



SOCIETY OF ACTUARIES

Article from:

# Actuary of the Future

November 2009 – Issue 27

# What Does the Actuary of the Future Look Like? Online Roundtable—Fall 2009

by Efreml. Epstein



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*What might the 'Actuary of the Future' look like, and how does he or she differ from the actuary of today ... or yesterday? We assembled an online roundtable of some of the most respected professionals in our industry and, over the course of a week, posed a series of questions to gauge their view of where we are, where we've been and where we just might be heading.*

## Roundtable Participants

### Chris Lemming

Director and Actuary  
WellPoint

### Sim Segal

U.S. Leader of ERM Services  
Watson Wyatt

### Joel Steinberg

Senior Vice President & Chief Actuary  
New York Life

### Angie Wachholz

Senior Recruiter  
DW Simpson Global Actuarial Recruitment

### Day Yi

President  
The Infinite Actuary

**Actuary of the Future:** How has the actuarial profession changed over the last five years?

**Chris Lemming:** One change I have seen is that the career path doesn't seem to follow as much of a standard. For example, the exam system has changed, requiring companies to keep up with the changes—you can't just sit on your actuarial program for 10 years; you have to adapt.

Also, more college students are finding out about the profession, resulting in more students to choose from with more exams passed. So as hiring companies, we have had to adapt what we look for in deciding who to interview and who gets job offers.

There also seem to be more cases where an individual's experience level and exam progress don't line up neatly. A little more planning is needed to make sure those folks are getting the appropriate challenges and opportunities.

None of these things are bad; they just require greater flexibility in our recruiting and career development approaches. It increases the need for actuarial managers to build relationships and develop strong interpersonal skills.

**Angie Wachholz:** Of the changes over the last five years, we have seen a big uptick in CAT modeling, Generalized Linear Modeling (GLM) and other non-traditional areas like ERM and the CERA credential. More companies appear to be interested in hiring actuaries with good business skills, and are hiring actuaries into positions like CFO and CRO. The actuarial skill set is very attractive to companies looking to fill roles that are not specifically 'actuarial' but require a broad understanding of business trends. Perhaps the reason for this is that actuarial student programs seem to be focusing more on developing actuaries with broader business skills—this is especially true of students coming right out of university.

Additionally, we have also seen an increase in roles focusing on health care analytics and health care economics. People are making more extensive use of predictive modeling and qualitative analysis within the health arena.

Furthermore, on a more international scale, fields within the actuarial arena seem to be widening—both in terms of scope of positions as well as geographical location. We have seen several companies in India, Asia and the

Middle East join the global framework of risk and hire actuaries to help assess the risk of our global economy.

**CL:** I agree with Angie's comments about health care and seeing more focus on health care analytics and predictive modeling.

And technology is having an impact on us as with all industries. We are coming up with more complicated processes, moving them to semi-production and production more quickly, and our reports have to be more user-friendly—easy to read, nice appearance, easy to update and make changes, automated with buttons and graphs, etc.

**Day Yi:** From the educational perspective, I have witnessed a migration toward embracing technology to

educate, train and evaluate actuaries. We have witnessed an increased utilization of the Web to disseminate information. We have seen actuarial exams being offered using CBT (computer-based testing) to reduce dependencies on manual processes. Many exam preparation services have moved toward the virtual classroom to help students prepare for their exams without having to be physically present to receive the instruction.

With the myriad of information-gathering tools accessible to the 21st century actuary—in particular the PC and smartphones—it was inevitable and necessary that the actuarial profession make use of the available technology with an eye toward improving efficiencies and presenting an image that the profession is keeping up with the times.

**Sim Segal:** One trend is the increasing desire of employers for actuaries with business-savvy skills, where actuaries are typically not strong. This has been confirmed in SOA employer and member surveys. As a result, in recent years, the number of actuaries in leadership positions has actually declined. Employers have expressed that they would expand the roles of actuaries, particularly in leadership positions, for actuaries who have these skills.

Another trend has been an increasing shortage of actuaries in the health arena. There are a wide range of roles actuaries can play in this field, and employers often go without actuaries due to the lack of availability. The SOA has launched a task force to research these opportunities.

