techniques, and risk knowledge embedded in an existing, strong ERM framework. One might assume the risks that affect a company's pursuit of its business goals are merely a subset of the universe of risks that are identified and managed in a well-functioning ERM framework. This assumption is almost universally false.

This article will 1) discuss the above assumption and reality, 2) demonstrate the design of a customized SRM program, and 3) illustrate how concepts from the *Logical Framework*[1] can greatly improve the execution of SRM around any strategic objective.

### ERM AND SRM

ERM takes a high-level view which seeks to avoid downside scenarios while exploiting potentially profitable risks. Metaphorically, ERM is running a military campaign to protect against and benefit from risk and focuses on large scale considerations. By design, ERM is not always "aware" of the finer details of particular battles as they unfold. This is not an oversight, but an intentional line in the sand. The granular risk considerations that a particular line of business faces are often regarded as the domain of the frontline product experts, risk managers, and decision makers at the business segments.

Clearly, effective risk management of the portfolio of a company's strategic goals is crucial to preserve and increase company value. However, this class of key risks goes largely under the radar of the seemingly thorough risk identification function of a strong ERM program. Even if these risks are identified as part of existing ERM processes, there are several specialized and necessary tools that may be absent.

Nevertheless, ERM is the right foundation for SRM and gets you "most of the way there" provided that some specific methods and metrics are overlaid on its traditional components. In order to focus on SRM, a limited amount of time will be devoted to ERM. However, thoughts on key ERM attributes and a proven, powerful approach will be mentioned.

The design of our SRM program begins with a vision of an ideal future state. We will successively move "back in time" toward the present as we formulate pre-requisite, actionable steps to reach our goals. We repeat that back-step in the "causality chain" to conceive and define other necessary subgoals.

## SRM PROGRAM DESIGN

### What Do We Want to Accomplish and Why?

Framework conception should begin with the above question. It's tempting to give a quick, vague response to this and "get to the real work." This is a mistake.

At the dawn of the 20th century, Henry Ford set out to build the lowest cost car. This led to the development of assembly lines and the Model T. Around the same time, William Durant at General Motors sought to create the most affordable car. As a result, GMAC and the concept of automotive financing were born. These seemingly similar objectives led to very different paths and products, and each changed the world.

**... effective risk management of the portfolio of a company's strategic goals is crucial to preserve and increase company value.**

We must therefore be careful in formulating our objectives. After they are stated, we ask why we seek them. In doing so we may discover if the motivation behind a particular objective is misplaced.

Our example will design an SRM framework for an insurance company. Our objective (to be stated in three digestible pieces) is design of an SRM framework that will:

1. Increase the likelihood of attaining strategic goals.
2. Leverage existing ERM tools and techniques for SRM, while improving and expanding ERM.
3. Improve perception of our ERM program among shareholders, rating agencies, and regulators.

These are our three most important priorities in our eventual SRM framework. Why?

If we attain 1 then we are helping to ensure execution of strategic goals and this will help preserve or increase our company's value.

If improved ERM is not a universal selling point of 2, then at least the promise of minimizing new and additional processes must be.

A benefit of 3 is that it allows us to address the Own Risk and Solvency Assessment (ORSA) expectation of a clear link between strategy and ERM in the manner best suited to our company. The SRM framework will improve rating agency/regulator assessments of our ERM program and increase shareholder confidence that a risk-intelligent view is embedded in the execution of our strategic objectives. For a public company, the optimistic, but possibly reasonable, expectation is an increase in stock price.

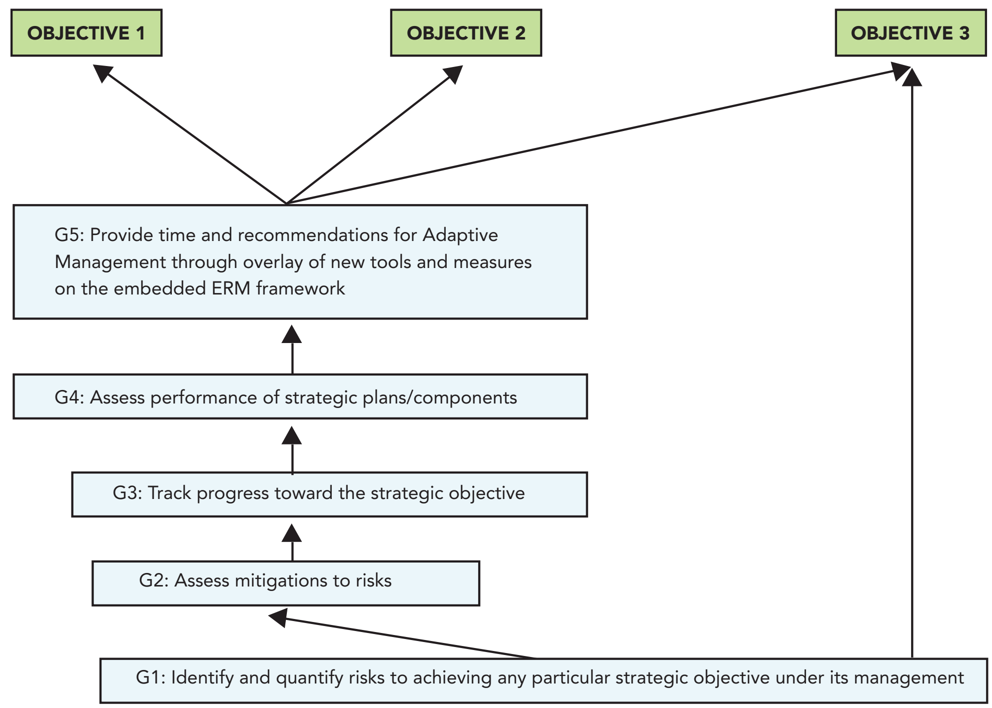
These objectives serve as strong selling points that may create the upfront C-suite endorsement and support that underpins any successful SRM framework.

### What Goals Allow Us to Reach Our Objective?

As mentioned earlier, an important foundation for our SRM implementation is a "strong" ERM framework. For each enterprise risk, the ERM function queries the risk experts to form a consensus on several hypothetical scenarios that capture ways a risk may manifest. These "risk interviews" are the primary vehicle for risk identification and quantification.

Each scenario includes probability estimates and impact approximations for income statement or balance sheet components (e.g., sales, expenses, loss ratio, reserve changes, etc.) leading to quantification in terms of key risk metrics (e.g., effects on earnings, ROE, capital, etc.) The selected metrics are precisely those of interest to internal and external stakeholders. The risk interview concept and the scenario approach represent some of the fundamentals suggested by ERM consultant Sim Segal.[2]

## Exhibit 1: Framework Attributes Leading to Objectives




One path toward *all three objectives* is ensuring an SRM framework that enables *adaptive management* for any strategic objective under its consideration, i.e., timely and informed management action to alter business tactics, risk mitigations, or overall strategic course.

The following framework schematic (exhibit 1) is created by considering its top elements and using several back-steps to fill in successive elements as we move down in the diagram. Foundational tasks and projects are therefore at the bottom. The analysis leads to goals which enable Adaptive Management and allow us to achieve 1–3 (listed on pg. 18). To be precise, each of the below goals (G1–G5) should be preceded by "ensure the framework has the ability to …"

### What Framework Components Enable Goals G1–G5?

We now describe the detailed framework components (primary processes) that will lead to each of the goals. Component 1 addresses goal G1, and similarly for components 2–5.

- **Component 1:** a) Identification and quantification of both the "peripheral" risks as well as the more readily apparent business risks that may hinder success in reaching the objective, b) assignment of a *risk velocity* rating to each risk. Risk velocity[3] is a best guess for the speed of onset (impact to the company) assuming a risk has just begun to manifest. It sheds light on when and to what extent we can adapt to changing risk or business environments.

- **Component 2:** a) Assessment of mitigations to the risks in C1, b) rating of Potential for Action (PFA)[4] for each risk in C1. PFA is a measure of the expected benefit to the company's risk-reward profile from additional focus or effort on risk mitigation (i.e., PFA assesses the anticipated "bang for the buck" of *incremental* mitigation activity).

- **Component 3:** Selection and use of metrics or indicators that track progress toward the strategic objective, perhaps gauging sales levels, training success, or various marketing campaigns.

- **Component 4:** Analysis of the results seen in C3 to determine which aspects of the strategic plan are merely experiencing insignificant variation from the plan versus those truly in need of modification.

- **Component 5:** Implementation of early warning indicators (EWI). EWI can be either a "canary in a coal mine" signaling future risk manifestation or simply a preview of what the current period tracking indicators will soon reveal. EWI provide crucial time for Adaptive Management before the crisis is upon us. EWI, conclusions from C4, and PFA ratings all inform recommendations for altering, expanding or supplementing strategic elements or altering risk mitigation techniques.

## EXAMPLE: LAUNCH OF A RETAIL WARRANTY PRODUCT

We now apply the framework to the launch of a warranty product at an insurance company. The warranties will be sold by the insurer's business partner, a moderately sized retailer in Italy, to local customers. The company has sold a similar product in France for the past five years.

Based on initial research and analysis, the strategic team provides several forecasts, including potential P&L outcomes, and highlights opportunities for future partnerships with top-tier retailers. A scenario approach is employed to express the uncertainty inherent in such projections and helped get the initial "green light" from management.

The strategic objective is: 1) Launch the product by June 1, and 2) produce at least $300M in premium cash flows over the first 36 months and net GAAP earnings exceeding $10M in each of years 2 and 3.

The project plan suggests that three main goals must be achieved in order for the strategic objective to be attained. These *critical to success* goals (CtS) are: G1) train the retail salespeople by March 1, G2) increase year over year sales by at least 15 percent in each of years 2 and 3, and G3) decrease year over year claims administration costs by at least 15 percent in each of years 2 and 3.

Back-steps suggest that:

- To meet G1 we must set up three on-site visits at retail locations where two of our employees each lead a full day session

- To reach G2 our Internet marketing plan must increase the number of hits on the website by 30 percent in the next 12 months, and our retail partners must have a success rate of at least 20 percent when offering the warranty

- To achieve G3, a new protocol for handling claims must be implemented and call center employees must show a performance improvement in each of the next three years.

Relevant *progress metrics* might include total number of staff trained, number of hits on the marketing website, per employee sales, and average time spent and dollar payout per claim for each claims processing employee. Of course, premium revenue, claims, expenses, and profits are carefully tracked.

Risk experts analyze various assumptions regarding claim frequency and severity, marketing effectiveness, training programs, and macro factors, including Italy's disposable income trends and foreign exchange volatility. In addition, where the project plan makes assertions such as "if we complete tasks A and B, *then* we achieve goal X," they identify the necessary conditions for the "then" to be valid in reality. A focus on assumptions underlying if-then thinking is a key component of the Logical Framework[1] (also called the Logical Framework Approach or LFA).

Several critical assumptions are identified including:

1. The forecast profit levels assume claims experience will be within 10 percent of that seen in the experience with the company's similar product in France.

2. Sales levels must quickly ramp up after the low levels projected in year 1.

3. Call center training is assumed to lead to reduced claims payout and improved efficiency.

These suggest risks to achieving the strategic objective include: claims behavior differences across countries, stagnant sales growth, and unsuccessful efforts to improve call center profitability or resource usage.

