SCORviews

SUMMER 2019

MESSAGE FROM THE SCOR GLOBAL LIFE AMERICAS CEO

Flexing to Stay Relevant

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Life insurance is a complex business. It's always interesting to see experts from adjacent fields enter our industry expecting to quickly grasp the ways of life insurance only to discover the layers and layers of technical complexity that lie beneath the surface.

I hold the highest regard for the technical specialists in our industry who enable the rest of us to do our job – the product and valuation actuary, the finance whiz, the underwriter, medical director and IT developer. More recently this VIP list has grown to include statisticians, data scientists and machine learning engineers. We depend on this cast of highly specialized experts, each of whom plays an indispensable role.

But in an evolving landscape, it's not enough to have a single skill no matter how valuable or fined tuned. Cross functional knowledge is a necessity. Agility is the order of the day. Underwriters must understand risk pricing and experience analysis. Actuaries need knowledge in statistics, data mining, predictive analytics & computer science. And so on…

Most importantly, each of us – specialists and generalists alike – needs to develop a deeper understanding of our end customers: what they need, what they value, what motivates them, what they expect, who they trust, who they will buy from, etc. And the truth is, we have a long way to go when it comes to knowing our customers and consistently meeting their needs.

This issue of *SCORviews* touches on both of these themes.

- Peter Komsthoeft writes about the adjustments that underwriters need to make given their role in devising new selection protocols. It is vital, he says, that underwriters understand how mortality is measured, predicted and influenced. Margins between success and failure are small and what may seem to be trivial differences to the uninformed may be vital components to a new selection process.
- In his article on innovation, Joe Sharp refers to a recent Wharton University study comparing fintech in China and the West. Firms in China prefer a broad, horizontal play with a wide range of product offerings. Chinese players, the study says, work towards developing a deep understanding of their consumers and leverage that to build products and services that encompass their entire digital journey.

Our industry is on the cusp of profound and irreversible change. Companies with creative, agile and collaborative professionals, the right partnerships and an unyielding commitment to knowing and serving their customers will have a big advantage in adjusting to an evolving life insurance landscape. ■

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SCOR
The Art & Science of Risk

HEALTH & WELLNESS

A Path to an Ecosystem Strategy?

Insurtech innovation is disrupting the life insurance industry, and observers agree that we are still in the early stages of transformational change. Driven by the tremendous growth of electronic data, analytics, medical science and mobile interfaces, life insurers are beginning to rethink their traditional roles and business models. They are exploring new ideas and formulating new strategies for future growth.

SCOR is engaged in multiple efforts to support clients as they adapt to the evolving landscape. In addition to our continuing commitment to underwriting R&D and risk analytics, SCOR is investing in Insurtech and partnering with companies in the health and wellness arena. This gives us the insight needed to evaluate and share with clients our perspective on new players and capabilities available to them. It also lets us work in collaboration with clients and outside partners to build and pilot new customer propositions.

By **Joe Sharp**
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Building partnerships for future financial success

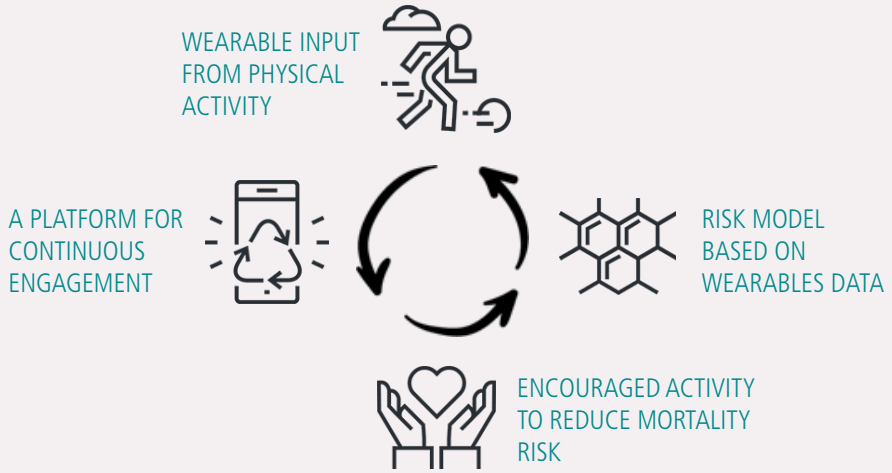
Partnerships – both inside and outside the industry – are a critical element of new business models taking shape across the industry. Life insurers at the frontier are joining forces with other companies to share data, technology, analytics, and customers and to expand their offering beyond traditional risk protection. Alliances are being formed to modernize the entire value chain from product development and marketing to customer service and claims adjudication.

