SOCIETY OF ACTUARIES

Product Development Section

Product Matters!

ISSUE 91 | FEBRUARY 2015

Life Teaches Product Development Lesson

By Donna Megregian

Life is just a series of experiences, and luckily we can continue to learn outside of a classroom through daily occurrences. I've spent a number of years going through the product development process with various companies and clients, but sometimes a more personal experience can teach you more. I learned a pretty amazing lesson from my daughter about product development.

As many parents do, I want my children to try a number of things to gain experience. A certain amount of resistance is to be expected, but I didn't expect that getting them to eat would be much of a fight. I wanted to push beyond some kids' understanding of the four basic food groups: chicken nuggets, macaroni & cheese, pizza, and apple juice.

I was very aware that my daughter was adamantly against anything resembling or containing Mexican food. Being something that my husband enjoys (and me on occasion), I went on a quest to get my daughter to try and hopefully like Mexican food. Particularly, I was trying to make Mexican lasagna.

What I thought might help was to include her in the preparation, so I engaged her in the process. I asked her to help me cook and assemble the lasagna. Each step along the way, I assured her that the ingredients in her lasagna were not like her father's, because he liked spicy things and she didn't. We put in some ingredients that I knew she would like—cheese, plain ground beef. Now, there were certain things that I knew she didn't like (or said she didn't without trying it—just seemed fundamentally afraid of it), but I assured her that it was necessary, it was good to try new things, it would taste good and she'd like it, especially since she helped make it.

CONTINUED ON PAGE 4

Product Matters!

ISSUE 91 | FEBRUARY 2015

Published by the Product Development Section Council of the Society of Actuaries

This newsletter is free to section members. Current issues are available on the SOA website (www.soa.org).

To join the section, SOA members and non-members can locate a membership form on the Product Development Section Web page at www.soa.org/product-development.

2015 SECTION LEADERSHIP

Officers
Jim Filmore, Chairperson
Jeremy Bill, Vice Chairperson
Kelly Rabin, Secretary/Treasurer

Council Members
Simpa Baiye
Paul Fedchak
Joseph Kordovi
Vera Ljucovic
Kendrick Lombardo
Donna Megregian

Board Partner
Ronnie Klein

Other Representatives
Jeremy Bill, 2015 Life & Annuity Symposium
James Filmore, 2015 Life & Annuity Symposium
Kurt Guske, 2015 Life & Annuity Symposium
Joseph Kordovi, 2015 Life & Annuity Symposium
Ken Lombardo, 2015 Life & Annuity Symposium

Newsletter Editors
Simpa Baiye, Co-Editor
e: SBaiye@SunAmerica.com

Kurt Guske, Co-Editor
e: Kurt.Guske@AIG.com

Vera Ljucovic, Co-Editor
e: Vljucovic@scor.com

SOA Staff
Kathryn Baker, Staff Editor
e: kbaker@soa.org

Jim Miles, Staff Partner
e: jmiles@soa.org

Ronora Stryker, Staff Research Actuary
e: rstryker@soa.org

Articles Needed for the Next Issue of *Product Matters!*

While all articles are welcome, we would especially like to receive articles on topics that would be of interest to Product Development Section members based outside of the United States.

Deadline for article submission for next edition of newsletter: Please email your articles to Simpa Baiye, Kurt Guske, or Vera Ljucovic by **April 2, 2015**.

Chairperson's Corner

Product Development Global Perspectives

By Jim Filmore

John Ruskin is an English author, poet, and artist who lived from 1819 to 1900. While everyone may not recognize the name, he penned the phrase that is currently the motto of the Society of Actuaries (SOA). That motto is "The work of science is to substitute facts for appearances and demonstrations for impressions."

The majority (if not all) of the work conducted by our Product Development Section helps actuaries to live our motto. Our section is extremely active with respect to delivering relevant content through various mediums. Those mediums include research projects, webcasts, developing sessions for industry meetings, and articles in the *Product Matters!* newsletter.