A third trend has been the development of the ERM market, which continues to grow. Virtually all consulting firms, IT firms, universities and conference planners have been emphasizing ERM. The SOA has made a bold move into this space, with the creation of the CERA credential, the most rigorous ERM credential in the world. This has been accompanied by an aggressive SOA marketing campaign. Partly as a result of these

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efforts, actuaries have been landing ERM-related roles at traditional employers (e.g., chief risk officer at insurance companies), and also some opportunities at nontraditional employers, such as non-financial services companies.



A fourth trend has been that new FSAs often have fewer years of experience than those in the past. As a result, employers have been looking to adjust their pay scales for new FSAs, and at least one of the top three U.S. insurance companies has recently done so.

**Joel Steinberg:** I have gone through a couple of the other responses.

I agree that there has been a significant increase in interest in ERM and the consideration and modeling of risk in general. ERM, along with understanding and modeling economic capital will be a growing area for actuaries. We need to remember that we develop models to help us understand risk. Due to uncertainties in certain critical assumptions, the models often cannot be relied upon as precision instruments. As a result, we can get into more dangerous territory when our models are instead used to justify additional risk taking.

Although moving slowly, there is a clear move toward more principle-based approaches for reserves and capital that will impact how we do our jobs in the future.

In terms of qualifications, the travel time to FSA has shrunk for many. This is a combination of the increasing number of exams new hires have coming out of college, coupled with fewer exams and the ability to complete the exams more quickly (due to computer-based testing, three exams can be passed in a year without doubling up). As a result, new FSAs often have less experience than in the past, and I believe this is beginning to have some impact when considering the value of the FSA designation.

There is also no question that stronger management and communication skills along with business 'smarts' are being sought by employers of actuaries. It is more difficult today to enter the profession and be successful with just a strong mathematics background.

**AOF:** Has the exam/credentialing process adjusted to the changes in our industry/profession? If not, do you feel they can or should be addressed through continuing education?

**AW:** I believe that there are some aspects of the exam/credentialing process that can be dealt with via continuing education. However, this should not replace the exam structure.

The exam system/structure is one of the things that sets actuaries apart from other professions. There are few people who understand the amount of time (hundreds of hours) that goes into taking (and passing!) an exam. This rigorous structure is what makes actuaries unique. Replacing the demanding standards of exam passage to include more continuing education might diminish the value of the actuarial designation.

**DY:** In some ways, yes. The introduction of online modules to complete the ASA designation is in concert with the SOA's movement toward using technology as an educational tool. While some of the rigors of live, in-person testing have been eliminated, the end result should be the same in theory. In my opinion, the exam structure is a constant tweaking process that undergoes changes every few years to address the concerns and needs of the industry.

**CL:** Certainly the delivery of the exams and study materials is adapting to changing technology. I'm not familiar enough with the content being tested to comment on that portion.

If we carry the question over to whether we should be testing better business skills, communication skills, the broader skills we talked about yesterday, I lean toward no.

The essay nature of the later exams touches on that to some degree. And it's not something you can test and get a definitive score on. They are important skills that actuaries, or anyone, can use to distinguish themselves, and someone without those skills may find that their credentials aren't taking them as far as they had anticipated. But there is an intangible nature to it that can't be captured quantitatively.

**SS:** The SOA has been adapting to the changing environment in several ways; here are a few examples:

1) Exams: The SOA periodically updates the exam syllabus; as Day said, this is done every few years or so.

2) Continuing education: The SOA just this past year made major changes to the continuing professional development requirements. Also, the SOA has made changes in the content delivered at SOA meetings, including joint sessions between the Management and Personal Development Section and other sections, to incorporate content on business-savvy skills. As Chris said, it's challenging to find the best way to provide these skills, and this is one alternative that has received positive feedback.

3) University actuarial science programs: The SOA has been encouraging university actuarial programs to develop and maintain certain standards; this is a relatively new development and one which should bear fruit over the coming years.

## IN MANY WAYS, GAINING ENTRY INTO THE ACTUARIAL PROFESSION IS INDEPENDENT OF THE SIZE AND RENOWN OF THE STUDENT'S ALMA MATER.

