SCORviews

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MESSAGE FROM THE SCOR GLOBAL LIFE AMERICAS CEO

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Leading the Change

Consumer expectations plus big data and InsurTech drive the changes we see in the industry and in the roles that actuaries perform. Though we must all prepare to operate in a much different world than what we have thrived in, actuaries are on the leading edge of change.

This issue of *SCORviews* demonstrates how actuaries are transitioning into new roles and collaborating with functional areas inside their companies and with new players from outside the industry.

James Lynch, Head of Americas Data Analytics, and Greg Tolleson, a Data Scientist working in our Knowledge Center, discuss the future of predictive modeling in life insurance and the potential of data and machine learning to improve the accuracy of forecasting outcomes.

Interviews with three SCOR actuaries illustrate how the profession is evolving and expanding.

- Chief Actuary Sean Hayward says the demands of regulatory changes fostered the industry's approach to using data and technology and encourage today's actuaries to expand their business perspectives.
- James Lynch shares how good timing and personal interests helped him carve out a fulfilling career path at the intersection of actuarial and data science.
- Manisha Dias, who leads business development with our Strategic Partnership team, explains how curiosity, creativity and customer-centricity elevate an actuary's non-traditional career opportunities.

In this issue, you'll also get a preview of the sixth Global Consumer Study, conducted by SCOR affiliate ReMark. The study, entitled "Beyond Life: The Experience of Living," takes the pulse of consumer health to examine the burgeoning desire for wellness solutions, applications of machine learning and artificial intelligence – developments that are attracting attention from both consumers and the industry.

We hope to see many of you at the Annual Meeting of the Society of Actuaries in Toronto. SCOR, a regular sponsor of the meeting, is also well represented in the sessions. You'll find a list of SCOR speakers on the back cover of this edition. And, as always, we are pleased to host the Women's Leadership Session and Luncheon. This is our 13th year as sponsor, and we have an especially good session featuring EY's Kris Pederson, who will discuss purpose-driven innovation. ■

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SCOR
The Art & Science of Risk

PREDICTIVE MODELING

Tools for Better Forecasting

The relative movement of stars and planets is well understood today. Before Copernicus, scientists believed Earth was the center of the universe. Copernicus theorized heliocentrism but it took another century before Galileo and his telescope (a better tool) would gather data to justify the theory. Copernicus was right but it was the presence of better tools that allowed for more accurate forecasting.

Today we know that Halley's Comet will be visible from Earth on July 28, 2061. Such accuracy was always there. Planets and stars have always moved in the same predictable ways. We understand this well today, with tools much better than Galileo's.

So it is with other aspects of the natural and even the man-made world. In life insurance, we've been forecasting outcomes for as long as we've been pricing and underwriting risk. Fortunately, with the improvement of tools for gathering and analyzing data continuing, we will be able to forecast outcomes more accurately.

By **James Lynch**
Head of Americas Data Analytics
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By **Greg Tolleson**
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Introduction to predictive modelling

We will generally define predictive modelling (PM) as using data to predict an outcome or calculating the likelihood of a future event. PM includes traditional inferential techniques which actuaries and statisticians have mastered.

New tools are available to solve the same sorts of problems, and more are created each day. We will refer to these new tools generally as machine learning (ML) but not limit the idea. This also invokes the terms artificial intelligence and data science.

With high volumes of data, ML is better at making predictions than earlier tools, much as a modern telescope is superior to Galileo's refractive lens. Selecting the right tool for the job is a critical component to any successful ML solution. Artificial intelligence, for example, is just one type of tool, and it may or may not be the best choice.

The future of PM in life insurance

Predictive models using machine learning can and will be used to help optimize every aspect of the insurance value chain over the next five years:

- Targeted distribution and risk selection
- Underwriting (traditional, automated, hybrid, simplified…)
- Actuarial assumption setting and calibration
- Increasingly individualized pricing
- In-force management and retention
- Claims processing and fraud detection
- Overall health and wellbeing through wearables and continuous data

Machine learning is here to stay, and in order to use it effectively it is critical to combine the talents of specialists from outside the industry with those inside. Resistance and/or conservatism from both sides has slowed the industry's response to the science.

The ability to accurately identify the risk of a given individual is the foundation of a successful life insurance company. To do this the current underwriting paradigm needs to change. The cornerstone of challenging traditional underwriting rests in leveraging mortality feedback. As the number of deaths increases, more and more features can be evaluated, and their predictive power can be compared to traditional evidence.

SCOR has formed a cross functional team of underwriters, actuaries, and modelers with a variety of backgrounds including actuarial, statistical, or data science. These experts know our industry and are embracing the changing landscape to create a new underwriting process.

Continued

Intersection of tools and data

Over the last decade the growth of open-source programming languages and platforms coupled with easy-to-obtain data from third-party data sources have created an environment in which modelling can thrive. Meanwhile cloud computing solutions have become cheaper, easier and more secure.

SCOR actuaries and data scientists have become skilled at using both the new tools and data sources. We will continue to develop these skills as we execute our strategic plan, which has a large focus on data and analytics. We use data from laboratories, the federal government, EHR aggregators, credit bureaus, and continuously emerging non-traditional sources.