Our SOA section is one of the largest, with approximately 3,100 members. Thank you to all of those who have made a contribution in the past through our various mediums. I encourage everyone to consider how they can contribute to our section to make it even better. In particular, the content contributed by our section members tends to focus on the U.S. life insurance market as that is the greatest concentration of our member base. However, members of our section currently live and work in 43 different countries around the world. Thus, it would be fantastic to hear some of those global perspectives. Actuaries in one country often develop a product or product feature and—in the process—learn lessons that can be applied in other countries. It would be great if those perspectives were shared so that actuaries in other markets don't need to learn those same lessons the hard way.

Thanks and I look forward to another productive year for the Product Development Section! ◻

Jim Filmore, FSA, MAAA, is a vice president and actuary responsible for Munich Re's U.S. individual life pricing teams. He can be reached at JFilmore@MunichRe.com.

She enjoyed helping, told me how much of certain things to put in, and assured me she would try it. We then joyfully put it into the oven and set the timer.

When it came out and was put onto her plate, she immediately asked for more cheese, which I thought was a good sign. After a few minutes of moving it around on her plate and one small bite, she proceeded to pick at the cheese then cried about having tasted it and not liking it. She wouldn't budge on trying any more of it and settled for some yogurt.

Real Life Product Development

So what went wrong? I tried to inform her, engage her, assure her, tell her how this will be good for her, but it didn't work … at all. Sound familiar?

Daughter's Process	Insurance Process
Fundamental: Need to try new things	Fundamental: Need for life insurance
I engaged her in the process	Customer research
She helped me assemble the product	Focus group
Created the product she helped design	Product development
I encouraged her all along the way	Agent interaction
Present the food	Launch product
Settle for yogurt	No sale; bought new cell phone

Some say knowledge is power but just because you know something doesn't mean you will take action because of it. Telling my daughter why she would like it didn't give her the motivation to actually buy into eating this product. We face this issue with life insurance. Fundamentally, we have a product we cannot change. We can only deliver it in different ways—lasagna, seafood, and broccoli become term, universal life, and whole life. Deep down, we know it's important to try new things (protect our family), but somehow, we haven't been convinced this item in front of us is what we want, even if we are engaged in the process.

So Now What?

I believe asking my daughter how she wanted to prepare her Mexican lasagna started her on the wrong foot, just like asking people what they want from their life insurance. As soon as you mention the word, there is a preconception, a fundamental dislike for what you are going to offer them. It doesn't matter if it is good for them, it tastes yucky.

Given that, should we stop trying to get insurance products to the uninsured and underinsured? Of course not, because we know there is a fundamental need out there. It makes me think that we are facing as much of an uphill battle as many parents face in getting their kids to eat their veggies when there is cake with frosting sitting on the table. How do you compete with that?

I often feel that I can be convinced with enough knowledge, but I now realize there are people (not just kids) that need more than that to incent them to give up something that can provide immediate satisfaction for something more general and less immediately tangible. We need to be diligent in delivery, but maybe we need to get away from the idea of selling life insurance because it's good for your family and throwing statistics at them (this coming from an actuary). I think people know that. But, could we ask them "Would you be willing to give up one Starbucks trip a week to provide some comfort to your family?" Can you give up your land line (since everyone has a cell phone anyway and you don't want telemarketers calling) and provide some education for your child?" Could we appear less invasive on daily life to get people the veggies, I mean, coverage we know they need?

Sneaky Chef

When all else fails, we may need to rethink how the product is delivered. I am a fan of the Sneaky Chef who hides healthy ingredients in foods kids like. The hard part is finding a food they like and a way to sneak the healthy stuff into it. What do people buy and how can we attach life insurance to it? If you can sneak cauliflower and zucchini into macaroni and cheese, why not sneak life insurance into the cell phone packages that people buy? Then at least they might not lapse until year two with the two year service agreement. How about locking in that cable rate for five years (five-year term)? Maybe with the marriage license, an additional fee can be charged to buy some coverage. Life events are key triggers for insurance needs, right? If I buy a TV and they ask for maintenance coverage, why not include life insurance in that? This all sounds simplistic and maybe a bit ridiculous, but I'm working on concept here. I think companies are going to need to partner with other organizations to reach people and get them over the hump to buy some insurance.