**EXHIBIT 2**

**SCENARIO SUMMARY FOR FOREIGN EXCHANGE RATE RISK (DOLLAR VS. EURO)**

| Scenario Description | Probability | Impacts to Business Drivers | Year 1 Earnings Impact | Company Value Impact |
|---|---|---|---|---|
| Exchange rate stays within 10% of March 1 levels for next 12 months | 35% | Assume baseline forecast interval estimate applies | Assume baseline forecast interval estimate applies | Assume baseline forecast interval estimate applies |
| Dollar appreciates vs. Euro by 10-20% | 25% | $US Sales Down 20% (vs. baseline, post currency translation) | -$20M | -$54M |
| Dollar appreciates vs. Euro by > 20% | 20% | $US Sales Down 35% | -$35M | -$95M |
| Dollar depreciates vs. Euro by 10-20% | 15% | $US Sales Up 15% | $15M | $41M |
| Dollar depreciates vs. Euro by > 20% | 5% | $US Sales Down 30% | $30M | $81M |
| | | **Statistical Expectation** | -8M | -22M |
| | | **Downside Conditional Expectation** | -27M | -72M |
| **Challenges** | *[List perceived difficulties in risk prevention or impact reduction]* | | | |
| **Mitigations** | *[Identify existing risk controls that reduce likeihood and/or expected business effects]* | | | |
| **Potential for Action** | *[Assess the expected benefit to the company's risk-reward profile from additional focus or effort on risk mitigation]* | | | |

In addition, there are risks that an economic downturn (in Italy or globally) would drive down demand for the product or that currency fluctuations make the warranty's price prohibitive or drive down U.S. dollar profits. Analysis shows that the ISAE consumer confidence index is a leading indicator for demand for the retail warranty product among Italian consumers. A three-month moving average of the ISAE is defined as an EWI.

The above illustrates steps including: stating the objective and CtS goals, selecting progress metrics, EWI, and performing risk identification. Risk quantification employs the risk interview approach and describes hypothetical scenarios that capture a range of outcomes for the key risks. In the case of risks that are strictly of a project planning nature, this scenario approach is not needed. One might simply identify a project challenge and address it by suggesting an additional subgoal, process change or an increase in resources. For each risk source, a risk interview provides scenario-based analysis similar to Exhibit 2.

The example up to this point is a "sketch" of the type of analysis, processes and tools that enable a risk-intelligent pursuit of the strategic objective. Based on this work, we embed the selected EWI, metrics and indicators into a realistic and detailed project plan. The project plan includes reporting deadlines and progress-based decision triggers.

Now we are ready to apply the framework to manage the objective. On a monthly or quarterly basis we:

1. Track metrics/EWI, identify and quantify risk exposures, rate risk velocities, and assess mitigation effectiveness through PFA.

2. Observe and report progress metrics and other indicators from (1) and provide a status update including an estimate of the likelihood of attaining critical subgoals and CtS goals, as well as the strategic objective.

3. Based on (1) and (2), alter or refine strategic elements such as business tactics, risk mitigations, or overall strategic course. Document and retain any lessons learned. If overall strategy is to be altered, then return to the initial setting of the strategic objective; otherwise repeat these three steps.

Illustrative changes in tactics might include increased training at underperforming retail stores, the creation and implementation of a new procedure for small claims administration, a bigger push on a specific marketing campaign, or the purchase of a currency hedge such as futures.

**Design of an SRM system is ideally customized to fit your company.**

### THE LOGICAL FRAMEWORK AND EFFECTIVE SRM EXECUTION

Consider the concept of early warning indicators. The framework planning assumes on some level that if EWIs are created *then* we enable adaptive management. Conditions necessary for this "then" to be legitimate include:

1. The assessment of the EWIs as leading indicators is correct.
2. The EWIs are calculated correctly and promptly so any opportunity or troublesome trend is seen quickly.
3. Management is promptly made aware of EWI trends and is willing to take action based on them.

As mentioned, this drill-down into assumptions underlying occurrences of "then" is a primary tool of LFA. Another key theme of LFA, the Four Critical Strategic Questions,[5] ensures the quality of the SRM *input,* i.e., the strategic objective. A clearly articulated objective with a project plan defining appropriate progress metrics is the ideal input for our SRM framework.

LFA's Four Critical Strategic Questions are:
Question 1: *What are we trying to accomplish and why?*
Question 2: *How will we measure success?*
Question 3: *What other conditions must exist?*
Question 4: *How do we get there?*

Question 1 suggests we need a clearly defined strategic objective, possibly using the SMART criteria, and we must ensure that our objectives are aligned with the company's capabilities, mission statement, culture, or risk appetite.

Question 2 refers to proper choice of the progress metrics for CtS goals, while Question 3 refers to typical business challenges as well as outside factors that might be obstacles to attaining the CtS goals or the overall objective.

Question 4 may be addressed through multiple applications of the "back-step" to define all key project tasks and deliverables, delineate task responsibilities and develop a granular project timeline/workflow. We also must manage typical challenges to timeliness and quality of deliverables. In other words, we must carry out project risk management.

### FINAL THOUGHTS

Design of an SRM system is ideally customized to fit your company. Risk quantification, metric selection and decision analysis can be executed in many possible ways; making everything fit together entails a blend of the quantitative and qualitative. You may be inspired (or worried) by Einstein's quote, "Not everything that can be counted counts, and not everything that counts can be counted."

The manifestation of a "killer risk" (one that precludes our reaching the objective) is not necessarily due to a flaw in SRM approach or execution. It will be apparent to most that the framework is based on a scientific and risk-intelligent approach, and its execution reflects the best risk information available.

Perhaps you will need to try again. This time you'll be armed with the lessons from past attempts, and an improved understanding of effective business tactics, choice of metrics and indicators, risk mitigations and overarching strategy. **A**

**Disclaimer:** *The views expressed in this article are my own and not necessarily those of my employer, Assurant Inc.*

**Damon Levine, CFA,** is vice president, Enterprise Risk Management, with Assurant, Inc. He can be contacted at *damon.levine@assurant.com.*

### ENDNOTES

1. The Logical Framework Approach was developed in 1969 by Leon Rosenberg for the United States Agency for International Development (USAID). It is a management tool often used in the design, monitoring, and evaluation of international development projects. More generally, LFA provides a framework that helps organizations of nearly any type achieve strategic goals. Practical Concepts Incorporated extended the use of LFA to 35 countries. LFA is often used by bilateral and multilateral organizations and was employed by NORAD.
2. For practical and powerful implementation of strong ERM see Sim Segal's book *Corporate Value of Enterprise Risk Management: The Next Step in Business Management.*
3. The Corporate Executive Board provided my first exposure to risk velocity. It is possible that my definition differs from their formulation.
4. My conception of Potential for Action (PFA) was an attempt to align "raw" ERM data with risk expert priorities at the business units. Some potentially very detrimental risks are not, and should not be, top management priorities. My experience is that these risks have low PFA.
5. Terry Schmidt applies LFA to the private sector in *Strategic Project Management Made Simple: Practical Tools for Leaders and Teams.*

# ACTUARIES BORD

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## MAKING A DIFFERENCE

**ACTUARIES JUST LIKE YOU ARE TRAVELING TO DISTANT LANDS TO PROVIDE ACTUARIAL SEMINARS—HELPING MANKIND WHILE PROMOTING THE PROFESSION. READ THIS ARTICLE TO FIND OUT HOW YOU CAN HELP THIS WORTHY CAUSE. BY ALAN COOKE**

On a gray day this past November, two men and a woman silently made their final preparations to leave for several airports in the United States and the United Kingdom en route to a rendezvous in one of the former republics of the Soviet Union. After months of planning and preparation they were ready for their assignment. After a last-minute check of passports and visas, they took a deep breath and then were on their way. Many hours later they were facing Azerbaijani immigration officials who sympathetically listened to them recite the purpose of their visit. After clearing immigration and picking up their baggage they were whisked away by their local contacts to their Baku hotel for a final briefing before they carried out their assignment. After three days of intensive activity they left Azerbaijan for their next assignment.

As you probably have guessed, the three travelers in the preceding story were actuaries on a recent project for Actuaries Without Borders (AWB). Variations of the preceding story have been played out on AWB projects in many different countries in far-flung corners of the world. Unlike Medecins Sans Frontieres/Doctors Without Borders, our own Without Borders organization is not involved in life-and-death situations. However, the projects AWB manages are exciting and challenging and enable actuaries to give back to their profession in those countries with the greatest need of our help.

## WHAT DOES AWB DO?

AWB's mandate is to provide volunteers for projects in countries where the actuarial profession is at an early level of development. The types of projects we get involved in cover all areas of actuarial practice. Thus we are looking for actuaries with experience in life insurance, pensions, property and casualty insurance, risk management, health and so on. Typically, the first actuarial practice to develop in these emerging markets is property and casualty insurance, but very quickly the other practices develop. We are currently focusing our efforts on providing speakers for seminars and courses and mentors for regulators and younger actuaries. We used to be involved with microinsurance and other consulting areas, but we have withdrawn from all consulting activities as we believe the resulting financial and reputational risks in providing actuarial advice are too great for us. In addition, AWB providing advice for free unfairly competes with consulting actuaries who depend on their livelihood for such consulting activities. The typical process for an AWB project is that a third party such as the local actuarial association, the local regulator or a non-governmental agency such as USAID will approach us with a potential project and then we will work with them to develop the project details and to find funding for the project from other sources. We then solicit our membership for volunteers and manage the project jointly with the local sponsor who looks after all local arrangements.

## HOW IS AWB STRUCTURED?

AWB is a section of the International Actuarial Association (IAA), which is the worldwide association of actuarial associations. Currently the IAA has 64 full members (including the SOA, CAS, CIA and AAA) and 26 associate members. The AWB section was established in 2003 and, identical to an SOA section, relies on section membership fees rather than parent funding to run its operations. Similar to an SOA section council, AWB is governed by a committee which is elected by its membership and whose officers in turn are elected by the committee members. The current AWB Committee consists of 14 members from nine different countries.

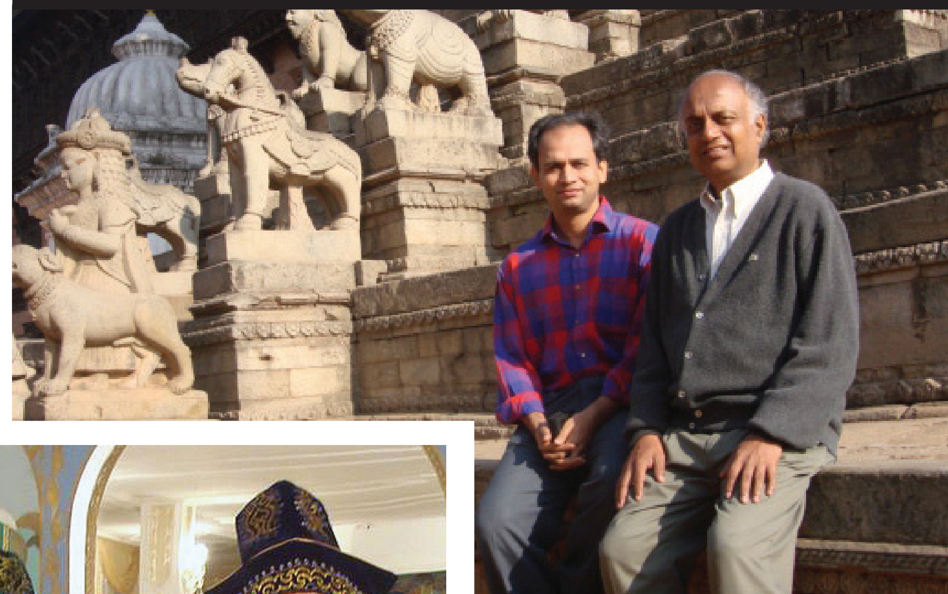
## CURRENT SOA INVOLVEMENT WITH AWB

The SOA has been involved with AWB in a number of ways. Several of the current members of AWB's governing committee are SOA members, including the current chair and vice-chair. In addition, many of our volunteers are SOA members, and the SOA, as well as the International Section of the SOA, has assisted recently in the funding and communication of some of our projects, including the Azerbaijan project mentioned in the introduction to this article. Going forward we hope to work with other SOA sections as projects arise in their respective areas of interest.