**DY:** Thanks for your comments, Sim. I wasn't aware of #3. We have seen a greater number of college (and even high school) students express interest in taking exams through inquiries made to our company. This might be a result of the SOA's initiatives. We are also seeing many of the smaller colleges develop student programs/actuarial departments/actuarial clubs. In many ways, gaining entry into the actuarial profession is independent of the size and renown of the student's alma mater. Their success on the exams will often speak greater volumes than other skills/knowledge when it comes to placement.

**AOF:** There have been a lot of news items lately that can impact our profession including a new administration, health care and the economy. Which current events issue or issues do you believe are of greatest interest or concern to the actuarial profession?

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**AW:** In several of my recent conversations, one of the current areas of concern is first, securing a position with a stable company and second, finding an opportunity that has long-term growth potential. It is important to be as flexible as possible given the current economic situation—this pertains to location, scope of the position, specific responsibilities, etc. What needs to be remembered is that now more than ever, the findings and opinions of actuaries can be viewed as the criterion by which companies project goals and explain trends. As a result, the need for actuaries continues to increase across all disciplines, regardless of any short-term reductions in demand because of economic conditions.

**CL:** As an actuary at a large health insurer, health care reform is an issue close to my peers and me. I expect that the nature of what we do won't change; we'll still be deciding how to design and price our products within a given framework. There will be some exciting and interesting times, though, as the framework changes and we get to figure out how best to play the game under the new rules.

**NOW WITH MANY COMPANIES SLASHING TRAVEL EXPENSES AND REDUCING CAPS ON SPENDING, THERE IS A GREATER EMPHASIS ON SEEKING THE BEST VALUE FOR THE COMPANIES' DOLLAR.**

**SS:** The financial crisis is the largest of the three issues. In the long run, the increased awareness of risk will likely expand opportunities for actuaries across all geographies and industries. In the short run, I agree with Angie that foremost on most actuaries' minds is employment at a stable company. Most of us have likely never seen so many actuaries in transition. These days, the mantra seems to be "survival is the new success."

**DY:** One issue with which actuarial students are dealing is the cutting back of company-wide expenses. In the past, generous study programs were always an attractor for the exam-taking job candidate. So companies were wise to get their student support programs in line with their competitors'. Now with many companies slashing travel expenses and reducing caps on spending, there is a greater emphasis on seeking the best value for the companies' dollar. Student programs are no longer writing blank checks so that their students can go on a shopping spree. It's hard to predict what will happen five to 10 years from now. But since the rule "more exams passed equals higher pay," will likely never be broken, employers will have to keep a minimum standard for their student programs so that they can recruit the best students to become their future leaders.

**AW:** I agree with Day that several companies are cutting back on expenses—especially with regard to student programs. What we have seen recently is a 'freeze' with regard to both salary/merit increases as well as exam raises. However, it is just that—a temporary measure—and the programs and raises associated with passing exams will likely be readdressed (and reinstated) once things stabilize.

**JS:** While the short-term impacts of the current economic crisis and the impact on individual companies and actuarial employment is foremost in many minds, the fact is that the crisis highlights the need for actuaries going forward. The critical importance of risk management will be emphasized to a greater extent, and in the next few years there will likely be a transformation in the ways companies are examined from an accounting (Principle-Based Reserves?, International Accounting Standards?) and solvency perspective (Solvency II? or Principle-Based Approaches?), along with a possible change in the way the industry is regulated (State/Fed. Regulation?/Optional Federal Charter?).



Along with these changes should come additional opportunities for actuaries. I am optimistic that the next generation of actuaries will be given the opportunity to shine (I continue to recommend the profession to my two oldest kids, but they will undoubtedly continue to ignore me!).

**AOF:** As alluded to earlier, the CERA credential has given our profession a much stronger presence in the ERM sector. In the long term, are there any other areas into which you could envision actuarial expertise transcending?