Conclusion

What my daughter taught me was sometimes consumers will only tell you how they intend to act provided the offer sounds good. In the end, when the decision needs to be made, they may not act like they promised or believed they would. But as I parent, I need to keep offering the product, but maybe put it into different forms. I may need to break it up—four ingredients in lasagna appear to be too much at once. Maybe chips and salsa. Maybe tortillas with melted cheese dip. Maybe term insurance with cell phone or cable. Maybe accidental death with an ability to convert to term insurance. One piece at a time, in different forms. Hopefully, diligence will pay off. ◻

Donna Megregian, FSA, MAAA, is VP and actuary, in charge of actuarial services for RGA. She can be reached at dmegregian@rgare.com.

RA, RA, RARORAC!

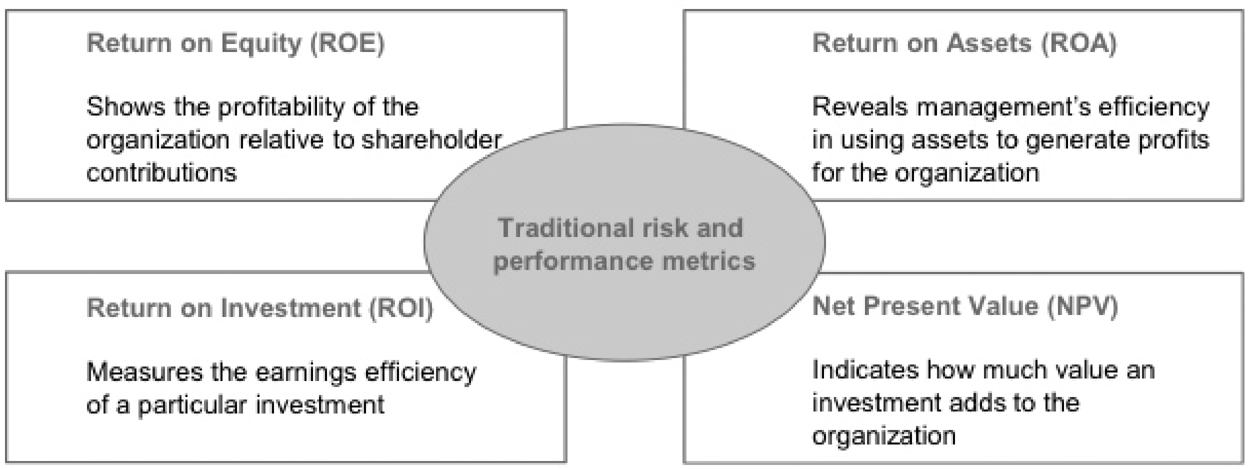
By Dean Kerr, Tom Mao and Helen Duzhou

Introduction

Performance metrics are widely used by companies to create benchmarks, assess performance, and make strategic decisions. Traditional metrics, however, may not properly capture the risks embedded in complex or illiquid insurance liabilities, as recent global market volatility has revealed. As a result, many insurers have turned their focus towards risk-adjusted performance metrics.