And there is no shortage of parties that want to team up with life insurers. Start-ups and established entities see growth opportunities in a large market that for a variety of reasons has been slow to change.

For example, Plug and Play, the global technology accelerator and venture fund, introduced an insurance innovation platform three years ago to bring together complementary partners. Start-ups targeting this space gain guidance and insights from experienced industry players, while established insurers get access to innovative technology solutions. That Plug and Play Insurance quickly became one of their best-attended programs reflects the need for innovation in the insurance space.

FITNESS & NUTRITION

Biological Age Model (BAM) is an innovative solution that measures mortality and morbidity risks, enabling ongoing health management and risk reduction, transforming the insurer-customer relationship.



Customers today are more digitally-enabled, more health conscious and more demanding of customized products and services that offer greater freedom and flexibility. BAM is one example of the global movement in health and wellness. Though it is not currently available in the United States, BAM is in use in Asia and is being introduced in Europe. Learn more on SCOR.com.

The recent Expo held in San Diego featured entrepreneurs with solutions for automated underwriting, digital platforms for millennials, customer/user experience, etc. The desire among life insurers to become digital organizations offering new and innovative products is the driving force behind Plug and Play Insurtech.

SCOR became an anchor partner of Plug and Play in 2017. We have engaged with start-ups all along the customer journey, from the frontend with new disrupting distributors of life insurance to the backend with health and wellness platform providers, and many in between.

A health & well-being movement

One of the most promising developments in innovation involves coupling life insurance with health and wellbeing programs. We are in the very early stages of life insurers forming partnerships and executing pilots to offer new and existing customers programs for fitness and nutrition, health assessment, disease management and life-saving services that, for example, can detect cardiac arrest. The level of support ranges from connected health and fitness apps and on-line coaches to DNA sequencing and oncology care plans.

This movement will create a new vision for life insurance – one that encourages people to adopt a healthier lifestyle, that reduces or postpones the onset of certain conditions and, ultimately, that may result in longer lives for their customers.

Many of these offerings include wearables and other sensor-based technology. In exchange for rewards (gift cards, gym discounts, premium discounts), insurers gain access to relevant, measurable data that can be used to better price and underwrite mortality risk. This can potentially shift the underwriting paradigm toward a continuous underwriting model where policyholders can benefit from their own improved health with lower premiums. Wearable devices also offer a way for insurers to stay connected with policyholders, creating opportunities for engagement that can improve customer loyalty. Some early movers have already seen a positive impact on public perception of their company.

INNOVATION SCORES

The importance of innovation to the long-term financial success of an insurance company was amplified earlier this year when the rating agency AM Best announced that it is drafting a new criteria procedure, "Scoring and Assessing Innovation" The criterial will be based on two elements:

- Innovation inputs – the components of a company's innovation process, and
- Innovation outputs – the impact of the company's innovation efforts.

According to AM Best, "The resulting innovation score is the sum of these two evaluations. Within its business profile building block, AM Best explicitly will consider whether a company's innovation efforts, or lack thereof, have had a demonstrable positive or negative impact on its long-term financial strength. AM Best expects that all rated companies eventually will be scored and assigned a published innovation assessment."

Continued

A Path to an Ecosystem Strategy?

Cont.

Alignment of incentives

Some insurers are exploring partnerships to help policyholders manage critical medical conditions like cancer and heart-related illness. A recent Wall Street Journal article pointed out the alignment of incentives in such programs.