Barriers to adopting PM methods

- Proper change management is critical. Some individuals may perceive their skill set is less relevant, and therefore resist change. In fact, the opposite is true as the methods used and lessons learned of older PM methods need to be fully integrated into a strategy going forward. Organizations need to work towards filling technical skills gaps of experienced employees while simultaneously providing business knowledge to resources coming from outside of the industry.
- Some methods will be considered "black boxes." In fact, many tree-based methods lead to easily explained algorithms. Conversely, a coefficient-based model which is usually regarded as highly interpretable can be very misleading when covariates are correlated. Most importantly, new techniques can be used to provide very clear explanations of individual predictions. These techniques must be understood and embraced by regulators for PM to be successful.

Challenges to using ML and other non-traditional methods

ML carries some challenges. Many of these methods are completely free (open source) but still state of the science. While they are easy to use, the temptation of cargo cult science is always present, and we must be on guard against choosing easy over best.

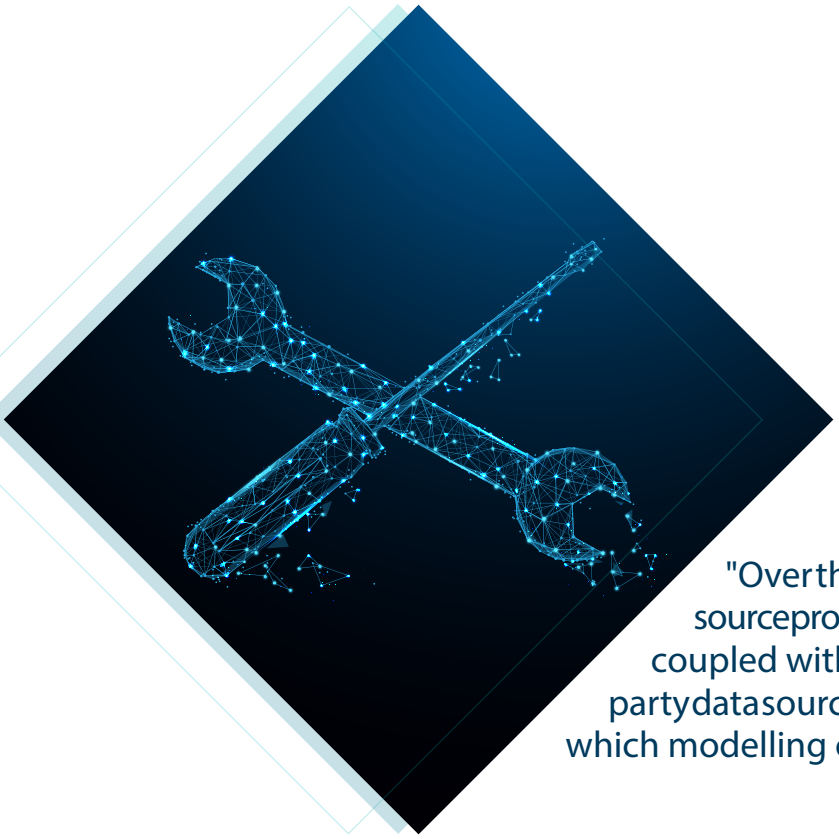
- A forecast may not be accurate because it was not adequately represented in the training dataset. The analyst must know what the dataset represents and to whom it can be applied. These are not always cases of bad algorithms or bad techniques but can be due to non-representative data
- Sometimes poorly performing models actually can advance the analysis. Things that are of low incidence and hard to forecast, e.g., the probability an individual will die during a certain term, may still be modelled. The resulting individual forecasts may be quite inaccurate but completely applicable to the analyses in larger swaths—a portfolio or subset or even the whole company's data. Accepting an algorithm's ability to provide analytical insights while struggling to make individual classifications requires progressive thinking
- Different (sometimes very different) models can provide similar results. Because two very different resulting algorithms can make very similar predictions doesn't discredit one or the other. Business considerations can be a differentiator in these situations, where one model may be less disruptive than the other
- As the number of human decisions is reduced (not eliminated) the impact of a few individuals is amplified, with the benefit of offsetting errors going away. Actuaries must continue to define the guardrails for predictive models

Conclusion

Predictive modelling already influences almost every aspect of the insurance process. The degree to which models influence decision-making will continue to increase, and actuaries are well positioned to drive that trend in the direction that benefits both policyholders and business outcomes.

Through its partnerships, SCOR is continually evaluating a wide variety of data sources using advanced machine learning techniques executed by a cross functional and business savvy innovation team. We are using this information to create a ML driven underwriting framework which is flexible enough to incorporate new information at the same pace that it is made available.

While we know exactly where Halley's comet will be 42 years from now, the future of underwriting in the life insurance industry is in some sense certain to be uncertain: the data used, the methods used, and the degree to which ML is deployed will be entirely different from what it is today. Actuaries are extremely well positioned to adapt to and champion this change, but we need to come together with other experts to embrace a new way of thinking. ■



"Over the last decade the growth of open-source programming languages and platforms coupled with easy-to-obtain data from third-party data sources have created an environment in which modelling can thrive."