Overview of traditional risk and performance metrics

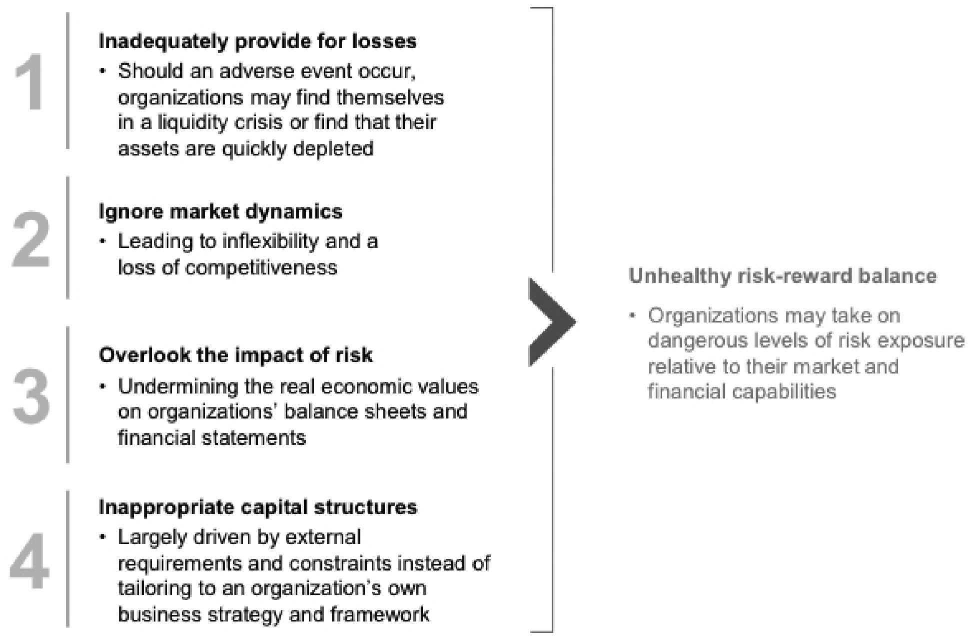
Exhibit 1: Common traditional risk and performance metrics



While the traditional metrics shown in Exhibit 1 are widely used, they are built on a series of simplifying assumptions that may not be adequate in certain economic environments. These metrics assume that future performance can be predicted using past experience, and may not properly account for inherent risks and current economic conditions. Defining risk as volatility from the expected, ROA, for example, ignores the fact that potential volatility can come from both the company's profits as well as the underlying asset base. Further, one-time adjustments to the balance sheet may introduce volatility into traditional metrics.

CONTINUED ON **PAGE 8**

Exhibit 2: Shortcomings of traditional metrics



Risk-adjusted performance metrics

The fundamental problem with traditional metrics is that it is possible for an economically unhealthy organization to look healthy, concealing its true economic state. As a result, executives are increasingly turning to risk-adjusted performance metrics (RAPMs) to enhance performance measurement.

By analyzing each risk both independently and in aggregate, RAPMs allow "apples to apples" comparisons of organizations, business units, or products with distinct risk profiles. Broadly, these metrics align corporate strategy and investment. By ensuring proper compensation for accepting risk, insurance company management is able to better assess its own performance, understand how decisions impact other areas of the organization, and ensure an appropriate overall risk portfolio for the organization. Furthermore, the RAPMs promote corporate transparency and allow shareholders to more effectively assess management competency.

Some of the most commonly used RAPMs are Return on Risk-Adjusted Capital (RORAC), Risk-Adjusted Return on Capital (RAROC), and Risk-Adjusted Return on Risk-Adjusted Capital (RARORAC). These metrics are covered in more detail below.

RORAC

RORAC assumes that the organization has a fixed supply of capital which is allocated to each business unit or product line proportional to that unit's risk exposure. This is an organic capital allocation approach that views the organization as a consolidated business entity. RORAC is calculated as follows:

$$RORAC = \frac{Revenue - Expenses}{Risk\ adjusted\ capital\ - Diversification\ benefit}$$

Economic capital is often used as the denominator for RORAC; however, statutory capital could also be used if it offers more conservatism or better reflects the realities of the business environment.