## VOLUNTEERING FOR AWB PROJECTS

Mongolia, Kazakhstan, Togo, Ukraine, Azerbaijan, Albania, Vietnam, Romania, Macedonia, Ghana, Nepal, Sri Lanka, Bangladesh, Tanzania, Kenya: these are just some of the countries where AWB has been approached recently to provide volunteers for actuarial projects. What does it take to be an AWB volunteer? In addition to having the relevant actuarial expertise, AWB volunteers should be open-minded, flexible, practical, good communicators, creative and possess a good sense of humor and a spirit of adventure. The rewards of volunteering include the satisfaction of benefiting others, the intellectual stimulation from working in a different environment, the expansion of personal networks and increased knowledge of a developing marketplace. In addition, many of our volunteers set aside time for sightseeing in the country they are visiting. AWB volunteers are reimbursed for their travel, food and lodging costs for a project. You must be an AWB Section member to be eligible to volunteer for an AWB project.

AWB volunteers Mayur Ankolekar and Manalur Sandilya in Kathmandhu, Nepal



Kazakhstan instructors don traditional garb for their presentations

## ADVANTAGES OF JOINING AWB

For most actuaries, the main advantage of joining AWB may be the opportunity to be a volunteer for an assignment in an interesting country. (The next section of this article provides actual examples of some of the projects we have been involved with in various countries.) Through these assignments, AWB volunteers have the satisfaction of advancing the actuarial profession in countries which otherwise would not be able to afford such expertise. This was my personal reason for joining AWB when it was initially created. I had spent much time in developing countries on business in the 1980s, and I wanted to return to them to do volunteer projects.

AWB Section members also automatically receive the IAA newsletter, which keeps them apprised of actuarial meetings and developments around the world. The AWB website provides news of particular interest on actuarial issues in developing countries.

There is also the rewarding experience of being part of a global fraternity of actuaries who care about developing country issues. Joining AWB provides opportunities to network with this enlightened group of actuaries. AWB members are eligible to attend the annual business meetings of AWB and meet their cohorts from other countries. These meetings are held in conjunction with the IAA committee and council meetings and are typically held each year in different parts of the world. Instead of volunteering, an AWB Section member can enhance his or her organizational skills by managing unique actuarial projects from the time a need is brought to the attention of the AWB Committee through to its completion.

This project management role may include:

- Defining the project.

- Recruiting the volunteers.
- Securing funding for the project.
- Monitoring the project to its conclusion.
- Conducting post-project evaluations.

I have personally had the opportunity to manage several AWB projects and the satisfaction from running a project from start to finish can be as rewarding as being the volunteer on the project.

AWB Section members also have the opportunity to nominate themselves as candidates for election to the AWB Committee that runs AWB. Elected members of the AWB Committee serve a three-year term and may run for election to a second term. The AWB Committee is quite open to input from all AWB members so you can have thoughtful input to our decisions.

The annual AWB membership fee of $50 may be remitted along with the rest of your SOA dues payment or paid directly to AWB.

## EXAMPLES OF RECENT AND UPCOMING AWB PROJECTS

To give a better flavor for our activities, I will describe in more detail our recent Azerbaijan project and then briefly describe a few of our other recent projects.

### AZERBAIJAN

AWB had conducted a previous course on property-casualty ratemaking and loss reserving in Baku, Azerbaijan in 2009 along with two Kazakh actuaries. In April 2012, Doug Carey of the SOA's International Section Council advised us that the government of Azerbaijan was beginning a process to consider reforms to its pay-as-you-go social security system and, at the same time, introduce legislation to enable a private pensions market. He also indicated that the Ministry of Finance of Azerbaijan recognized that actuaries in that country did not have the necessary training to support a private pension system and were looking for help to provide an introductory pensions course.

**… the Ministry of Finance of Azerbaijan recognized that actuaries in that country did not have the necessary training to support a private pension system. …**

I was assigned the job of AWB project manager for this potential project. Over the next several months AWB worked with the Actuarial Association of Azerbaijan to set up a three-day pensions course in Baku and we explored possible sources of funding. The Actuarial Association of Azerbaijan was able to secure funding from the Ministry of Finance of Azerbaijan for all the local costs of the seminar, and AWB split the international travel costs of the three volunteers with the SOA and the SOA International Section.

The pension seminar was held on Nov. 13–15, 2012, and was attended by about 40 actuaries currently employed by life insurance companies and Azeri government agencies of finance and labor protection. The seminar was organized into three days, each consisting of four- to 90-minute modules. Most modules comprised half lecture and half working group exercise. Each working group exercise dealt with a practical issue or problem and gave the attendees opportunities to discuss amongst themselves and practice what they learned before reporting out to the entire group. With introductions, summaries, breaks and lunch, each day was eight hours long.

The days were organized as follows:

**Day 1:** Professionalism in the Actuarial Profession

**Day 2:** Design and Financing of Social Security Systems and Private Retirement Plans

**Day 3:** Actuarial Assumptions, Cost Methods and Projections

The course was conducted in English, but there was a team of translators available who translated into Azeri or Russian as needed. We received very positive reports on the course from both our volunteers (two of whom were SOA members) and from our Azeri hosts.

### NEPAL

In April of this year, AWB provided one of three lecturers for a two-day actuarial seminar on non-life topics organized by the Nepalese regulatory authority. A second AWB member also presented at the seminar. In addition to lecturing on pricing issues, our volunteer met with the local regulators to discuss insurance regulation in other countries.

### ROMANIA

In September of this year, two AWB

volunteers, who were also SOA members, presented a seminar on enterprise risk management and Solvency II for the Romanian Actuarial Association.

### ALBANIA

In March 2012, USAID funded a program in Albania to strengthen and enlarge Albania's financial sector. As part of that program, an AWB volunteer mentored two actuaries working for the Financial Supervisory Authority of Albania. The focus of the visit was on helping the regulatory actuaries with problems arising from their current responsibilities and identifying important property and casualty topics not covered in their previous training.

### KENYA

In Kenya, in 2009, AWB provided two lecturers for an education initiative requested by the Kenyan actuarial association. The volunteers conducted a two-week course on enterprise risk management and economic capital concepts at the University of Nairobi. This was followed by a seminar for executives in the financial services industry and meetings with Kenyan regulators. In 2012 we discussed a second Kenyan initiative with the local actuarial association that would have placed senior actuaries inside a number of Kenyan insurance companies in an effort to heighten management's awareness of what actuaries could contribute to the running of the organization and to mentor junior actuarial staff. This project is one we hope to revisit in 2013.

### KAZAKHSTAN

Also in 2009, AWB provided two lecturers for an actuarial school organized by the Kazakhstan actuarial association. The course covered pension fund investment issues and forecasting of payments for defined contribution plans as well as liability adequacy testing for life and non-life insurance. This was a very international event as we had more than 60 attendees from nine countries in the region.

## How To Become More Involved

To learn more about how AWB is organized as well as its activities, visit www.actuaries.org and then click on the AWB tab located on the left side of the Web page. You are also encouraged to contact Alan Cooke or any other AWB Section Committee members if you have questions. Their contact details may be found at the above-mentioned website.

Use this QR code for direct access to the website.

### SRI LANKA, BANGLADESH AND VIETNAM

We are organizing workshops in these countries where AWB volunteers will help local students better prepare themselves for writing actuarial exams.

### TOGO

We are planning a three-day basic social security course in French in Lomé, Togo to be held from April 22 to 25, 2013.

### FUTURE DIRECTIONS FOR AWB

One of the strategic objectives of the IAA is to:

"Support the development, organization and promotion of the actuarial profession in areas of the world in which it is not present or is not fully developed."

During 2012, the IAA set up a task force to define the major activities needed to implement the above strategic objective and to consider the role of the AWB Section and other parts of the IAA to achieve this goal. The task force reaffirmed AWB's important role in providing volunteers for the related activities and proposed a closer working relationship with the IAA's Advice & Assistance (A&A) Committee to achieve this objective. AWB is excited by this new cooperative role with A&A as we believe it will lead to even more interesting projects for our members in future years.

### FINAL WORDS

It is an exciting time to be involved in the actuarial profession in the countries that AWB serves so we hope you will become actively involved with us. A

**Alan Cooke, FSA, FCIA,** is retired. He can be contacted at *vancooke@telus.net.*

# STRUCTURING THE GENERAL INSURANCE FELLOWSHIP TRACK

BY ANTHONY E. CAPPELLETTI AND W. SCOTT LENNOX

**THE DECISION TO CREATE** the General Insurance fellowship track puts the Society of Actuaries (SOA) in the position of offering actuarial education in the full range of actuarial practice areas. Prior to this decision, the SOA was the only broad-based actuarial organization that did not offer a general insurance option. Candidates will now be exposed to all areas of actuarial practice before selecting among the various practice-specific fellowship tracks. This allows candidates maximum flexibility in working toward their professional designation.

The SOA is committed to developing a world-class General Insurance fellowship track. This track will present actuarial methodologies on a broad international basis that will be attractive to candidates regardless of location. Like other SOA fellowship tracks, it will also be designed so that FSAs who pass the General Insurance exams and modules will be recognized as fully qualified to practice in the United States and Canada, including the signing of statutory reports. Nation-specific material will be included for financial and regulatory topics. The SOA is currently working with the appropriate national organizations to ensure that their expectations are met by the SOA's General Insurance track.

"By supporting the basic qualification standards for all actuarial disciplines, the SOA will provide more time for the new candidate to choose his or her area of specialization, as well as providing mid-career actuarial professionals, including virtually all SOA members, with more options." —Bradley M. Smith, FSA, MAAA, Immediate Past-President of the SOA

The General Insurance track is being developed with the goal of being consistent with the existing structure of the other FSA specialty tracks. This goal will be achieved for the General Insurance fellowship track with one exception; the General Insurance track will include an additional exam. Effective July 1, 2013, all tracks to fellowship will generally include the following requirements: ASA requirements, two five-hour track-specific exams, one two-hour track-specific exam, three track-specific e-Learning modules, the Decision Making and Communication (DMAC) module and the Fellowship Admissions Course (FAC). The additional exam for the General Insurance track will be a two-hour multiple-choice exam covering the topic "Introduction to General Insurance." This exam will ensure the candidates are well versed in the wide variety of coverages included under the definition of General Insurance. The current Financial and Health Economics e-Learning module will be enhanced to include general insurance material. This module is required for the Group & Health, Individual Life and Annuities and Retirement Benefits specialty tracks and will be required for the General Insurance track as well. The module will be renamed as Financial, General Insurance and Health Economics. Associateship requirements remain unchanged. It is important to note, however, that although the current Fundamentals of Actuarial Practice (FAP) e-Learning course includes general insurance content, additional general insurance topics and activities will be added to the course in 2013.