Beyond Life: The Experience of Living

ReMark's sixth Global Consumer Study examines the latest consumer attitudes and behavioural trends in the insurance industry. This year's study takes the pulse of consumer health to examine the burgeoning desire for wellness solutions, applications of machine learning and Artificial Intelligence – developments that are attracting attention from both consumers and industry.

By **Mandy Luo**
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Customers want security

Educated, tech savvy consumers are increasingly concerned with doing the very best for themselves – and are looking for trusted providers to support and reward their commitment with products and services which create a broader definition of protection.

By and large, these engaged consumers understand and recognise the need to get active and welcome the role that technology plays in their quest for a healthier self. Amongst this cohort, activity levels are increasing, diets are changing, and health management is improving the quality of life for those living with chronic conditions.

Appetite for improvement

With a near universal appreciation of the benefits of healthier living and a widespread acceptance that there is room for improvement – a mere 4% felt there was no aspect of their lifestyle they could improve – healthier living is high on the agenda of consumers and insurers alike.

And with engaged consumers keen to use technology to advance and achieve their health goals – starting with more exercise (27.3%) and less stress (22.7%) – advances in fitness tracking technology offer the promise of a symbiotic relationship between insurers and consumers.

Q. What is your attitude towards the use of Artificial Intelligence in the provision of customer services?

By Country	% always prefer human interaction
Australia	54.6%
Canada	57.8%
Chile	49.2%
China	31.8%
France	60.6%
Germany	57.6%
India	49.9%
Indonesia	48.1%
Japan	22.7%

By Country	% always prefer human interaction
Malaysia	44.6%
Mexico	41.9%
South Africa	40.3%
South Korea	28.2%
Spain	49.1%
UK	55.9%
US	53.6%
Average	**46.6%**

Where there's a will, there's a wearable

Consumers are keen to know much more about themselves and are receptive to tech developments that advance their understanding. Such developments should be considered for their potential impact on an individual customer's health management and the industry's product design and risk management, but not at the cost of the customer experience.

Wearables are closely linked with achieving fitness objectives, with a third of users considering them to be an aid to a healthier lifestyle. Adoption figures increase year on year, with an encouraging 65% of respondents claiming to own a wearable or with the intention to do so. And with 60% considering them to have a positive impact on their exercise regime, insurers aiming to promote the use of wearables will find themselves preaching to the converted.

But recognising the need for behavioural change is one thing. Sustaining the motivation to make those changes is quite another.

New technologies, particularly advances in tracking and monitoring devices, provide the means for a mutually beneficial cooperation between life insurers and their customers. The confluence of a responsible, health-conscious consumer, personal tech and real-time data monitoring make proactive health management a reality, enabling individuals to manage and even prevent a range of medical conditions.

Insurers in search of a role

For the insurer in search of a role, influence, like trust, is there to be earned by building stronger relationships. Partnership is key between insurer and customer – and essential between insurer and medical tech experts to develop health management solutions that serve the customer's interest. By facilitating, promoting and supporting healthier lifestyles, insurers stand to benefit twice – from improved mortality risk and from stronger customer relationships.

> "Consumers are keen to know much more about themselves and are receptive to tech developments that advance their understanding."

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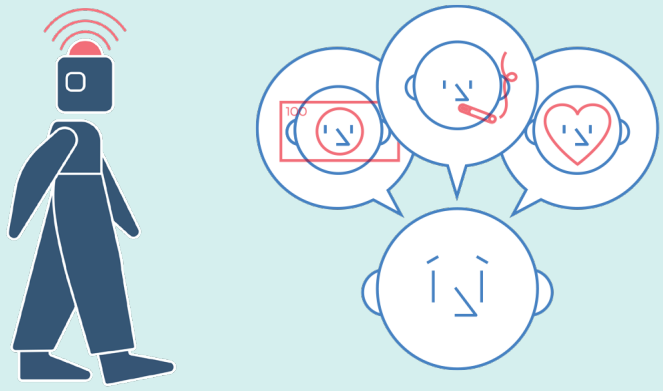
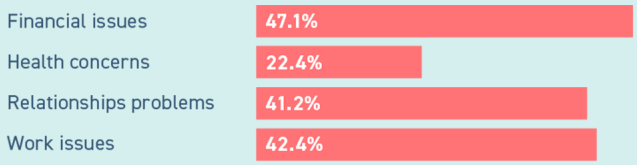
Beyond Life: The Experience of Living

Cont.

Q. When you feel stressed, what are the main causes of this stress?





AI – always invisible

5G, IoT, AI – connectivity, capacity, capability and opportunity are burgeoning. The technology that drives it will become ever more complex and largely invisible, indivisible from what we do and how we do it.

Consumer understanding of AI is generally low and, though a global average of 40% claim to be comfortable using AI in insurance, consumers are still cautious of its use in the insurance sector. But it's an upward trajectory , and familiarity with consumer AI devices breeds contentment. Hence India's 64.8% device ownership yields a 77.7% rating for those comfortable using AI in insurance, while Japan's comparatively low ownership of 23.4% translates to just 28.3% comfort rating.