RAROC

RAROC, also known as the "Sharpe ratio for business units," assumes that the organization extends capital to various businesses and charges each unit as it would for a loan. This is a dynamic, bottom-up approach that views the organization as a collection of businesses. RAROC is calculated as follows:

$$RAROC = \frac{Revenue - Expenses - Expected\ losses}{Capital}$$

RARORAC

RARORAC can be thought as a combination of RAROC and RORAC. RARORAC is derived using the numerator from RAROC and the denominator from RORAC.

$$RARORAC = \frac{Revenue - Expenses - Expected\ losses}{Risk\ adjusted\ capital - Diversification\ benefit}$$

By adjusting for risks in both the expected return and the capital consumption, RARORAC acts as a powerful comparative tool for risk analysis. In decision-making, RARORAC should exceed the hurdle rate in order to meet the company's profitability targets.

Key Terms

DIVERSIFICATION BENEFITS are any synergies that arise from the interaction of two or more investments in a portfolio, whereby non-systematic risk is mitigated

ECONOMIC CAPITAL is the amount of retained capital that an organization needs in order to ensure economic solvency. Economic capital reflects the risk appetite of the institution and includes provisions for losses in extreme scenarios. Banks often use the term **EQUITY CAPITAL**

EXPECTED LOSS is the average anticipated loss amount that an organization will suffer across a range of scenarios

HURDLE RATE is the minimum return required to create economic value for the organization. It is often referred to as **COST OF CAPITAL**

RISK ADJUSTED CAPITAL is the amount of retained capital that an organization needs to ensure solvency under a specified set of risk and survival criteria, thus reflecting volatility of future outcomes. Economic capital is an example of risk adjusted capital

CONTINUED ON **PAGE 10**

Sample case study

Exhibit 3 provides a simple numerical illustration of how some of the aforementioned metrics compare. Consider the following hypothetical one-year investments:

- **A** is a $10,000 investment with revenue of $1,000. It has an expected loss of $500, economic capital of $9,500, and diversification benefit of $500
- **B** is a $10,000 investment with revenue of $1,500. It has an expected loss of $1,000, economic capital of $10,500, and diversification benefit of $100
- Both investments have expenses of $50

Exhibit 3: Numerical illustration of ROI, RORAC, RAROC, and RARORAC for two hypothetical investments

	Investment A	Investment B
ROI[1]	$\frac{1{,}000-50}{10{,}000} = \mathbf{9.50\%}$	$\frac{1{,}500-50}{10{,}000} = \mathbf{14.50\%}$
RORAC	$\frac{1{,}000-50}{9{,}500-500} = \mathbf{10.56\%}$	$\frac{1{,}500-50}{10{,}500-100} = \mathbf{13.94\%}$
RAROC	$\frac{1{,}000-50-500}{10{,}000} = \mathbf{4.50\%}$	$\frac{1{,}500-50-1{,}000}{10{,}000} = \mathbf{4.50\%}$
RARORAC	$\frac{1{,}000-50-500}{9{,}500-500} = \mathbf{5.00\%}$	$\frac{1{,}500-50-1{,}000}{10{,}500-100} = \mathbf{4.33\%}$

[1] $ROI = \frac{Gain\ from\ Investment - Cost\ of\ Investment}{Cost\ of\ Investment} = \frac{Revenue - Expenses}{Cost\ of\ Investment}$

Using a traditional ROI metric, Investment B appears to be a more attractive opportunity given the higher ROI. After examining the economic capital requirement, Investment B still maintains its appeal given its higher RORAC.

However, when expected losses are taken into consideration, the two investment opportunities become equally attractive given their identical RAROC. Finally, after provisioning for risk in both the returns as well as the capital requirements, Investment A is actually the preferred investment under the RARORAC metric.

RARORAC not only measures the return and the riskiness of an individual investment, but also balances it against the rest of the company by normalizing it to a common "unit" of risk. Thus, Investment A is the better opportunity because it offers a healthier risk-reward balance, optimizing usage of the company's limited capital resources.

Implementation considerations

There are several considerations facing companies implementing RAPMs and integrating them with existing risk management frameworks and processes.

Risk measurement methodology: The correct risk measurement methodology needs to be in place. In other words, capital calculations should be rigorous and consistent across businesses and product lines. There must be sufficient confidence that a company whose capital falls within the employed RAPMs will remain solvent.