- "Consider an industry that excels in long-term planning and has a strong incentive to keep clients alive: life insurance.
- "Let's say our 57-year-old has a $250,000 life-insurance policy. At the time of diagnosis, the incentives of the patient and those of his life insurer align more strongly [than those of his health insurer]. Both want him to live as long as possible. Every month of added life is a bonus for the insurer, both in postponing benefits and in collecting additional premiums.

SAVING LIVES

100Plus' mission-driven team of several high-tech industry veterans is dedicated to building technology to save lives. In addition to architecting the largest privatized safety network in the US, their breakthrough iBeat heart monitoring smartwatch features

- Continuous heart and oxygen monitoring
- Emergency help button
- Built-in GPS
- Alarm, timer and stopwatch

When a cardiac event is detected, the 100Plus team coordinates response with emergency contacts, paramedics and iBeat's Heart Hero Network – a community of over one million CPR-trained Good Samaritans – to ensure immediate care, potentially saving lives.

Cardiac arrest is the single largest killer in the world. For every minute that passes without intervention, a cardiac arrest victim's survival chance drops by 10%. The iBeat heart watch is one example of life insurers and reinsurers partnering with health and wellness innovators like 100Plus to offer policyholder benefits that promote healthy lifestyle choices and help manage medical conditions.

- "Studies are beginning to show that life insurers could save lives and help their bottom lines by purchasing cancer treatment for their clients."

Genetic testing

Health assessment and disease detection - Genetic testing is another area where life insurers and outside partners are forming alliances with the goal of helping people live longer.

For several decades, genetic testing and life insurance have been at odds. Life insurers worry about adverse selection and consumers worry about discrimination.

While hurdles remain, life insurers are beginning to see benefits. They are exploring the use of genetic testing products and services to help manage the health of older customers with high face amount policies. For example, (re)insurers are partnering and/or investing in genetic testing services to help policyholders catch and treat cancers, cardiovascular conditions, diabetes, etc. Health assessment companies like Human Longevity are keen to team up with life insurers as a way to access target markets for their genomic-based programs and services.

Managing in force business

These programs may bring a new dimension to in force management strategies, which typically revolve around financial levers. Approaches such as retention management (e.g., Post Level Term strategies), in force block transfers, capital optimization, expense control and asset/liability strategies do not consider the lives behind the policies. Health and wellness programs, on the other hand, place customers at the strategic center.

Even though incentives are well aligned, the industry as a whole will need to make a shift to overcome a propensity to focus on technical aspects of the policy rather than actual customer needs. In addition, the existing industry structure presents additional hurdles; the regulatory environment, data security/privacy, legacy system challenges and reliable customer contact information are a few obvious barriers.

EXTENDING LIFESPANS

Human Longevity, Inc. offers life insurers a new way to engage with inforce policyholders, helping them to improve their health and potentially live longer. HLI performs health assessments based on a data driven health intelligence tools including full body MRI and DNA sequencing to assess actual risk. HLI further provides a health plan to prevent, reduce or postpone the onset of certain conditions.

HUMAN LONGEVITY, INC.

Ecosystems

Historically, life insurers have limited their products and services to risk coverages. Customer relationships have been passive with little or no interaction between policy issue and claims adjudication. Many industry experts no longer see this as a viable business model for the future. For one thing, it leaves little room to reinvent the business if market forces threaten established ways of doing business.

Life insurers are taking a hard look at their traditional roles. Some are purposefully forming strategic partnerships while a few pioneers are laying groundwork for a comprehensive, digitally driven "ecosystem" play.

The ecosystem concept, premised on a robust network of symbiotic partnerships and alliances, would position life insurers to expand into adjacent markets with hybrid solutions. Present endeavours focus on distribution partners, data providers and health-related services, but longer term, an ecosystem strategy would allow insurers to serve as a marketplace for a range of consumer products and services.

The best example of an ecosystem play comes from China: Ping An. Through a single customer portal, this giant insurer has expanded its offerings to include healthcare consultations, auto sales, real estate listings and banking services.