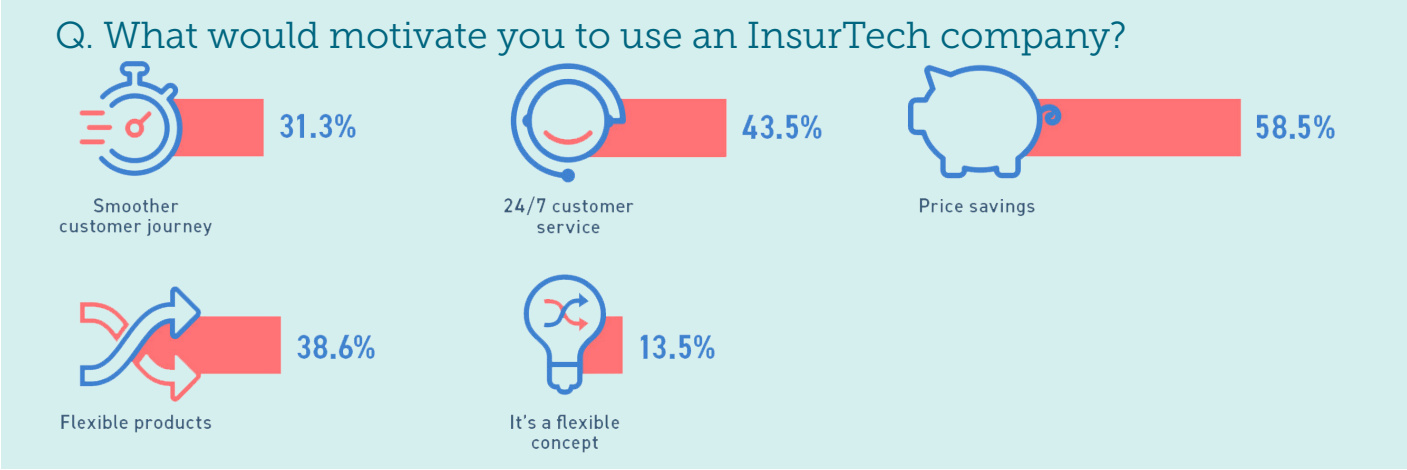
Whether consumers really do understand the AI they encounter, the complexity is baffling to most and largely irrelevant from a consumer perspective. Just make it work.

As ever, information, education and robust governance count, for both consumers and partners alike. The industry has a responsibility to its customers to ensure that tech developments are applied without undue discrimination. Doubts and fears will persist, but deployed to enhance the consumer experience, AI can be more readily "accepted" unseen and everywhere.

Working with unicorns – collaboration not capitulation

The insurance industry is ripe for disruption – but it doesn't follow that traditional insurers are ripe for destruction. Creating a frictionless experience and sustainable value is not a lone pursuit. And the fear that established players will be comprehensively rolled over by InsurTech entrants has yet to be realised. While price savings would encourage 59% of respondents to purchase from a non-insurance brand, 56% would be concerned about the financial security of such a brand.

The evidence suggests it's not a binary choice. What we see in practice is partnership and collaboration, insurers and innovators playing to their strengths to develop the best customer experience. Although barriers to entry have been lowered, the bar remains sufficiently high – and consumer confidence in buying protection from non-insurance brands sufficiently low at just 12% – that collaboration is a more effective path to success for both incumbent and challenger, especially in the Life Insurance sector.



A new language for Life

In short – no corporate body is an island. Such is the complexity of a seamless customer experience – of the insurance ecosystem, of providing sustainable, long-term value – that no one operates in isolation.

Consumer sentiment and contemporary expectations suggest that companies have a stronger than ever role to play in developing society. But the demands are greater too – more is expected, less excepted. Tech-savvy they may be, but with 46% still preferring human interaction in customer service, consumers understandably want the best of both worlds.

Understanding is key. By learning about, and contributing to, each individual consumer's health development and prioritising the positive factors that could improve their health or aid prevention, insurers can make a real difference to underlying health – changing the industry's image by creating a more personalised, proactive and holistic consumer experience for insurance protection. That is, after all, the name of the game. ■

"What we see in practice is partnership andcollaboration.Insurersandinnovators playing to their strengths to develop the best customer experience."

Changing Actuarial Roles

Interviews with three SCOR actuaries illustrate diversity in experiences and responsibilities within the profession.

THE IMPORTANCE OF FLEXIBILITY

Sean Hayward
Chief Actuary
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> The transition to PBR, IFRS 17, the changes in US GAAP and so on really forced companies to use data and technology more effectively, which has benefited both the client facing and back office sides of the business.

What career path brought you to your current role as chief actuary at SCOR Global Life?