Interdependencies: Correlations between business units and product lines must be accurately measured. Offsetting and magnifying risks across units need to be closely examined in order to appropriately capture diversification effects across the company.

Required rate of return: The hurdle rate needs to be agreed upon by both the business units and senior management. This threshold may be derived using either qualitative or quantitative approaches. For example, the Capital Asset Pricing Model (CAPM) uses a risk-free rate plus risk premium methodology that incorporates quantitative market information and betas.

Overreliance: As with other metrics, there is a danger of overreliance on RAPMs alone. Although the methodology may appear comprehensive and sound, RAPMs should not be the sole metric used in decision-making. Instead, RAPMs should be used in conjunction with other appropriate management tools and metrics.

Conclusion

Traditional risk and performance metrics have deficiencies which may be overcome in part with risk-adjusted performance metrics, such as RARORAC. Optimizing RAPMs can help an insurer effectively achieve a desired risk-reward balance in its business. When RAPMs are properly integrated with existing business processes and used in conjunction with other risk and performance metrics, companies will be better positioned to thrive in even the most turbulent of times.

The views expressed are the authors' own and may not represent the views of Oliver Wyman.

Bibliography

Beaumont, P. (2004, January 16). Financial Engineering Principles: A Unified Theory for Financial Product Analysis and Valuation. John Wiley & Sons.

Brown, A. (2003, January 28). Wilmott Forums.

Brunel, V. (2007, October). Risk Adjusted Return On Risk Adjusted Capital (RARORAC). Vivien Brunel.

Holton, G. (2014). Economic Capital. Risk Encyclopedia.

Golin, J., & Delhaise, P. (2013, March 18). The Bank Credit Analysis Handbook: A Guide for Analysts, Bankers, and Investors. John Wiley & Sons.

Oliver Wyman. (2009, August). Unmasking True Performance Through Corporate RAROC. Oliver Wyman, Corporate Risk - Issue 1.

Dean Kerr, FSA, MAAA, ACIA, is a principal with Oliver Wyman and a Friend of the SOA Product Development Section Council. He can be reached at dean.kerr@oliverwyman.com

Tom Mao is a consultant with Oliver Wyman. He can be reached at tom.mao@oliverwyman.com

Helen Duzhou is an analyst with Oliver Wyman. She can be reached at helen.duzhou@oliverwyman.com

Highlights of Sessions at the 2014 Life and Annuity Symposium and the 2014 SOA Annual Meeting & Exhibit

By Kurt A. Guske and Donna Megregian

Kurt A. Guske, FSA, MAAA, is vice president and actuary at AIG Global Consumer Insurance. He can be reached at Kurt.guske@aig.com.

Donna Megregian, FSA, MAAA, is VP and actuary, in charge of actuarial services for RGA in. She can be reached at dmegregian@rgare.com.

This article contains a summary of some of the presentations given at the 2014 Life and Annuity Symposium in Atlanta and the 2014 SOA Annual Meeting & Exhibit in Orlando. While this article covers only a portion of sessions that are related to product development, it shares observations that have been made by various members of the SOA Product Development Section Council. We encourage everyone to join our LinkedIn group where you can participate in discussions on these or any other topics that are relevant to our business. If you would like to present at an upcoming SOA event or write an article for Product Matters!, please contact Simpa Baiye at sbaiye@sunamerica.com, Vera Ljucovic at vljucovic@scor.com, or Kurt Guske at kurt.guske@aig.com.