The table below outlines the pathway to fellowship in the General Insurance track after attaining associateship.

Candidates will achieve the FSA designation after successfully completing the outlined general insurance pathway plus the DMAC and FAC.

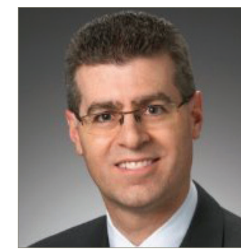
## INTRODUCTION TO GENERAL INSURANCE EXAM

This exam will be unique to the General Insurance fellowship track. General insurance covers a wide array of coverages and lines of business typically not found in the other SOA fellowship tracks. Understanding the various coverage forms and lines of business is critical to the practice of a general insurance actuary. Topics will include: various policy concepts unique to property and casualty insurance, the underwriting function, the claims adjusting function, and background on common personal and commercial lines of business. The intent of this exam is to familiarize candidates with these topics. As a result, a two-hour multiple-choice exam is planned.

## INTRODUCTION TO RATEMAKING AND RESERVING EXAM

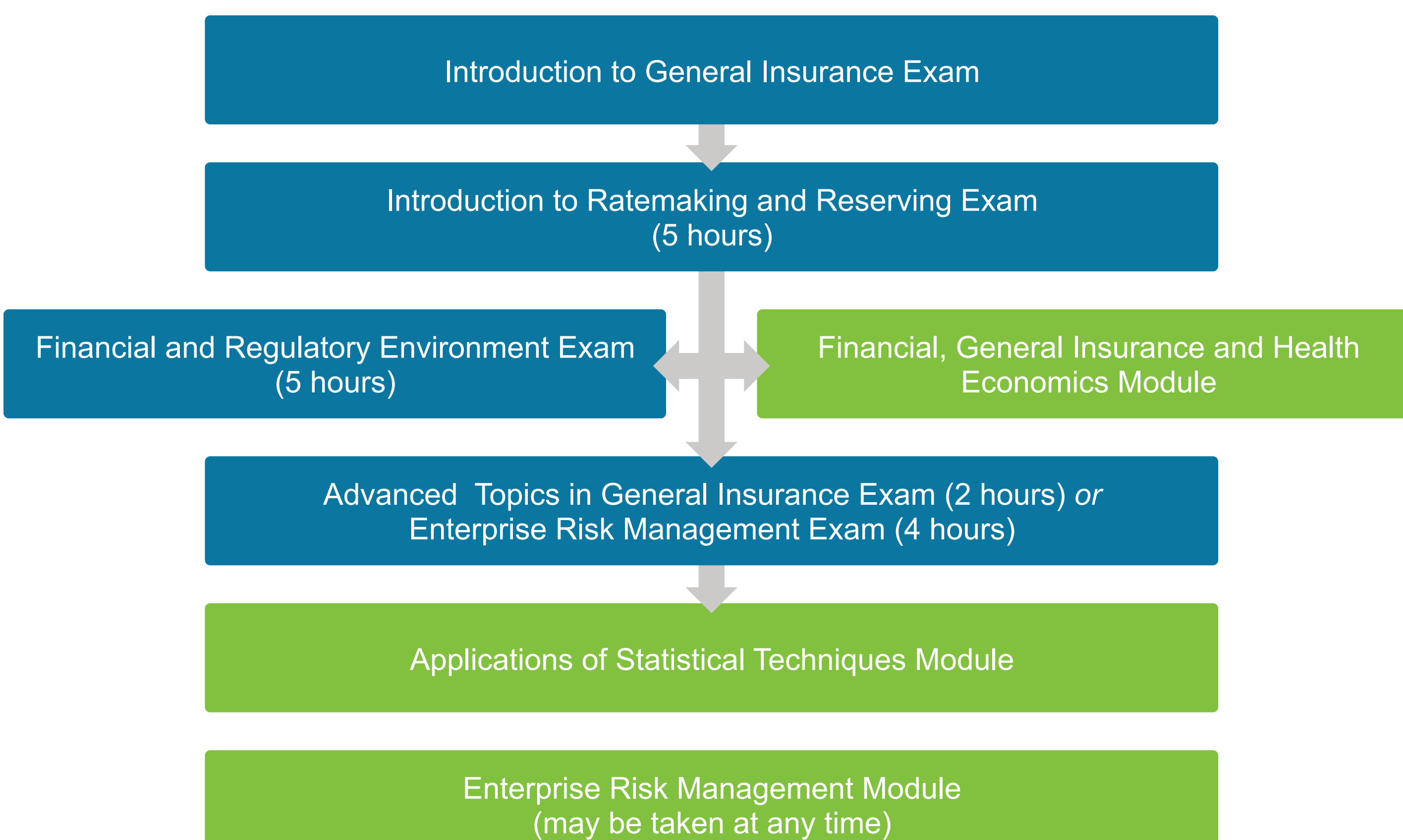
This will be the first five-hour exam. This exam will introduce candidates to the fundamental building blocks of general insurance actuarial practice. An introduction to ratemaking and reserving is the main focus, and the exam will also cover standards of practice, monitoring financial results, and communication and reporting of financial results. While this exam will need to ensure proper coverage of actuarial practice currently in use in the United States and Canada, a more global perspective is planned to ensure a holistic fundamental actuarial education in general insurance for all candidates. The format of this exam is written answer. It will be offered in the spring and fall of each year, being first offered in the fall of 2013.

Anthony E. Cappelletti



W. Scott Lennox

## General Insurance Track



## General Insurance

General insurance is often thought of as insuring some item or an entity, as opposed to insuring a life or individual in areas such as life insurance and health insurance. It is commonly referred to as "Property and Casualty" insurance in North America and "Non-Life" insurance in Asia and continental Europe. Many different types of insurance products are classified as general insurance. Examples include the following: automobile, credit, crop, liability, marine, property, surety and workers' compensation. General insurance products are often broadly categorized as commercial lines products and personal lines products.

Examples of current issues facing actuaries in general insurance include:

- Climate change and its impact on insurance regarding flood, wind and erosion damage especially in coastal areas.
- Usage-based insurance rating in personal automobile insurance.
- Developments in automobile technology (e.g., driverless automobiles).
- Credit scoring for use in the underwriting and rating of personal lines insurance.
- Potential of new mega-class-action lawsuits.
- Insurability of terrorism losses.
- Development of catastrophe models.
- Quantifying reinsurance counterparty risk.
- Evolution of capital modeling.

### FINANCIAL AND REGULATORY ENVIRONMENT EXAM

This will be the second five-hour exam. Both a U.S. and a Canadian version of the exam will be administered, each of which has its own reading list. Financial topics covered in this exam will include: the preparation of financial statements for general insurance organizations, analyzing the financial health of a general insurance organization through solvency regulation and other methods, the principles of various financial reporting standards, and the principles of reinsurance accounting. Regulatory environment topics covered in this exam will include: historical developments and current state of the general insurance regulatory environment, historical developments and current state of the litigation environment as it applies to general insurance and landmark court decisions that impact the general insurance industry. The exam will also cover the applicable standards of practice and responsibilities of the actuary as defined by regulators and the applicable national actuarial organization (American Academy of Actuaries for the U.S. exam and Canadian Institute of Actuaries for the Canadian exam). The format of this exam is written answer. It will be offered in the spring and fall of each year, being first offered in the spring of 2014.

**"Given the SOA's recognized, high-quality actuarial education and examination capabilities, I am confident we will create a world-class general insurance track." —Tonya B. Manning, FSA, MAAA, EA, FCA, President of the SOA**

### ADVANCED TOPICS IN GENERAL INSURANCE EXAM

This will be a two-hour exam. This exam will cover topics such as: reinsurance ratemaking and reserving, estimating risk transfer, excess and deductible rating, individual risk rating and strategies for achieving a portfolio rate of return. The format of this exam is written answer. It will be offered in the spring and fall of each year, being first offered in the spring of 2014. This exam will be optional in that the four-hour Enterprise Risk Management (ERM) exam may be taken instead of the Advanced Topics in General Insurance exam for those seeking the Chartered Enterprise Risk Analyst (CERA) credential. It should be noted that although this exam is optional it will likely be required to satisfy regulatory requirements for the statutory signing of reports.

### ENTERPRISE RISK MANAGEMENT EXAM

This is the current ERM exam. This four-hour exam is optional and may be taken instead of the two-hour Advanced Topics in General Insurance exam. This exam is a key component of the pathway for earning the CERA credential. This exam includes the following ERM topics: types of risks faced by an entity, risk modeling, quantification of risk, managing risk and the concept of economic capital. General insurance is already included as one of the practice-area extensions for this exam.

### APPLICATIONS OF STATISTICAL TECHNIQUES MODULE

The Applications of Statistical Techniques

## Member Views

*"I've been doing P&C work for almost 20 years now, so this feels very natural to me. When I first started working in Latin America, I was confused to find there wasn't a distinction between Life and General like there was in the United States. Then I realized that we were the ones that had it backwards."*

**Jim Toole, FSA, CERA, MAAA,** managing director, Global Insurance Services, F T I Consulting

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*"I volunteered for this because I think it will make me a better health actuary. I am looking forward to enhancing my own skill set then sharing it with other health actuaries."*

**Joan C. Barrett, FSA, MAAA,** vice president and actuary, National Accounts, UnitedHealthcare

module is an e–Learning module where candidates acquire and use knowledge that is distributed and facilitated electronically. It is a new module to be introduced in 2013. It will cover advanced ratemaking and reserving topics that are better handled in a module setting as it is an opportunity to provide a hands-on experience with case studies. Candidates will need to work through generalized linear models (GLMs) for classification ratemaking purposes, apply and evaluate advanced reserving techniques, and measure the variability in reserves.

### FINANCIAL, GENERAL INSURANCE AND HEALTH ECONOMICS MODULE

The Financial, General Insurance and Health Economics module is a revised version of the Financial and Health Economics module currently required for all tracks. The key change to this new version is the addition of general insurance material. In this e–Learning module, candidates acquire and use knowledge that is distributed and facilitated electronically. The new topics that will be added will be valuing the equity of a firm and managing interest rate, cash flow, credit and investment risks.

### ERM MODULE

The ERM module is the current ERM e-Learning module used in the other fellowship tracks and is a requirement of the General Insurance fellowship track. This module covers ERM topics such as understanding the ERM framework, identifying/defining operational risks, developing and analyzing economic capital models, and understanding various risk management approaches. It is also one of the requirements for attaining the CERA credential.

### ACTUARIAL EDUCATION AND VALIDATION

The SOA is committed to setting the global standard for a complete actuarial curriculum. Within each SOA fellowship track, the SOA strives to maintain an adequate balance between the depth and breadth of the topics covered in its syllabus. The General Insurance fellowship track will be no different. Core topics will be covered in depth. Many specialized topics will also be included. The SOA's education and validation structure includes traditional exams, interactive modules, a project (within the DMAC module) and seminars (APC and the FAC). This structure provides a complete process to validate the technical skills required by actuaries and to encourage creativity and improved communication skills.