Sean: I certainly had an atypical path to chief actuary. There are two distinct phases to my actuarial career. I started out at as a consultant at Deloitte, which was a great cultural fit for me. But I wanted to travel less, so I went on to work as a financial actuary at an insurance company, eventually leading the valuation team at Allianz Life in Minneapolis. That role was very interesting and, to be honest, had I not wanted to move back to Winnipeg where my wife and I are from, I never would have left Allianz.

The second phase of my career began with a completely non-actuarial role at an investment management company doing quantitative research and coding financial reporting software. This was in the 2008-2009 period. Not only was it a tough time to be in that industry but it also made me realize what I really enjoyed doing and what I needed to get back to.

Since there were no jobs for actuaries in Winnipeg, I began a 10-year stretch at an actuarial software company. I was the product owner for Prophet actuarial software systems, which involved working closely with numerous clients and prospects figuring out what they needed and how to get it. I've worked on pretty much every situation related to GAAP and STAT reporting from profit testing, projections, reserving, stochastic modelling and so on. Nothing really surprises me too much. So, while my path to chief actuary has been atypical and may not be for everyone, it actually prepared me very well.

You've been in the thick of the various accounting regime changes. What are your key observations?

Sean: I think the demands of new accounting regimes have helped to foster a different mindset toward the use of data and technology. The transition to PBR, IFRS 17, the changes in US GAAP, etc. really forced companies to use data and technology more effectively, which has benefited both the client facing and back office sides of the business. For one thing, it's closing the gap between our pricing and valuation teams so that what we sell gets reflected much more quickly – if not directly in the financials at least in the disclosures.

Perhaps most importantly, companies have a clearer view today of how the business is performing and they can see the strategic value in this transparency. Once you start answering the initial questions about what's going to happen to an income statement then you can start digging into the harder business questions around growth and profitability.

Continued

Changing Actuarial Roles

Cont.

How are these changes affecting the actuarial profession?

Sean: For one thing, the actuarial profession – and the value of the actuarial skillset – has expanded beyond insurance companies. If you search the SOA directory, you'll see actuaries working at Google, at start-ups and Silicon Valley type enterprises. But I think if actuaries want to continue in leadership roles at insurance companies, getting a broader perspective of the business is what's most important.

Accounting is an area that actuaries often downplay. There's always been this informal rivalry between actuaries and accountants. But the most important technical skill I've had as an actuary is the ability to understand the financial statement. When I'm trying to understand how a certain detailed calculation works, I always default to the debits and credits on the financial statement. It helps me understand how the company makes money, the context of the number being calculated and where it's actually going to land on the financial statement.

As a chief actuary, what do you look for in establishing and maintaining an actuarial team?

Sean: The technical skills are essential, but these are pretty easy to assess. Really, the two biggest traits I look for are curiosity and a sense of ownership. The most successful actuaries want to understand why they're doing what they're doing and go a step beyond. Then, related to that is a sense of ownership – a sense that they own what they're working on, and if they're not making it better, they figure how to do so. That's what I try to get at when I talk to people.

I still do a decent amount of interviewing. I talk to all potential hires, even at the junior level. I'm not the one who grills them on their technical skills; I'm going to be more focused on the traits that can make a difference and grow with my team.

Do you have a favorite question that you ask?

Sean: Yes, I do! A very important skill is the ability to explain complicated things simply. This skill is still very important to me – being able to boil down actuarial subjects into terms that whoever I'm talking to can understand.

In my interviews I'll ask a candidate to pick a topic and explain it to me as if I've heard some of the terms, but I don't know anything about it. And the topic I allow depends on their level. If they're entry level with no actuarial experience, I'll ask them to pick any random topic. I just want to see if they can assess whether or not I'm understanding what they're saying and if they can adjust how they're explaining it to get me to a point of understanding. The more senior they get, the more I want the topic focused on an actual work problem. But I ask that question no matter what level a person is. And a lot of times their performance on that question alone tells me what I need to know and whether or not they're going to be a good fit for the team.

"Knowing what you want from a role and being prepared is essential to putting a good team together."

What are the biggest challenges in putting together an effective actuarial team?

Sean: Being open minded about what different people bring to the table. Especially as a younger manager, if I reflect back on my teams, they all had personalities similar to myself. I think there's a natural instinct to hire people who are similar to you, and that doesn't usually work in forming a good team.

Interviewing isn't easy. Everyone's busy, but if you don't take time to prepare, you're going to have a conversation about what you like to talk about. I've had debriefings after an interview where no one extracted anything from the candidate that could actually be applied to the job. Now I make sure we follow a template!

So knowing what you want from a role and being prepared is essential to putting a good team together. But again, I'd emphasize being open minded. As I've grown as a leader, I'm much more aware of looking for people that round out what both myself and the broader team needs. And that changes as the makeup and demands of the team change, so you need to stay connected enough to the team to know what they need.

What advice would you give a young actuary. Or, if you could go back and give your 21-year-old self any advice, what would you say?

Sean: I tell young actuaries to be flexible and open minded about where their career might take them. Not everyone is going to be comfortable bouncing from a variety of different roles, leaving the industry, working for vendors. It's knowing what works for you.