A recent article on the Wharton University website compares the Chinese approach to consumer markets to the Western approach. Two notable takeaways:

- "...while Western companies tend to focus on a single market... Chinese firms prefer a broad, horizontal play."
- "...the main lessons the West can learn from the Chinese is in building integrated solutions and ecosystems that can get embedded into the lives of their consumers rather than focusing on only one particular product or service in isolation."

No one expects such disruptive innovation to take place overnight, but the reality of today's changing landscape demands that the insurance industry close the innovation gap. The health and wellness movement is one way life insurers are doing that.

Reinsurers as innovation brokers

Life insurers will need multiple partners and collaborators to initiate a roadmap and execute new strategies to remain relevant with the buying public. Reinsurers can be a valuable resource. Although risk management is a mainstay, top tier life reinsurers are taking on new roles as they invest in innovation and serve as advisors and intermediaries between clients and outside companies.

For SCOR, it's imperative to be at the forefront of this movement, helping leverage the benefits of innovation and make its value available to direct writing companies. ■

EXPANDING RISK KNOWLEDGE

What Drives Our Business?

Reinsurance supports Life insurance growth by helping direct writers evaluate and take on myriad risks. As the industry transitions to new business models, reinsurers are increasingly involved in exploring and assessing new technologies, data sources and partnerships with distributors and vendors outside the Life industry.

By **Mary Beth Ramsay**
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SCOR routinely reviews what drives our business in order to better understand how the market and client needs may be changing.

Regulatory needs

Analysis of new business pricing opportunities during the past 18 months (January 2018 through June 2019) reveals regulatory changes were cited in 40% of the Requests for Proposal. Principles-based reserving (PBR) and 2017 CSO were the primary regulatory drivers, although tax reform and revised capital adequacy requirements were also mentioned.

Financial reinsurance

The next largest category was financial reinsurance. One-quarter of our deals during the past 18 months were related to surplus or capital relief, block acquisitions, retention reduction, or contingent financing.

Product updates

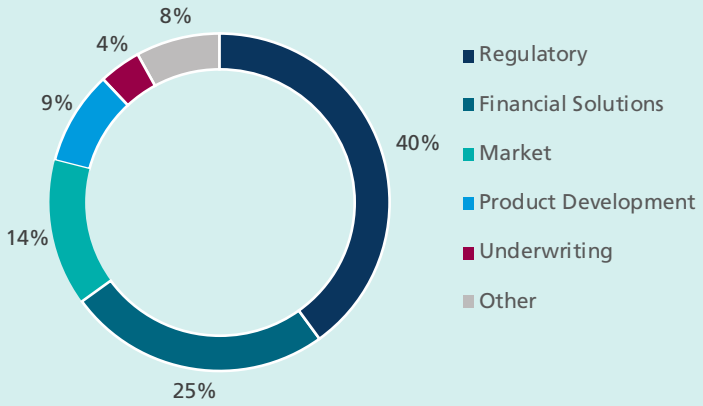
Product updates to refresh prices, increase sales in certain cells of business, expand market share or enter new markets, represented as Market in the chart in Figure 1, accounted for 14% of the total quote requests.

Product development

Product development drove approximately 9% of new business opportunities between January 2018 through June 2019 at SCOR Global Life in North America. Quotes for these products included pricing for decreasing term, return of premium term, direct-to-consumer term, indexed universal life, secondary guarantee universal life, as well as various riders.

TOP FIVE BUSINESS DRIVERS

Analyzing requests for pricing at SCOR Global Life in North America between January 1, 2018 and June 30, 2019 revealed regulatory compliance was by far the largest business driver due to principles-based reserving (PBR), 2017 CSO, tax reform and revised capital adequacy requirements.



Underwriting-related

Perhaps most surprising in this research is the discovery that only 4% of pricing requests were related to changes in underwriting. Given the number of client discussions we have had and the numerous industry presentations and conferences focusing on modernization of the underwriting process, we were anticipating a larger share of new business to be driven by movement to accelerated or automated underwriting platforms.

Reinsurers are frequently consulted to evaluate and share in risks related to underwriting rules, age limits or face amounts, but we are more frequently also helping clients evaluate new underwriting platforms, methodologies and data sources.