The SOA is currently developing the learning objectives and syllabus readings for the new general insurance offerings. For example, a textbook has been commissioned for the Introduction to Ratemaking and Reserving exam. The author of this new textbook will be Jacqueline Friedland, FCIA, FCAS, MAAA, an author of actuarial educational material published for other actuarial organizations. SOA staff and volunteers are well into the process of acquiring the necessary syllabus materials and developing new syllabus materials as required. Volunteers with background in general insurance and other areas of actuarial practice have stepped forward to be involved in this important initiative. The SOA General Insurance fellowship track syllabus will allow candidates to meet or exceed the accepted standards of a qualified actuary in general insurance around the globe. A

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# Section Highlights

## ACTUARY OF THE FUTURE SECTION

**BY AOF SECTION COUNCIL**

We are each the Actuary of the Future. In order to focus on you, the Actuary of the Future, whichever path you may choose, the Actuary of the Future Section strives to:

- Be a bridge that connects you to other members, other sections, the actuarial organizations and the broader world, introducing you to ideas, people and skills that will serve you well as the Actuary of the Future.

- Be a guide as you navigate the complex and fascinating world we live in. The speed at which ideas emerge can be dizzying—we can help by alerting you to what lies ahead and providing practical advice and support in each stage of your actuarial career.

- Be an innovator, developing new ways of being the Actuary of the Future in terms of skills, techniques, knowledge and opportunity.

As we look to the future, we are reorienting our programs to maximize the impact we can have as a section of busy volunteers. A great example of this is how we will repurpose our IDEA mentoring program. Launched in 2008, this program had an influx of prospective protégés applying to find mentors but was hard for us to administer effectively. Instead, we will consult with larger organizations like The Actuarial Foundation, the International Actuarial Association (IAA) and with enthusiastic actuaries worldwide, to set up local programs, providing guidance and information, using our networks of volunteers and their insights to connect aspiring actuaries—students, job changers or international candidates—to those with useful advice, great ideas and the experience to mentor them. A

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**Ashwini Vaidya,** is chairperson of the Actuary of the Future Section. She can be contacted at *avaidya@kpmg.com*

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## PRODUCT DEVELOPMENT SECTION

**BY PAULA HODGES**

The Product Development Section's mission is to generate and disseminate literature in the field of individual life and annuity product development. To that end, we strive to conduct relevant research regarding new trends and techniques in product development, and monitor regulatory and other external forces that may influence the products we develop and the pricing associated with them. Most importantly, we publish and share the findings of the research with our section membership.

Recent research that has been funded (in full or partially) by the Product Development Section includes:

- Market Consistent Embedded Value.
- Premium Persistency.
- Select Period Mortality.
- Older Age Mortality.
- Middle Market Research.

The research topics we select generally go beyond basic experience studies. We strive to provide information that is practical and informative to our Product Development Section membership.

When a research project is completed, the section will work with the research team to deliver the information to our membership. The report is published on the SOA research website, and we often will print a summary article in *Product Matters!*, the Product Development Section's newsletter. We will also have sessions at the SOA meetings—either the Life and Annuity Symposium, held in the spring, or the SOA Annual Meeting, held in October each year—which feature interactive presentations.

In recent years, we have hosted webcasts covering our research topics, reaching a higher number of our membership. This provides an advantage over the "live" meetings which involve significantly more travel cost and time for the attendee.

These webinars have become a popular delivery method, and we schedule them shortly after the research is published.

In 2013, we will be developing podcasts to deliver high-level summaries of the research. The podcasts will be targeted to be 10 to 15 minutes in length. We hope that the podcasts will reach an even broader audience, including those who need only hear a summary of the research findings.

The Product Development Section also has a LinkedIn group, which has been the forum for several topics. The beauty of this forum is that it can provide a "near real-time" experience of research discussion between the researchers and our section membership.

While the mission of the section has been fairly constant for the 30 years that the section has existed, we continue to strive to keep current with the research we conduct, and the ways we deliver and discuss the results with our membership. A

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**Paula Hodges, FSA, MAAA,** is second vice president, associate actuary, with Ameritas Life Insurance Company, and is also the chairperson of the Product Development Section. She can be contacted at *phodges@ameritas.com*.

Out Of The Office

# ACTUARIES ON THEIR OWN TIME

For several years **STEVE FREDLUND** wrestled with how he should respond to the issues facing sub-Saharan Africa. *The Actuary* is sure you'll agree the answer he came up with is a spectacular one.

When asked to explain what Our Response is, how it got started, how he became involved in it, and what his role currently is, Fredlund states, "For several years, I had been wrestling with how I should respond to the issues facing sub-Saharan Africa; issues like drought, famine and AIDS. However, time would go by and my involvement remained only limited. Struggling with a sense that I was supposed to be doing more, I finally attended a conference specific to the issue of AIDS in Africa, with the hope of becoming more informed and also determining how I could get involved. I was surprised to connect with two leaders in my community (Cambridge, Minn.) who were there for almost identical reasons. We decided to start meeting weekly to figure out how to get more involved both personally and as a community.

"After nearly two years of discussion, reading and research we knew what we wanted: 'To unite the people of East Central Minnesota to respond to global poverty, disease, and suffering.' To carry this out, we chose World Vision out of many potential partners to help raise awareness of global issues in our rural Minnesota community and drive the people to 'respond' in a significant way. There were a few World Vision programs that recently launched that we could be a part of and we decided to focus our efforts on the community of Kivuruga (pronounced: Key vah ROO gah) in the northern part of Rwanda, in East Africa.

**The trip was impactful and left us with a confidence that we could rally and unite our community to help these beautiful people. ...**

"When we formally launched Our Response at the end of 2009, I cast the vision that by the year 2025, we will have a massive party to celebrate the self-sustainability of Kivuruga, Rwanda, knowing that during the first 10 years, the people of East Central Minnesota had provided more than $1 million of direct funding toward the effort. With the effort centered in a rural, blue collar town of about 8,000 people in the midst of a recession, most people thought I was crazy.

"In November 2009, three area leaders and I travelled to Rwanda to see first-hand the issues and opportunities while building relationships with the residents and leaders of Kivuruga and the World Vision staff. The trip was impactful and left us with a confidence that we could rally and unite our community to help these beautiful people in this wonderful place. Upon our return, I was asked to lead the effort going forward and have been volunteering as the director since the beginning."

What has been the most difficult obstacle he has had to overcome in regard to Our Response? Fredlund explains, "Leadership is always extremely difficult, and running a nonprofit is no different. There are always people who seem to take a vocal, contrarian position no matter how well-intended you might be. While I welcome any and all feedback, the most difficult personal challenge is having discussions with people who are opposed to what we are doing because we are not directing our efforts to those in need in the United States. I often respond to the question, 'What are you doing in Africa when there are so many needs here?' I typically start my answer with a question, 'Tell me a bit about what you are doing here?' More times than not, they just mutter under their

Steve Fredlund—In Kiviruga, Rwanda, East Africa.

breath and move on to verbally assault the next person trying to add beauty to the world. But, often these are comments made by people who are not involved in helping others and don't understand why we would help 'outsiders' before we help 'insiders.' To these people, I thank them for their contributions and tell them there are enough issues to go around; if we each work in the area we are passionate about, we will collectively change the world. I don't know why my passion is so strong for the people of Rwanda, but it is; so I offer my help with every ounce of my energy. For those who feel strongly about local homelessness, child obesity, human trafficking, or any of the other plagues of our day, I tell them not to get involved in what we are doing in Rwanda, but passionately contribute to eradicating the issue they most resonate with."

When asked what has been the most rewarding experience Our Response has provided him, Fredlund says, "In rural Minnesota, there is a tendency for people and organizations to operate in isolation; there are very clear lines drawn over the years of what is 'right and wrong' and who is 'in and out.' The momentum Our Response has gained lately is uniting people, businesses, churches, governments and schools that are typically on opposite sides of an issue. At a recent celebration, we had our stage filled with people from all walks of life raising a united voice. As a lifelong resident of the Cambridge, Minn. area, this is something I have longed to see and is incredibly rewarding. As I often share at events, 'in this room we have people who come from every background, live every lifestyle, and vote every ticket; there are many reasons to be a divided community. But for the sake of feeding people, tonight let's be one community; tonight let's be united. Then let's see how much of that can roll over into tomorrow.'

"On a real personal level, I was in Washington, D.C. in November 2012 for the NAIC conference and had a couple of hours free on a late afternoon. Without an appointment, I traveled into the city and found the Rwandan embassy. Only the receptionist was there, but she let me look around for about 10 minutes. As I was preparing to leave the receptionist told me that the ambassador was about to arrive and I may get to meet him, although he had another appointment scheduled. He agreed to meet me and we chatted for about 10 minutes before he was informed his appointment arrived; but the ambassador continued to talk with me for another hour before he finally excused himself. We talked about how Our Response can maximize its financial impact and the current issues surrounding Rwanda and the Congo. It was an amazing experience I will not soon forget."

"Last September (2012), we held an event called 'Step into Africa' at the Fairgrounds in Cambridge with the goal of having 3,000 people visit the event," Fredlund says when asked what Our Response's greatest accomplishment to date is. "At the end of the event, more than 4,100 people had participated and a huge impact was made in both raising awareness in the people of East Central Minnesota to the issues facing sub-Saharan Africa, but also in financial support of our efforts in Rwanda.

"Over our first three years, the funding for Rwanda has increased exponentially, now totaling more than $360,000 and we are on track for another $250,000 in 2013. We expect to reach our 10-year financial goal of $1 million within the first five to six years."

When asked what future accomplishments he hopes Our Response will make, Fredlund states, "While focused on our partnership in Kivuruga, Rwanda, we are always looking ahead to what opportunities might be next. One of the areas that we have a lot of support for, and clearly there is a lot of need, is related to medical issues; specifically maternity. On my second trip to Rwanda in 2011, we

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visited the health care facility in Kivuruga which included the maternity room. This room was about 10' x 10' in size with two beds. There is no electricity, no running water, and no floor drain. The nurse has been there 10 years, but does not have any formal training. There is nothing beyond the basic medical equipment. The waiting room and recovery room are in the same place and shared with everyone else who is at the clinic with other sicknesses. The clinic is only accessible for ambulances via very rough roads (when the roads are not flooded during the rainy season) and is about a two-hour drive from the capital of Kigali. One child dies during childbirth for every four to six who live. This is unacceptable and something we intend to fix."

Does he see an actuarial tie-in to being involved in a charitable non-profit? Fredlund says, "Actuaries are, by their nature, those who love learning and solving problems. While the issue of global poverty is quite different than developing a variable annuity, at the core are learning and solving problems. Solving risk management problems involves seeing the issues from multiple perspectives: Statutory capital, IFRS earnings, tax income, economics, hedging, operations, legal, etc. This is the same sort of multi-lens problem solving needed for the most complex issues such as global poverty. Being able to solve complex problems as well as the ability to cast a clear vision, develop effective strategies, and communicate is critical in both lines of work.

"A more direct need for actuaries might lie in the funding of programs that will transform these communities. Consider micro-financing, where loans are given to residents to start a business: perhaps $25 to open a woven basket shop or $100 to begin a mushroom farm. These are not gifts, but instead loans that are paid back and those funds are used for the next loans. The initial capital is typically funded by outside donations. There is an opportunity for larger capital investments for things such as solar panels. Actuaries have the skill set that can help solve both the issues facing these places, but also perhaps the funding challenges."

When asked if there is anything else he'd like to discuss, Fredlund states, "I have been to Rwanda twice (2009, 2011) and am travelling for the third time in the summer of 2013 with a new group of people. Seeing the impact over years helps people stay connected with their giving and understand the positive impact they are having. So many people write the check and never really understand the impact they are having; Our Response is unique in that we can bring back first-hand accounts of how that money is saving and changing lives.