2014 Life and Annuity Symposium May 19–20, 2014

Predictive Modeling Session 3: Applications of Predictive Modeling

Moderator/Presenter: Donna Christine Megregian, FSA, MAAA
Presenter: Glenn Hofmann, MBA, Ph.D.
Presenter: Scott Anthony Rushing, FSA, MAAA
Presenter: Elliott Wallace

The third session in the predictive modeling series that took place at the Life and Annuity Symposium presented two different applications of predictive models. First, Glenn Hoffman of TransUnion and Scott Rushing of RGA discussed an ongoing collaborative effort between these two companies related to a mortality index based on credit data. In essence, TransUnion developed a model that used credit data (not necessarily credit score) to develop a mortality risk index that ranged from 0 (good risk) to 100 (poor risk), and RGA went on to validate the predictive ability of the model. The discussion included how the model was developed, tested and validated, with an initial count of over 1 million deaths in the database—an actuarial dream of a starting point for a mortality study! The model would not be used to underwrite risk, but could be leveraged in a variety of ways to possibly target marketing, simplified issue or perhaps near-post level term policies that would be good risks for conversion. Slides presented for this are available on the SOA website.

Elliott Wallace from LexisNexis discussed modeling efforts related to what he referred to as DNA, or "data" nucleic acid—the unique and comprehensive footprint on an applicant that creates a specific risk profile for use in underwriting. This particular model uses multiple sources of data, including credit, driving history, and various other public records (lifestyle and behavioral) and can even include prescription history. Validation of the model appears to show that sometimes the mortality experience from the model categorization was slightly better than what was derived from the original decision using the traditional underwriting process.

The ABCs of SI UPS

Moderator/Presenter: Allen M. Klein, FSA, MAAA
Presenter: P.W. Calfas, ASA, MAAA

This session presented some basic considerations when designing a simplified issue (SI) product. The UPS in the meeting title stood for underwriting, pricing and sales. Initially, Al Klein of Milliman discussed many of the underwriting issues related to simplified issue products. Very critical to the SI product is defining the application and other third party data that may be acquired in the underwriting process. Third party data often includes MIB, prescription histories, and MVR. One of the key takeaways is how important the application wording is. It eliminates the poorer risks, providing protective value questions to select better risks.

2014 SOA Annual Meeting & Exhibit October 26–29, 2014

Life Insurance Illustrations – A Reality Show

Moderator/Presenter:
Timothy C. Cardinal, FSA, CERA, MAAA
Presenter: Donna Christine Megregian, FSA, MAAA
Presenter: Albert Jeffrey Moore, ASA, MAAA
Presenter: David Schraub, FSA, CERA, MAAA

This session gave a glimpse at what could potentially be discussed in a series of quarterly meetings with life insurance illustrations as the topic. The audience was able to hear both internal and external thoughts as fellow panel-

ists presented their discussion points during these mock meetings. Each panelist was able to hit a buzzer to time out of the conversation to allow for the internal monologue to be voiced so the audience could understand the thoughts and feelings as the meeting progressed.

The meeting involved a representative from the IT, marketing, product, and risk management areas. Marketing rep Darth (Tim Cardinal), opened as the frustrated sales director going up against the "naysayers" and conservative coworkers impeding the progress of a small company and his ability to sell competitively. The company was considering developing an IUL product. IT director Obi-Wan (Albert Moore) offered his suggestions and personal frustration as the pressures of IT are endless and much more difficult if specifications are too "actuarial" or vague. Complicated products such as IUL are not simply a modification and walking through specifications and examples are the best way to helping IT meet the goals of a project.

Product/Illustration Actuary Leia (Donna Megregian) discussed how pressures from the marketing area to beat credited rates on IUL products out there cannot be arbitrary within the confines of the regulation (I can't just illustrate at 15 percent because you can't sell it if it's not 1 percent higher than the competition). She also explained some of the controversy that is going on around the proposals for an actuarial guideline related to IUL and proceeding cautiously but steadily would be a good next step. This opened the floor for risk manager Han (David Schraub) to discuss his concerns with late involvement in the discussion, choice of vendors and proper controls on assumptions and illustrations.

After the discussion of IUL, the next quarterly meeting focused on some information and related changes to dividend scales. Assumptions that it should just be a table drop and a quick change for IT to do this aren't always appreciative of the quality controls that exist to ensure updates are handled correctly. Also discussed was the inability to demonstrate improvement in illustrations despite the overall experience, with the counter balance that deterioration is something that does need to be taken into account. Calling attention to recent changes in the GRET table that cause variability in the expense assumption could also cause problems within a dividend formula and testing, mortality improvement is not always enough to improve a three factor s dividend formula.