Other

The final 8% of our new business opportunities during the past 18 months are categorized as Other, which includes reinsurance pool restructures, merger and acquisition activities and reinsurer rate actions.

In addition to its traditional risk management role, SCOR has made significant investment in research and development to understand how changes in traditional underwriting impact mortality. We invite you to contact your Account Representative or me if your company is interested in learning more. ■

MORTALITY STUDIES

A Critical Tool in the Underwriter's Toolbox

The US life insurance industry has entered a period of profound and irreversible change. Driven by market needs for speed of issue and ease of process at attractive price levels, supported by new data sources and predictive modeling analysis, all insurance professions find they must adjust. But maybe none more so than the underwriters, now tasked with devising selection protocols that satisfy all the needs, accomplish all the goals and convince all the stakeholders.

By **Peter Komsthoeft, CLU**
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Achieving mortality outcomes commensurate with assumptions remains as critical as it was before and a basic understanding of how mortality is measured, predicted and influenced always was a desirable skill.

Now, however, it is vital, no longer a 'nice to have' addition. All too often, in the past, underwriters have been able to defer to their actuarial colleagues when discussing the details of mortality studies. I suggest those times have come and gone.

The good news, on the other hand, is that there is no reason why underwriters cannot add that tool to their toolbox. The basic concepts involve simple probability and basic algebra. While more sophisticated knowledge may be required to compile and conduct a mortality study, interpreting and using its results is possible with much less preparation.

Understanding actual/expected experience

The space of this article is not sufficient to explain the exact how-to process but finding a contact in one's actuarial department may be an excellent start. I myself have been fortunate over the course of my career that innumerable colleagues took their time to explain their work to me, and I am very grateful to all of them. In many instances that personal teaching is far better than learning from books.

Instead let me lay out in more detail the 'why' it is time that most underwriters brush up their knowledge regarding mortality studies. When I use the term mortality studies, I usually refer to traditional life insurance tabular based actual/expected approaches, but certainly not exclusively. Mortality can be measured many different ways, and understanding one approach makes the path to another system much easier.

Here are some reasons why:

- Underwriters routinely communicate class and rating decisions upstream and downstream. Understanding the underpinnings of those decisions makes for much better communication.
- Absent credible historical experience we often must resort to external studies and proxy data to design selection approaches. This is quite impossible unless one knows how to pick appropriate studies and data for any given task.
- Evidence-based predictive models routinely outperform subject matter expert (SME) rule-based systems (of the past). Understanding why that is so and being able to explain it to others is critical to support the change processes.
- Margins between success and failure are small. That part has not changed, but the inputs have changed. What may seem to be trivial differences to the uninformed may be vital components to a new selection process.
- Interaction – the fact that most factors used to categorize and predict mortality outcomes overlap. This is nearly impossible to assess without good data and even more impossible to explain without a solid understanding of the dynamics.
- Different predictive models don't agree when applied on the applicant level. How to decide which of them are 'right' or appropriate requires detailed understanding of how mortality is predicted by such models.

Of all the possible sources of confusion, the last two – interaction and lack of agreement between scores – are maybe the biggest current stumbling block, and only a more detailed understanding of the drivers and dynamics of mortality measurement (and prediction) can help to explain. So, let's dive a little deeper.

Continued

A Critical Tool in the Underwriter's Toolbox

Cont.

The challenge of too few deaths

Mortality is a rare event – for any given year that a policy is in force, the probability of survival is hundreds to thousands of times more likely than death. However, mathematical credibility of mortality measurements is directly related to the number of (countable) deaths. A good rule of thumb is that in order to draw any significant conclusions about mortality patterns, every class that is examined should have at least 50 documented deaths in it.