"Many running events around the United States have partnered with Team World Vision to help raise awareness and money for clean water in Africa. I encourage everyone to get involved with one of these events and run for a purpose. If you want to be part of the Our Response movement, give me a shout. Although focusing on East Central Minnesota, we have involvement by people from Alaska to Maryland to India." ■

**Steve Fredlund, FSA, MAAA,** is actuary at Allianz Life Insurance Co. of North America. He can be contacted at *fredlund@allianzlife.com*.

## While the issue of global poverty is quite different than developing a variable annuity, at the core are learning and solving problems.

**SHARADA RAO** has been playing the saxophone for 25 years. What started in grade school band has grown to become a lifelong love and has included becoming a performer and a teacher.

When asked how she got started playing the saxophone, Rao states, "My school district had a great band program and both my sisters played instruments, so I wanted to play too. My older sister suggested the saxophone, my parents didn't like the cost, and those two things were very influential factors at the impressionable age of eight. As soon as I played my first note, I knew I made a friend for life."

What does she like best about playing the saxophone? Rao says, "I like the sweet tone of the instrument, the feel of the keys pressing down, and the reactions I get from people who don't think I have the right look of a sax player. It appeals to both my competitive side and my artistic side."

When asked how she got started teaching the saxophone, Rao states, "My first student was an 8th grader when I was a senior in high school, recommended to me by her middle school band director. It was a joy to watch and hear her improve. Later I taught some elementary school kids while I was in college and I loved the one-on-one interaction with the kids. In some ways, sometimes they are the ones teaching me! Currently I teach lessons at Music & Arts once a week, which I began doing in 2004. I'm glad I was able to keep music in my life during those stressful actuarial exam-taking years."

"I have a few projects in the works," says Rao, who has recently returned to her original love: performance. "Right now I'm working on a demo CD which will contain four pieces for alto sax and piano, one piece on soprano sax (also with piano) and a tenor sax piece. As a classically trained saxophone player, jazz is out of my comfort zone, but I am including a jazz piece in there.

"Another is a multimedia storytelling project by author Reshmi Hebbar, called Sweet Om America. Part of it is ready now at www.sweetomamerica.com.

"The majority of my performances involve musical theatre. In the past year I have performed in Avenue Q, Minnie the Moocher, Romeo and Juliet, and Guys and Dolls. My next performance will be in the pit orchestra for a musical called "Ragtime" at Kensington Arts Theatre (http://www.katonline.org/). The show opens on May 3 and closes on May 25."

When asked what she likes best and least about performing, Rao states, "Best: Applause and appreciation. There's so much hard work and behind the scenes dedication that goes into a theatre production. When we have a good performance and the audience had a great time, it's such a great feeling. On those nights, it takes me hours to unwind and get to sleep after the show.

"Least: Performing for empty chairs. It's heartbreaking when your loved ones can't make it or worse, don't see the point in attending these performances. It's not just about ticket sales, it's about sharing an art form with the world."

What has been her most memorable performance to date? Rao says, "My most memorable performance was my senior recital at Peabody Conservatory (part of The Johns Hopkins University). The Senior Recital is the stressful culmination of four years of intense musical training, and is required of all music majors. A bad recital means no bachelor's degree. Imagine four years of college down the drain in two hours if the performance is not up to the school's high standards. Thankfully, I did well under the pressure.

"My recital took place on Nov. 11, 2000. I used an international theme in selecting my pieces. My accompanist and my duet partner were phenomenal contributors, and my teacher was proud of me. Afterward, I joined my audience for a reception with catered Indian food. I just hope that's not the real reason they came."

Sharada Rao—with her tenor and soprano saxes.

When asked if she sees an actuarial tie-in to playing saxophone, Rao states, "Yes, in a number of ways:

1. Similar to studying for an exam, you have to push yourself to practice every day even though you'd rather be doing something else.
2. Practicing is a solo activity, just like studying. Sometimes the isolation gets intense, but the end result makes it all worthwhile.
3. Time management is crucial. While preparing for a performance, you need to pace yourself so that you don't peak too early or perform without enough preparation. The same could be said for studying for exams.
4. The expression 'The show must go on' applies to both fields. I often tell my students that if you make a mistake in a performance, the professional thing to do is to keep playing. If you fail an exam, you can't dwell on it, you have to get back to work.

And of course, the biggest tie-in of all: I hope to see my past and present co-workers in the audience."

**Sharada Rao, FSA, MAAA,** is actuary, U.S. Dept of Veterans Affairs. She can be contacted at *sharada.rao@va.gov.*

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**NATHAN WORRELL** has been refereeing high school basketball games in the Minneapolis metropolitan area for the past five years. As a former collegiate basketball player, he sees this as his opportunity to stay close to the game he loves.

When asked how he got started with refereeing, Worrell says, "My college coach introduced me to an official. I tried it out and instantly loved it. I've always had basketball as part of my life and after college I wanted a break from playing and didn't have the time to commit to coaching. By being a ref, I get to stay close to the game and watch up-and-coming talented local athletes. Also, officiating is a great challenge and a whole new way to understand and view the game."

Did he have to go through special training to become a ref? Worrell answers this way, "In Minnesota, for the high school level, refs have to: 1) pass a rules exam with a score of at least 80 percent (thanks to actuarial training, I've developed some great exam taking skills); 2) go through concussion awareness training; and 3) participate in one officiating clinic every three years.

When asked what he finds most rewarding about being a ref, Worrell states, "For me the most rewarding parts are the moments when the sport is at its best. There's nothing like being part of a competitive game that comes down to the wire and each emotional basket has fans cringing or cheering. I love seeing kids come together and work as a team to achieve a victory."

What does he find to be the most difficult part of refereeing? "Refs definitely need a thick skin because parents and coaches are very good at telling you when you screw up, or at least when they think you did," Worrell states. "That doesn't bother me too much because as a former collegiate athlete, I'm used to a little spectator harassment. That said, mistakes do happen. For me the hardest part of being a ref is being able to recover from a missed call. The game moves so fast, that if I'm still thinking about what happened a few plays ago, I'm going to miss what is happening right now. I have learned to be in the moment and then, after the game is over, to go back and review what happened for future games."

Nathan Worrell—Restarting the game.

When asked if he has any memorable moments he'd like to share, Worrell says, "A highlight for me is after the season is over, I get to volunteer for the Special Olympics. The games can be just as competitive as anything I see during the high school season, but there are also moments that I'd never see in a high school game. For example, there was the young man who celebrated anytime anyone made a basket, on his team or the opponent. It's just a great atmosphere in general and a blast to work each year."

Does he see an actuarial tie-in to being a referee? Worrell states, "I think there are many tie-ins: the ability to communicate, the intellectual challenge, the importance of integrity, the fact that both require specialized knowledge and the responsibility that comes with that knowledge (aka professionalism). Yet, two commonalities really jump out at me:

1. Judgment—Refs need to know the rules. Actuaries need to know the regulations and applicable standards of practice. But the challenge of both basketball and actuarial work is that things are more often gray than black and white, and my judgments matter. The ability to make a justifiable judgment is a skill that benefits both worlds.

2. Continuing Education/Professional Development—An official I respect basically said, 'If you're not getting better, you're getting worse.' In other words, there's no such thing as maintaining a status quo. In officiating, I review my game films, study rule books, and attend training camps. As an actuary, I'm constantly learning and challenging myself to grow in new ways." A

**Nathan Worrell, FSA, MAAA,** is staff actuary, DI & LTC Valuation Corporate Actuarial at Ameriprise Financial. He can be contacted at *nathan.j.worrell@ampf.com.*

A Look Into ERM

# HELP WANTED: RISK TOLERANCE

BY DAVE INGRAM

**MANY, MANY FIRMS** struggle with developing good statements of risk tolerance. This is startling because regulators and rating agencies alike say that good risk management requires a statement of risk tolerance.

*For this discussion, risk tolerance will be used to mean the amount of risk that an organization might choose to retain after risk mitigation. The term risk appetite, which is often used interchangeably, will be used to mean the amount of risk that an organization plans to take, usually an amount less than the risk tolerance.*

More than half of all experienced business managers faced with the question of making a statement about exactly how much risk they are willing to take choose to make vague statements and then change the subject. Most companies do not have a functional risk tolerance statement.

But a risk management system without a risk tolerance statement is like a brand new highway without any speed limit signs. Each person driving on the highway will make their own assessment of the road conditions, traffic, their car and their driving skill and make an on-the-spot decision about how fast to drive, each time they get on the road.

One driver might think that 80 MPH is a good speed while another may think that 35 MPH is prudent. Chaos will result.

That doesn't happen within a company because the employees who accept and manage risk for a firm usually keep the risk level at a similar level to what it was previously. As long as the company carefully restricts risk taking/managing by new employees until they have a "feel" for how the company does things, and the managers are rarely called upon to judge the acceptability of the risk of a totally new opportunity, this "feel" approach will usually work.

The managers of these firms cannot answer the risk tolerance question in a functional, quantitative manner usually because their approach to risk has not included regular measurement of risk. They are like the driver of the car with no speedometer who is asked to recommend speed limits. They will just stare at the questioner blankly. Or possibly just get angry at the question.

To form a good functional risk tolerance statement, the management of a company needs just two things: (1) to identify what adverse event that they will base their tolerance upon, and (2) the likelihood of that adverse event at their tolerance level.

Alternately, a risk tolerance statement can be built upon something that is itself tied directly to some likelihood, like a risk capital value at a 1/200 loss or the top speed of a car that is implicitly tied to an (unstated) level of likelihood of an accident.

But that unstated likelihood for the car speed is really the key to understanding why risk tolerance is so difficult for many, many managers.

You see, most people who drive a car will develop a tolerance for speed over time as they get experience with driving. They each have an internal mechanism that tells them that they have reached a speed that "feels" too dangerous. It is that roller coaster flip in the gut when the car barely holds the road on a tight turn; that adrenaline rush that comes right after the near accident. They are not calculating probabilities there, but their resulting tolerance could be seen to be calibrated to some safety margin that varies by individual.

Many companies are trying to respond to external pressures to form a risk tolerance statement. But often they are trying to form a risk tolerance for their company before they have any experience driving with a speedometer, in effect. The quantum of risks that a company takes is just not obvious. And even when there are individual risks that are well known, their aggregation usually is not, to any degree of precision.

So the thing that is missing for most managers is the experiential feel for their risk. Before setting a risk tolerance, they need to drive around with one eye on the speedometer of their company. That is with continual awareness of the amount of risk that the company is taking. They will need to do this for a multi-year period so that they will see when their knuckles go white.

Waiting for this experience to accumulate may not be acceptable to managers feeling pressure to get going with using a risk tolerance. To quickly accumulate a feel for the risk quantum it can work to, look backwards at the risk level for the past five to 10 years of company history. For managers who have been there long enough, they have a good feel for when the company was going a little too quickly around the corners. The risk tolerance can be set by working from that worst year and figuring out how close to that situation that the company management is comfortable getting in the future.

Now to do this, it is much easier to simply pick a likelihood number. The number then defines the risk calculation. The risk would be the amount of loss that is expected at that likelihood value given the company plans for risk taking as well as the actual risks taken.