Now that I'm hiring managers who manage people, my advice is to know who you are, be yourself and lead your team the way you want to. That probably won't be the same way I manage a team and that's good. ■

APPLYING THE THEORETICAL

By **James Lynch**
Head of Americas Data Analytics
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> "Now, in order to stay technically relevant, you need to start picking up core programming languages or stay abreast of the new machine learning algorithms so that, at the very least, you have the vocabulary and can insert yourself when you need to."

Has your career followed the path you had in mind as an actuarial student?

James: Yes and no. You don't have clear expectations when you start out – I certainly didn't. I was just happy to get my first job and use the quantitative skill set that I had built in college in an applied environment. I didn't like applied math in college, but in the real world it's a lot of fun. You can use it to actually solve real world problems instead of doing proofs all day — which I thoroughly enjoyed but you can only do one thing if you stay in that world and that's more proofs! When I got my first job at Milliman after passing my first exam, I could not have imagined how perfect a fit actuarial science was with my personality.

I wouldn't have predicted my move into modeling, but that's the path that my career took. For me — and for a lot of actuaries — being at the intersection of predictive modeling and actuarial science is the most exciting place to be. I think the Society of Actuaries knows that. Today it's considered sort of a hybrid, non-traditional role for an actuary, but I don't think it will be for long. Predictive modeling and the data science skills that go with it are going to be a core part of what actuaries do. It already is in a lot of ways.

■ ■ ■ Continued

What's the appeal of life insurance to data scientists?

James: There's been a natural flow from Silicon Valley to the banking industry and, now, to insurance. Data Scientists have already revolutionized many ways of doing business in the financial arena, and life insurance is a fresh piece of that market to apply their skill set to solve business problems. There was initially a perception that the industry had a lot of low hanging fruit; that methods, skillsets, and data sources used were outdated. While that's true, progress has not been as fast as it could be because of the wave of outside industry experts attempting to reinvent the wheel. Ultimately actuaries need to remain the decision makers and continue to be held accountable for business outcomes.

How did you get started down this path?

James: In my earlier actuarial jobs, I tried to do as much programming as I could. It's important if you want to make that transition to start programming at work — just start solving real problems. The first thing I built that was used by someone other than myself was a fairly simple collection of Python scripts that grabbed data from all over the company and cleaned it up in a structured way for use by underwriters throughout the renewal process. There was nothing predictive about it, but it was widely used and very helpful. It allowed underwriters to immediately see the performance of their block all the way down to the case level, which helped inform decisions.

Once I started programming, I knew just as clearly as when I found actuarial science that this was what I wanted to do. So I needed to find a way to bring the two pieces together. And my timing has been really lucky because that's where a significant piece of the industry is headed.

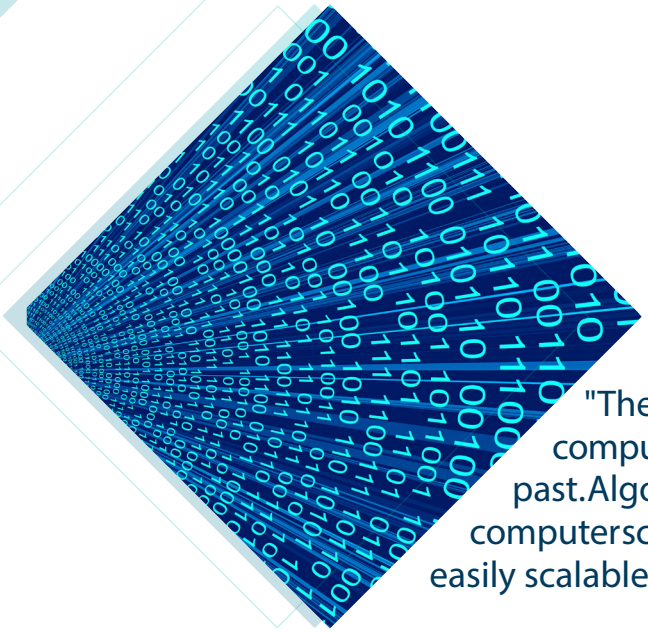
What's driving the increased role of predictive modeling within the actuarial profession?

James: Well, there's a need for it across the life insurance value chain. More and more data sources are available that require a totally different skill set to incorporate into what we do. The availability of affordable and scalable computing has eliminated barriers which existed in the past. Algorithms that used to be interesting on paper in a computer science research setting are now widely used and easily scalable.

With natural language processing we can extract meaning from text that already exists in our databases. At SCOR we have already shown this information to an important predictor for claims. With object character recognition (OCR) technologies we can begin incorporating the vast pool of handwritten and other sources of unstructured text into our models — think APS documents. Actuaries are well positioned to bring data science and predictive modelling into insurance — if we can keep up with these technologies.

Competitive pressure is another driver. There's an influx of core data scientists from outside the industry who have these skills — machine learning, AI, knowledge of software and programming, cloud compute infrastructure — and they've had successes. They've worked to streamline underwriting and claims processes and learned how to incorporate natural language processing into many different functional areas, for example.