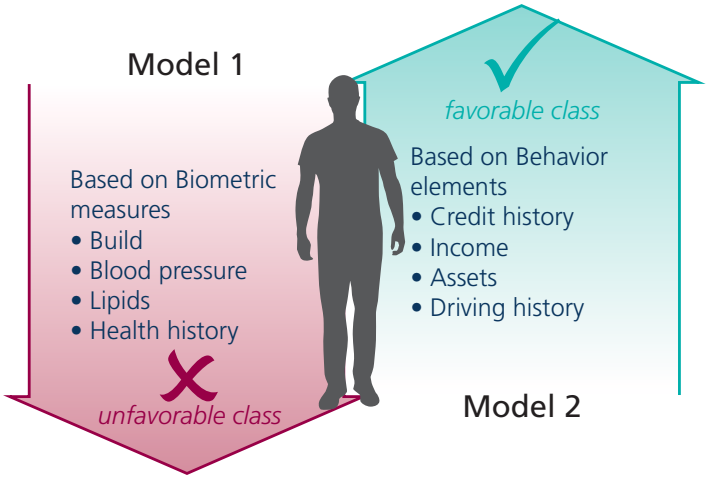
Those two conditions, rare event and minimum number of deaths, require that we aggregate many applicants/policyholders into a cohort to be studied. We would like for those applicants to be 'alike' on as many parameters as possible, e.g., within a certain age range, all male or all female, all within the same tobacco class and so on. Once we add to those conditions more biometric measures (build, blood pressure, lipid levels, etc.), it becomes quickly clear that the task of creating large enough groups to be credible but still be 'alike' is getting harder and harder. Additionally, considering non-biometric factors all but makes it impossible to create groups that truly are 'alike' in all aspects.

Different ways to predict mortality

Now take the common scenario of having two mortality prediction scores that are built using very different inputs. One uses more traditional biometric measures, while the other one uses credit style and behavior elements. Both are well built and credible in their own right, but both aggregate completely different applicants they consider 'alike'. One aggregates applicants of favorable build, blood pressure, lipids, health history into the best class, while the other aggregates applicants with favorable incomes, assets, payment records and driving history.

It is not only possible but likely that any number of applicants will receive an 'excellent' score from one model and a 'reject' from the other.

These predictions only achieve credibility once they get rolled up into larger groups and without significant additional work. The models are not designed to be casually mixed and deployed, irrespective of their credibility. The owners and creators of the various prediction approaches will tend to emphasize the features of their model without talking too much about the possible shortcomings. It is frequently the underwriting department that is asked to decide about deploying one or the other or both approaches and in what combinations.



Mortality prediction scores built with different inputs will aggregate applicants differently. Understanding how the models are designed is key to designing effective risk selection approaches.

Without understanding many of the features of mortality measurement, it may be impossible to design effective selection approaches incorporating many of the tools that are made available each day.

While the task may not fall exclusively on the underwriter's shoulders, he/she certainly needs to be at the table and be able to participate fully in the decision-making process. Without the necessary background knowledge that may be much more difficult.

With every period of change comes challenges, but always also great opportunity. My advice to all underwriters is that a small investment in updating some fairly basic knowledge can pay significant dividends. And who knows – you may make some friends amongst your actuarial colleagues in the process. ■

THOUGHT LEADERSHIP

Industry Activities

Our employees will be sharing their expertise in a number of industry presentations during the next few months.

Texas HOUA – September 5
Terry Feeney
Traumatic Brain Injuries

Midwestern Underwriting Conference – September 12
Kimberly Cox-Fisher
Reinsurance View of Accelerated Underwriiting

New England HOUA – October 11
Laurie Kaiser
Pediatric Autoimmune Neuropsychiatric Disorder

SCORCAST Webinar Series

Our most recent webinars are listed below. You will find links to the webinar recordings on the home page of our website: www.scorgloballifeamericas.com

Dr. Regina Rosace
Long Term Risks of Pregnancy Complications

Tim Jones
Financial Underwriting

SOA Annual Meeting – October 27-30

Mary Beth Ramsay
Women's Leadership Forum

Rick Pretty
Why Health & Wellness Initiatives Matter for Actuaries

Michelle Young
Achieving Your Professional Goals

Can We Just Talk? The Art of Feedback


Mary Beth Ramsay
Aisling Bradfield
Modeling & Regulatory Concerns of Post Level Term Assumption Setting


Richard de Sousa
Manisha Dias
How Consumers are Driving Change

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SCOR Global Life
Americas Reinsurance Company,
a division of SCOR.

Printed in USA © 2019

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