**AW:** It was only a few years ago that the chief risk officer, for example, became an integral component in the insurance/reinsurance arena. Companies have increasingly sought to hire actuaries into such nontraditional roles because of the relevance of the actuarial skill set as well as the actuary's understanding of business trends. Today's actuaries must have acute business acumen and the ability to convey technical ideas to clients and other nontechnical audiences. This integration of actuarial and business strategy skills fosters a continued involvement in enterprise risk management/CERA initiatives and, to name a few, insurance companies, the financial services industry and rating agencies.

What this means is that the actuarial skill set is permeating several components of a company's hiring structure. Furthermore, this means that the demand for actuaries (as Joel alluded to in the last question) will continue to rise. With the changing economic climate, what will transcend is the skill set that is specific to actuaries. Therefore, companies will continue to look to the actuary to help evaluate several components of both the internal and external company framework.

**SS:** To Angie's point about the specific skill set of actuaries, our core skill is measuring and managing risk. The heightened awareness of risk due to the financial crisis is expected to generate opportunities for actuaries in ERM



at all types of companies, far beyond the financial services sector. However, there are other areas where our core skills can add value. Such areas may include government budget projections, homeland security and retail financial planning, to name a few. We just need to think a bit more broadly about our skills and the potential opportunities. A while back, I met an employee of a telecommunications company, whose job was performing projections, who began taking actuarial exams to prepare for an alternate career, in case he was downsized. He soon discovered applications of actuarial science to his work that had never been tried before, and the success he achieved resulted in widespread recognition at his firm. The lesson for us is that once we start looking, we may find a wide variety of opportunities.

**DY:** One of my good friends works for the Elias Sports Bureau as a sports statistician. I know several actuaries who are successful stock traders. Some operate their own sports fantasy league businesses. In keeping with what Sim said, if you look hard enough where your talents and hobbies intersect, many opportunities can open up for a person with strong actuarial skills.

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**AOF:** Please finish the following sentence. I'd recommend people enter the actuarial profession because ...

**AW:** I'd recommend people enter the actuarial profession because it offers a stable, long-term career. Given the economy we are facing, it is important to put one's self in a position to succeed, and the actuarial profession does this. It offers a level of professionalism (through exams, for example) as well as an overarching career trajectory that is unparalleled by other professions. There is a great deal of room for growth—whether this comes in the form of management, presentation skills or movement with one's own company that allows for both personal and professional development.

As we see the demand for risk management rise, surely the demand for actuaries will as well. What we have seen lately is a surge in the number of people choosing an actuarial science major as well as an uptick in the number and scope of companies that employ actuaries. Becoming an actuary puts someone at the forefront of the global insurance and finance sectors—what better place to be now than this?

**CL:** I recommend the actuarial profession because it is consistently ranked as one of the top professions. It is a stable career with good rewards, filled with opportunities for development and advancement. Even those who decide that the exams are not for them have great opportunities to demonstrate their skills, and from what I've seen, can be pretty successful at finding other good job opportunities.

Perhaps the biggest advantage for younger folks deciding on a career is the initial starting point and early career path. With just an undergraduate degree you can earn a very nice salary immediately, with lots of opportunities to increase that salary, while gaining experience and getting on-the-job time to pursue your credentials.

**SS:** I recommend people enter our profession for the same reasons I did, which are still just as valid today: It is like continuing university and working at the same time, giving you the best of both worlds; it involves so many different disciplines (e.g., math, IT, investments, law, medicine, etc.) and functions (product development, pricing, financial reporting, etc.) that it's fun and interesting and you have time to select a 'major' in the field; it is a very noble role—we help companies keep the long-term promises they make to society; and it provides you with an extremely intelligent and highly ethical peer group throughout your career.

**DY:** I'd recommend people enter the actuarial profession because, outside of the obvious pluses and not to be redundant, there is a level playing field created for all starting students as a result of the exam system. If you can pass the exams, there will be a job waiting for you. You can graduate from an Ivy League institution or from your local community college. An exam passed is an exam passed. I've witnessed many colleagues rise through the ranks rapidly due to their successful performance on the exams. This objective measuring of a student's progress makes it easy to set goals and gives motivation to studying while others might be out partying. While the exam performance will not entirely define an actuary, it will definitely set the diligent student off on the right foot. Where that ultimately takes the student will then be determined by what he or she can do on the job and bring value to the employer. ☆