Actuaries have the business knowledge, and the data scientists coming into our industry will absorb the business knowledge over time. They're not going to simply be given a problem or solution and just code it up. They very much want to think things through from the ground up. They will acquire the business knowledge, no doubt. What we need to do is learn how to work together and cross train each other's skill sets, because each group of professionals bring something to the table.



"The availability of affordable and scalable computing has eliminated barriers which existed in the past. Algorithms that used to be interesting on paper in a computer science research setting are now widely used and easily scalable."

Do you see any resistance among actuaries to data science and predictive modeling?

James: Most actuaries are very receptive. The most common reaction is "We already do that." And that's correct. I think the point is that other professions have different methods that are worth taking a look at. Data scientists bring a lot of outside skills, a fresh way of looking at things that can be a big value-add. But we can't ignore the years of research from the SOA, the years of actuarial wisdom, the underwriting wisdom. Time and time again there's the data scientist who comes in just to give you a result that is obvious to people who've been in the business. The key is to channel that fresh energy and those fresh eyes onto the right problems — and often an actuary is the best person to do that.

The attraction — or resistance — often depends on the individual. When I was taking exams, we heard a lot about predictive modelling, but it wasn't necessarily built into the curriculum. Today there is a predictive modeling exam that includes real programming and a certificate program for credentialed actuaries. Students are being taught open source languages like R during the credentialization process. In the near future, I believe the typical actuary will have the skill sets to drive these data science initiatives.

How difficult is it to go from a more traditional actuarial track to a predictive modeling/data science role?

James: If you're a pricing or valuation actuary now and you've been in your career for a while, you might be interested but you might not have opportunities at work to develop the necessary skills. Whereas previously you could further your education through the business side — for example, you could develop knowledge of regulations on the job. Now, in order to stay technically relevant, you need to start picking up core programming languages or stay abreast of the new machine learning algorithms so that, at the very least, you have the vocabulary and can insert yourself when you need to. And you do need to be inserted.

But in other ways it's easy because actuaries are self-teaching experts. We're the type who can study for an exam, and after 300 hours go by, you sit and hopefully you pass. That frame of mind, that skill is what's most transferrable, in my opinion. Because the data science world is less structured than the actuarial world, you've got to find your pathway yourself, so you need to be a bit more resilient. This is something we need to rectify — and the Society of Actuaries should play a role here.

Can a more traditional actuary play in areas of innovation and data science without developing strong computer science skills?

James: I believe so. A fairly senior level actuary may not take an entry level data science position, but you can ease your way into these emerging roles. One way is to be involved in leading projects where you provide the business insights. These are critical roles because you help structure the project so that the data science team is solving the right problem. Whether it involves underwriting, new distribution channels, claims triage or something else, I think actuaries are best positioned to lead data science initiatives, because they can think holistically about the insurance value chain and bring all the necessary functions together.

The data science space is ripe with opportunities for actuaries at any level to get involved. ■

■ ■ ■ Continued

HOLISTIC UNDERSTANDING OF RISK

Manisha Dias
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> There is a growing interplay of other disciplines within core actuarial functions (data science, AI, medical underwriting, technology, etc.). It will influence every part of the actuarial profession, even for those who stay within the traditional field.

What attracted you to the actuarial profession?

Manisha: Two main aspects: First, there are no pre-defined parameters/limitations to your role. If you randomly select 15 different actuaries, there is a strong probability that their roles are all markedly different. Whether you are more technically inclined or more strategic in thinking, there is a role, somewhere, to fulfill that.

And second, the credibility of the designation and technical foundation lends itself well to management and leadership opportunities; i.e., there are ample opportunities beyond "staying an actuary" that one can propel toward if interested.

Has your career followed the path you expected? How is it different/in line with what you expected?

Manisha: Yes and no. As a curious individual who likes to understand a bit of everything, I had planned to do a few stints across Life, P&C, Consulting and Regulation before deciding where to delve deeper. I ended up falling into the Life area first in an opportunity in Asia and quickly discovered the ample variability in actuarial roles that existed within the sector itself.

I decided to stay in Life and ended up working across significantly different functions in highly interdisciplinary roles. All this to say that it fulfilled my original intent of doing and understanding 'a bit of everything.' That path continues now but has evolved into deepening my understanding of non-actuarial functions (medical, underwriting, R&D, etc.) and how it intersects within the business.

How would you describe your role today?

Manisha: In a nutshell — it's like being on a catwalk wearing several different hats. Due to the nature of the role (which includes orchestrating and managing all facets of a new solution), there is a strong need to understand enough about all major areas. Internally, the hats can span from business, pricing, underwriting, finance, marketing, operations and legal. Externally, it ranges from technological understanding all the way to biomedical applications. It is complex, fulfilling, and never has a dull moment.

We think of actuarial work as intensely technical. Did your actuarial education prepare you for what you do today?

Manisha: While not every actuarial exam will get to be applied in practice (different sectors/roles) or are more relevant in more junior roles, they were all useful in teaching technical, analytical and critical thinking skills. To me, these are the true fruit of the education as they are transferrable to future roles and ultimately make it faster to synthesize technical information needed to make a decision.