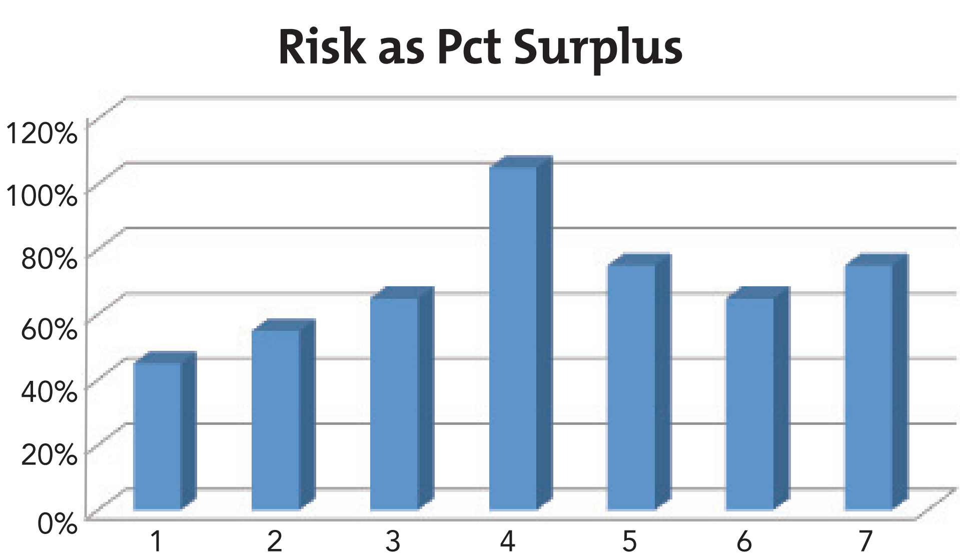
Then to build up that experience, managers need to look at the comparison between the risk and the capital or between the risk and the earnings of the company over their recent past and immediate future.

Dave Ingram

*One thing to look for is how the actual risk taken compared to the plan. In many insurance companies, goals are set in terms of premium dollars written. But in some years, the premium goal is met, but the business written is actually much riskier than the plan. This may be the reason behind the bad experiences that the company has experienced. If that is the case, then the company needs to look to strengthen risk control practices before worrying about risk tolerance.*

The graph below shows the insurance company risk number was smaller than the surplus number in all years except year 4. Company management agrees that they were too exposed to a major loss that year. So they have set their risk tolerance to their risk measure at 90 percent of surplus. With tolerance set at that level, every other year was comfortably within tolerance. They want risk tolerance to be a guide, not a leash that is already too tight.

This is the best way for management to set a risk tolerance—based upon experience, just like a person's driving speed tolerance is based upon their driving experiences. ◼




**David Ingram, FSA, CERA, MAAA,** is executive vice president with Willis Re Inc. He can be contacted at *dave.ingram@willis.com.*

A Point of View

# WHERE IS OUR NATE SILVER?

BY JAY M. JAFFE

**IN CASE YOU MISSED** the 2012 presidential election in the United States, one election guru, Nate Silver, batted nearly 1.000 in predicting the state-by-state presidential results and just missed predicting the winners in all of the 33 Senate races. Silver's FiveThirtyEight blog is now the standard by which all other election predictions are measured.

For most people, statistical models have been and will probably always be a "black box." However, you don't have to be a certified mechanic to drive a car nor do you need to have an advanced degree in statistics to appreciate the work done by Silver. Silver himself reminds the users of his work that he presents the probabilities of election results rather than a guarantee as to which candidate will win any particular election. In fact, in the state of North Dakota the eventual winner for a Senate seat had less than a 10 percent chance according to Silver but, nevertheless, she won the race. As all actuaries should know, sometimes a low probability event occurs and becomes "the exception which proves the rule."

But Silver did not just become a rock star level statistician as a result of his 2012 election predictions—he did two other things. First, Silver's work has changed the election landscape. For the foreseeable future, election predictions will be made using modeling tools and data such as used by Silver. And, second, he has established in the minds of the public the credibility of statistical models as a tool for predicting political events. This latter accomplishment is not only significant in and of itself, but also because it offers a golden opportunity for other statistical-based professions, such

## Sears' Silver

**IN EARLY DECEMBER 2012,** Paul DePodesta was appointed to the board of Sears Holding Corp. DePodesta's full-time job is the VP for player development of the New York Mets baseball club, a Harvard trained economist, and the person who developed the statistical operational plan which nearly catapulted the 2002 Oakland A's into the World Series. He is not a retail business expert!

Like the Oakland A's, Sears is now a retailing underdog. But by appointing DePodesta to its board, it openly acknowledges that it needs new tools to manage its business along with an expert who can explain these tools to the board. Other than probably having read *Moneyball* and/or seen the movie, it is doubtful if the current members of Sears' board have much firsthand knowledge of analytic business tools. On the other hand, it is almost certain that the members of Sears' board have had direct contact with actuaries in areas such as pension plans or health insurance. Yet, rather than selecting an actuary to join the board and bring analytic thinking to their organization, Sears chose DePodesta.

From this point forward, Sears will know exactly where to find its Nate Silver. It will have to look no further than its boardroom.

## Let's Talk

**LET'S START A DIALOGUE** about how the SOA can be involved in this process. Please send us your suggestions for finding an actuarial version of Nate Silver. Send an email to *theactuary@soa.org* or join the conversation at *http://blog.soa.org/*

as actuaries, to capitalize on this realization to improve how they interact with their various constituencies.

So, why does the actuarial profession need a Nate Silver? There are at least two good reasons it would be helpful to have one or more actuaries with the public presence and skills of a Nate Silver. The first reason is offensive and the second is defensive.

The first reason is to enhance the reputation and acceptance of the actuarial profession by the general public as well as the people who influence and set public policy. The actuarial profession has the expertise to bring better solutions to many individual and societal problems (e.g., Social Security, health care, etc.) which operate on actuarial principles. But we can't contribute at a high level to these areas if we remain a mystery profession. For example, when's the last time (or the first time) you saw an actuary on a popular (rather than technical) talk show discussing issues which are based on actuarial concepts? On the other hand, through his presentations Nate Silver has demonstrated that technical concepts and people can be accepted by the general public.

The defensive reason for finding a Nate Silver is readily illustrated by recent events in Italy, even though this is an extreme example. A court in L'Aquila, Italy convicted seven members of a national "Great Risks Commission" for failing to adequately warn residents of a 2009 earthquake in which more than 300 people died. These convictions clearly reflect a misunderstanding of the capabilities of statistics and statistical predictions. But, the convictions also serve as a strong reminder that to minimize the possibility that governments or the public take out their frustration on anyone making either a statistical prediction which turns out to be "incorrect" or is not presented because an event has a low probability of occurrence, it is imperative to explain to the users of information that the statisticians are not making a guarantee that a particular event may or may not happen. A Nate Silver type of person will go a long way to imparting the capabilities of actuarial science because they have the skill set to convey the concepts of statistics in advance of any catastrophic event and when such events occur, to explain that what happened was not an inaccurate statistical prediction. If the actuarial profession is concerned about its reputational risk, and each and every one of us should have this concern, having a Nate Silver on our team is the first step to minimizing this risk.

So, how do we find our Nate Silver? The good news is that the actuarial profession has an abundance of well-qualified people to become Nate Silvers. The bad news, in my opinion, is that presently we have few members who have been able to convert complicated actuarial concepts into meaningful and understandable public communications and, as a result, advance the acceptance of the profession by the public into areas in which we have expertise.

Jay M. Jaffe

The main purpose of this article is to stimulate the actuarial profession into taking the steps needed to find our Nate Silver. Creating our Nate Silver requires adopting several initiatives because we can't, nor do we want to, clone Nate Silver. Developing people with Nate Silver's skill set relies on a combination of factors including training, education, experiences, etc. It will also not happen overnight. We also need to recognize that we need to build many potential Nate Silvers because it is impossible to predict whether a specific candidate will eventually develop into a Nate Silver type person.

So, "Where's our Nate Silver?" Maybe in a year or two we'll be able to answer this question. ▪

**Jay Jaffe, FSA, MAAA,** is president, Actuarial Enterprises Ltd. He can be contacted at *jay@actentltd.com*.

The SOA At Work

# OUR 2013 INITIATIVES

**THE SOA** is a "strategic organization." That is, we have a strategic plan and we build the organization's daily work around accomplishing a set of initiatives intended to carry out our strategy. Although a number of our initiatives will take several years to complete, the beginning of the year is always a time when we're busy launching new initiatives and wrapping up those we've completed. It's also a time when we evaluate how we've done on our initiatives.

We use two types of initiatives to carry out our work: strategic and operational. Strategic initiatives directly tie to one or more of the SOA's strategic objectives and typically require SOA board policy discussion and decisions. Operational initiatives are what their name implies—"operational"—but are still major projects and require considerable resources. They usually tie directly to a strategic objective too, but may not require as much direct board review (typically because major policy decisions have already been made by the board).

Beyond the daily, ongoing work we do to serve members, candidates, and our other stakeholders, these initiatives drive much of the SOA's focus for the year. In this column, I'll discuss a few of the 2013 initiatives.

## FROM THE STRATEGIC CATEGORY

### General Insurance Education

The board's decision to create our new General Insurance fellowship track is one of our most exciting new initiatives and will allow the SOA to offer actuarial education in the full range of actuarial practice areas. This is essential for the SOA to be the leading provider of globally recognized actuarial credentials. We're heavily engaged in developing this new track in 2013. We've done much of the initial planning, have launched our marketing with candidates, focused particularly in Asia, and will launch the first new exams this fall. For more information on this effort, see the article on page 30 of this issue.

### Public Policy

The new strategic plan identifies policymakers and regulators as new stakeholders for the SOA. In 2013, we need to define what we can and must do for these stakeholders. The SOA will be developing (and the board will discuss) a proposed definition of our role in this arena. We expect this work to be completed this year and provide guidance to our efforts, particularly in research, to serve these stakeholders.

### Nontraditional Roles

Building on research already conducted, we continue looking for ways to help our members expand into new and nontraditional markets. A task force has been working since mid-2012 to complete research on opportunities in the broader financial services sector (beyond actuaries' traditional employers). This initiative will provide recommendations as to how the SOA can respond to this issue, by making research available to members or providing new types of education for our members and candidates.

## FROM THE OPERATIONAL CATEGORY

### Enhancing Candidate Relationships

This project was a strategic initiative in 2012 and included a full review of ways we can better serve our candidates. We've now identified specific projects we're pursuing including enhancement of candidate publications, development of candidate networking events, examining possible standardized study materials, and enhancing online job and internship information.

### International Membership

The SOA's membership is geographically diverse and our candidate base is even more so. The SOA is working to strengthen the value of SOA credentials by more effectively meeting the needs of our international members and candidates in a variety of ways. In 2013, we expect to increase the amount of professional development opportunities provided to our international members, provide a great deal more communication on international developments and activities to all our members, and strengthen important international relationships.

The initiatives listed above are just part of the set we're pursuing. You can see the entire list of initiatives on the SOA's website. The SOA is a strategic organization and is committed to carrying out all of these important efforts. I'm very excited about the work we're doing through these initiatives and excited about sharing our progress with you as we go. A

**— SOA Executive Director Greg Heidrich**

## THE ACTUARIAL PROFESSION IN THE NEWS

**The SOA is focused on raising awareness of actuaries in the media. Recent efforts have been successful. Here are just a few examples:**

**Future of DC Plans Hitched to Economy, Education: Outlook 2013**

Actuary and certified financial planner Joe Tomlinson discusses potential challenges in 2013. For more information, visit *www.advisorone.com*, search term Joe Tomlinson, or use the QR code.

**Challenges Ahead For Retirees In Wake Of Fiscal Cliff**

Actuary Joe Tomlinson authors an article about the impact of running out of money during retirement. For the whole story, visit *www.huffingtonpost.com*,search term, Joe Tomlinson Fiscal Cliff, or use the QR code.

**The Early Retirement Headline You're Not Seeing**

Actuary Cheryl Krueger talks about unforeseen early retirement. To read more, visit *www.lifehealthpro.com*,search term Cheryl Krueger, or use the QR code.

**Seven Planning Steps For Middle-Income Retirements**

*U.S. News & World Report* highlights SOA findings about middle-income retirement. To read the article, visit *www.usnews.com*, search term Middle-Income Retirements, or use the QR code.

**Superstorm Alters Companies' Risk Focus**

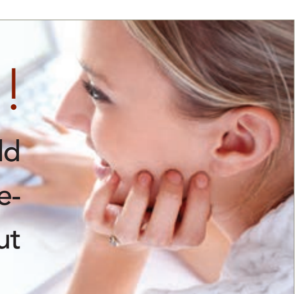
ERM thought leader Dave Ingram comments on Superstorm Sandy's impact to business and the importance of contingency planning. To read the article, visit *www.cfo.com*,Search term Superstorm Alters, or use the QR code.

**Five Questions For Steve Vernon On Generating Retirement Income**

Pension actuary Steve Vernon offers suggestions for generating income in retirement. To read the article, visit *www.retirementrevised.com*, search term Steve Vernon, or use the QR code.

View all of these articles by going to *www.soa.org/newsroom* and clicking on the Profession In The News link.

## ATTENTION READERS!



If you have an idea for an article you think should appear in *The Actuary*, or a response to something you have read in these pages, tell us about it by sending an email to *theactuary@soa.org*.

## PROFESSIONAL DEVELOPMENT OPPORTUNITIES

**REFOCUS 2013: SEE THE FUTURE FIRST**
March 3 – 6
Las Vegas, Nev.

**2013 INVESTMENT SYMPOSIUM**
March 14 – 15
New York, N.Y.

**THE LIFE INSURANCE CONFERENCE**
April 15 – 17
New Orleans, La.

**THE RETIREMENT INDUSTRY CONFERENCE**
April 17 – 19
New Orleans, La.

**ENTERPRISE RISK MANAGEMENT SYMPOSIUM**
April 22 – 24
Chicago, Ill.

**LIFE & ANNUITY SYMPOSIUM**
May 6 – 7
Toronto

**48TH ACTUARIAL RESEARCH CONFERENCE (ARC)**
Aug. 1 – 3
Philadelphia, Pa.

**CRITICAL ILLNESS INSURANCE FORUM**
Sept. 16 – 18
Ft. Lauderdale, Fla.

**DI & LTC INSURERS' FORUM**
Sept. 18 – 20
Ft. Lauderdale, Fla.

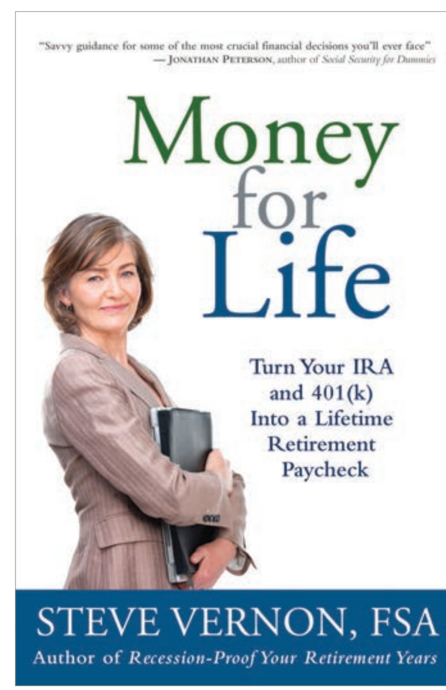
View all Professional Development opportunities by visiting *www.soa.org* and clicking on Event Calendar.

## Book Review

# *MONEY FOR LIFE, TURN YOUR IRA AND 401(K) INTO A LIFETIME RETIREMENT PAYCHECK*

**BY ANNA M. RAPPAPORT**

***MONEY FOR LIFE*** *Turn Your IRA and 401(k) Into a Lifetime Retirement Check* by Steve Vernon, FSA, is a great book and I encourage actuaries to read it, and use it with their clients and friends. It will be most interesting for actuaries who work with retirement solutions, and are seeking good ways to explain these solutions to individuals, insurance company customers, clients' employees, software developers, etc. In many respects the products offered to provide post-retirement solutions come from an industry that seems to be in silos—and within each silo are specialists working on different solutions that include a variety of special features and provisions,




using different terminology, etc. The book should also be interesting to those product development and marketing specialists in that it provides a view of the total picture from the potential customers' point of view. Some employers may wish to give the book to employees as a way to provide education about the post-retirement period. Actuaries planning for their own future will value the practical suggestions and market information provided.

## A personal perspective on the work of Steve Vernon

Steve Vernon and I both spent much of our careers in major consulting firms, where our primary client base was larger employers. Both of us have moved on to focus on helping people make better retirement decisions for themselves, although in somewhat different ways. I chair the Society of Actuaries Committee on Post-Retirement Needs and Risks and will say more about that below. Steve Vernon has used his actuarial training plus outstanding communication skills to become an author and educator. His firm, Rest of Life Communications, offers materials and education about retirement topics. And he is also a regular author of a column for *CBS MoneyWatch*, enabling him to bring important retirement-related concepts to the public on a regular basis.

I asked Steve to tell me about his work, and this is what he said: "My mission at this stage of my career is to use my actuarial skills and experience to help people make informed choices for planning their retirement. *Money for Life* presents unbiased guidance on one of the most important financial decisions that boomers will be making in the years to come."

I think his work provides a great example of what members of our profession can do so that we bring our work to a large audience.

As an actuary, I have been very concerned for a long time that many people do not understand the importance of regular lifetime income, the risk of running out of money, and the options for creating lifetime income. Actuaries generally understand the basic issues, and while some understand the options, many may not. Different options are provided by different types of financial institutions and service providers. Few actuaries practice in areas that extend across the silos responsible for the different solution types. Each of these product groups is usually described with jargon, making it confusing for those who are not expert in the specific area to understand the nuances and options. Steve Vernon has done a wonderful job of explaining the options in plain language and mostly stripping away the jargon. However, he also provides additional chapters in the second part of the book to explain the technical issues and many of the variations in some of the product groups. Chapter 16, "A Closer Look at Guaranteed Lifetime Withdrawal Benefits" is an example of such a chapter. It makes me proud to see a fellow actuary communicate so well about these issues.

For many people, the issues of deciding how to provide retirement income are confusing and they do not know where to start. In Chapter 1, "The Money for Life Five-Step System," Vernon offers a workable approach to setting up a strategy.

In Chapters 2 through 5, he lays out three "RIGs" or retirement income generation methods, and explains how each works, again in simple language for the consumer. The three RIGs are Investment Income, Systematic Withdrawals and Immediate Annuities.

The decision about which retirement income strategy to choose involves trade-offs, long-term issues, and working with a range of solutions that are not easy for the average person to understand or implement. The book sets up key characteristics to use in defining the trade-offs, and uses a simple graphical approach to show how the approaches compare (see chart below). For many people the best solution is not a single choice, but a strategy that combines different types of solutions. Chapters 6 through 8 help the reader focus on combining solutions to build a "portfolio." Chapter 6, "Hybrid Solution," explains the ideas in combining solutions. Chapter 7, "My Five Favorite Retirement Paycheck Solutions," gives case study examples of combinations, and helps the reader think about possible combinations. Chapter 8, "How to Decide Which Solution Works for You," helps the reader put all of these ideas together.

Anna M. Rappaport

Implementation choices for the solutions involve big differences in costs, and some of those who provide advice and support have a financial interest in favoring specific solutions. The book provides a practical discussion of implementation for each option and brings in issues related to how to buy products efficiently and how to implement solutions. He also includes information about different types of financial professionals who can offer advice and questions to ask, as a professional is chosen. The information

| THE FIVE-STEP SYSTEM |
|---|
| **STEP 1:** Estimate your life expectancy |
| **STEP 2:** Take inventory of your retirement resources |
| **STEP 3:** Figure out how much money you will really need |
| **STEP 4:** Decide which method(s) you'll use to generate a retirement paycheck |
| **STEP 5:** Estimate your retirement number |

**MONEY FOR LIFE™ RETIREMENT INCOME RATING SYSTEM**

| GOAL | IMMEDIATE FIXED ANNUITY | GLWB/GMWB | SYSTEMATIC WITHDRAWALS 4% | IMMEDIATE INFLATION-ADJUSTED ANNUITY |
|---|---|---|---|---|
| Amount of initial income | ● | ◗ | ◗ | ○ |
| Longevity protection | ● | ● | ○ | ● |
| Inflation protection | ○ | ◗ | ◗ | ● |
| Flexibility and Financial legacy | ○ | ◗ | ◗ | ○ |
| Exposure is minimized | ● | ● | ○ | ● |

**KEY:** ● = high or strong ◗ = medium or maybe ○ = low or none

## Excellent Example

An example of Vernon's easy-to-understand ideas: "Before we dig into the particulars of how to generate a lifetime retirement paycheck, however, it's important that you do some homework first. Consider that when painters do their job properly, they spend time sanding and prepping before getting out the paint, rollers and brushes. In the same vein, you'll need to do some prep work to get ready for the crucial task of choosing the best methods of generating retirement income, income that will last as long as you live no matter what happens in the economy."

included focuses on some specialized professional qualifications and education as well as different business models used by professionals. Examples are provided to make the points clearer. Issues such as load and no-load mutual funds are discussed. Examples are given of organizations that provide various services or types of products. This is not a buyer's guide, or comprehensive review of the market, but enough information is provided to help the reader find sources for solutions if they wish to.

## A postscript

The Committee on Post-Retirement Needs and Risks recognized the importance of decision making around retirement as a topic of vital importance several years ago. The committee has completed 11 issue briefs on different topics including one on the topic of this book. All are available on the SOA website. The issue brief is a very good introduction to this subject and helps define the question and issues. Vernon's book goes much further and provides a guide to making it happen.

If you are interested in this topic and book, you may also be interested in the research sponsored by the committee, available at *http://www.soa.org/research/research-projects/pension/research-post-retirement-needs-and-risks.aspx*.

Many times discussions about retirement planning start out with a discussion of how to get the best tax treatment and seem very tax driven. Such discussions can easily lose a focus on retirement fundamentals. Steve Vernon has a very different approach. He starts with the basics and then in Chapter 12, "Taxes Matters," shows us how taxes weave together with the big picture he has painted. I strongly agree with this approach of basics first.

In summary, there are a lot of things I like about this book. A complex set of technical issues has been translated into easy-to-understand language. They have been separated into a set of ideas that are actionable for the average person. I love the fact that the jargon has been stripped away and that there are analogies that help real people to relate to the issues in the discussion. At the same time, the technical issues are presented in part 2 for those who want to study them. I also like the presentation of trade-offs, examples and the graphics. I believe that the practical advice on implementation, provided from a neutral point of view, is a significant differentiator for this work. Vernon has done a wonderful job of explaining the options, providing information on implementation, and providing cautions about more expensive options.

*Money for Life* is available on *Amazon.com*. A

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