Out of coincidence, my advanced exams have had some direct application to my current role. I pursued the ERM/CFE track, which is a non-sector specific track covering a broad array of topics (from Monte Carlo simulation to strategic decision making). It ultimately prepares an individual to develop a holistic understanding of risks, so that whether in a manufacturing plant or a pension firm, risk evaluation can be done. Having that kind of understanding has been very beneficial in my role, where I deal with different companies, sectors, functions and risks regularly.

"Another challenge is to be able to look at a startup (who often has a solution notrelatedtoinsurance)and see if there is an insurance application – oftentimes there is. "

What do the changes taking place in the industry today mean for actuaries in the future?

Manisha: Automation is taking over more and more functions throughout the life insurance industry. The actuarial function is no exception. Actuaries need to continue to step up their interpersonal skills and think about how they can translate technical insights into business decisions. Many employers cite that they have very intelligent actuaries, but that they're unable to convey actuarial concepts to non-actuarial audiences. Training around business communication and interdisciplinary skills will be increasingly important as organizations move toward working more centrally (vs. by department).

Do you interact with new InsurTech players from outside the industry? What's this experience like?

Manisha: Yes, interacting with InsurTech players is a key part of my current role. Their organizational structure and culture are very interesting. The management teams often come from varied backgrounds (medical, tech, etc.) and their office environment is generally a co-working area or unique space. Culturally, they are encouraged to test, learn, and fail quickly as they develop their minimum viable products. One of the challenges insurers/reinsurers face in partnering with these startups is the speed at which they work. SCOR setup a new team – Strategic Partnerships – in order to be able to work at the pace the InsurTech partners need.

What are the biggest challenges in working on innovation-driven solutions in the life insurance industry?

Manisha: Keeping up with all the new solutions and players that are constantly coming to the field. Staying connected with InsurTech accelerators and incubators helps in alleviating some of these pain points. Another challenge is to be able to look at a startup (who often has a solution not related to insurance) and see if there is an insurance application — oftentimes there is. We encounter so many companies who didn't realize the potential for their solution to be plugged into the life insurance space in some capacity. Wearing different hats definitely helps discover hidden potential for these firms.

What skills, qualifications are needed to fully grasp the opportunities of this new professional landscapes for actuaries?

Manisha: For those aspiring toward management — the ability to look at details analytically while simultaneously looking strategically at a 30,000 ft. view will be very important. Curiosity is another key trait. Interacting with non-actuarial people from different functional areas will help tremendously in understanding the overall business.

Continued

Do you think the new mission/vision of life insurers – helping customers live longer, healthier lives – will take hold or is this a passing trend?

Manisha: I think it will take hold because it touches on something that all consumers have a self-interest in — themselves and their health. Not everyone sees the need for life insurance, but there isn't a person out there who wishes to be less healthy than what they already are. Insurers are starting to drive toward what really drives an individual, and so the business focus is moving from protection toward prevention. This is a fundamental paradigm shift that is transforming our industry.

Who was a big influence on your professional career?

Manisha: I had — and still have — mentors who have made a big impact on my career. I started seeking them out while in high school and continued to do so throughout university. They are all accomplished professionals who work in a multitude of fields (not just actuarial) and have been instrumental in giving guidance on paths to take and opportunities to consider.

My parents have been the largest influence — introducing me at a very young age to meditation and ultimately a holistic approach to health and wellness. This led me on a path to becoming a yoga instructor and helping teach others how to work toward inner peace. This side of personal development was key to the clarity and calm through all my actuarial exams and stressful work situations.

What new trends do you expect to emerge in the actuarial profession in 5-10 years?

Manisha: Actuaries will be expected to understand a lot more than just actuarial science in order to meaningfully contribute to the business. There is a growing interplay of other disciplines within core actuarial functions (data science, AI, medical underwriting, technology, etc.). It will influence every part of the actuarial profession in some way, even for those who stay within the traditional field.

What advice would you give an actuarial student or an actuary just entering the profession?

Manisha: Seek mentors. Meet as many and diverse people as possible. Get involved early in industry organizations and find opportunities for public speaking and volunteering. Be open-minded and avoid falling into a fixed view of what an actuary should be. People are defined by the parameters they place on themselves, and there is no one-size-fits-all box in this profession ■

THOUGHT LEADERSHIP

SCOR Participation in SOA

SCOR is pleased to participate in the Annual Meeting of the Society of Actuaries in Toronto on October 27-30.

Mary Beth Ramsay
Women's Leadership Forum

Rick Pretty
Why Health & Wellness Initiatives Matter for Actuaries

Manisha Dias
The Rise of the Exponential Actuary (Part 2)

Justin Lengemann
PBR Implementation: Lessons Learned

Michelle Young
Achieving Your Professional Goals

Can We Just Talk? The Art of Feedback

Katherine Warner
Aisling Bradfield
Post Level Term: Lapse and Mortality Risk Considerations

Richard de Sousa
Manisha Dias
How Consumers are Driving Change

Aisling Bradfield
What Industry Data Tell Us About Policyholder Behavior

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