This session was a nice change from the traditional panel discussions in its informal yet informative nature with the audience offering questions they might ask during the meeting as well.

Illustration Test Compliance

Moderator/Presenter: Donna Christine Megregian, FSA, MAAA
Presenter: Delmer F. Borah, IV, FSA, MAAA
Presenter: Francis L. Radnoti, FSA, MAAA

The format of this workshop was an interactive discussion of various Life Insurance Illustrations Model Regulation and ASOP #24 compliance topics introduced and lead by the panelists, Donna Megregian, Francis Radnoti, and Delmer Borah, facilitating discussion with their own opinions. The panelists also referred to the 2013 practice note for guidance during the discussion. The panelists used polling questions to lead into the topical discussions. The space was standing room only, and there were anywhere from 70 to 75 people, which demonstrated the importance of this topic.

The first polling question asked how the participants related to the Illustration Actuary. 43 percent of those responding (not everyone had a polling device due to the

CONTINUED ON PAGE 14

overflow of attendees) indicated they were an illustration actuary of their company. No one responded that they hadn't a clue of what the session was about.

Major topics discussed included in force compliance and what to do if self-support certification of nonguaranteed elements becomes difficult, accelerated benefit rider testing and illustration, and index UL and the proposed actuarial guideline for IUL illustrations. Regarding a polling question on in-force illustrations, 48 percent of respondents indicated their companies have products that originally illustrated non-guaranteed elements and are no longer illustrating non-guarantees. A question was asked regarding what companies call guaranteed-only projections. The term "proposal" was used by some in the room. The panel also asked about using prior gains or explicit distribution of surplus to support in-force passing. After some discussion, the panel referred the group to Practice Notes section "P" for guidance.

The panel and participants talked about the proposed actuarial guideline for IUL, and its counter proposal. A key difference in the two proposals is in how the illustrated rate is determined. The initial proposes a historical look-back approach versus the counter which is based on the determination of the investment factor underlying the disciplined current scale.

If you, the reader, have any questions that you want considered for the illustration practice notes, the panelists recommend you send an email to *lifeanalyst@actuary.org*.

Winning Strategies for In-Force Management

Moderator: Brock E. Robbins, FSA, FCIA, MAAA
Presenter: Michael Lawrence Parker, FSA, MAAA
Presenter: David J. Weinsier, FSA, MAAA
Presenter: Jean-Marc Fix, FSA, MAAA

The presenters of this very informative session discussed pricing and reinsurance strategies and risk management techniques to address life insurance and annuity product in-force issues. Brock introduced the session by claiming the in-force manager is an emerging species. Once part of someone else's job, such as the chief actuary or valuation actuary, the in-force manager has become more prominent as a stand-alone executive level position.

Michael Parker, presenting from the direct company perspective, characterized historical in-force management practices as "making good on the past promises we have made to our policyholders," and as such described this work as "Challenging, dutiful, and honorable." Beyond this historical perspective, he forecasted important growth and development in the in-force management field in the coming years. While in the past, in-force management principally involved "product" management, he sees a future which will include, to a much greater extent than ever before, both "customer" management and "sales" management.

Michael described product management as the practice of appropriately adjusting such contractual policy elements as crediting rates, dividends, and other non-guaranteed product elements. He claimed that there is little opportunity left in product management due to such dynamics as declining interest rates that have now hit guarantees, and potential legal obstacles. He saw the most important remaining product management opportunity lying in post-level term premium setting.

In contrast, he described customer management as a developing practice. The opportunities here include targeted policyholder education programs regarding policy value, optimal funding, and policy benefits. He also talked about targeted wellness programs as a form of customer management that, via the help of big data, could realistically help to improve the mortality (and therefore profitability) of your in-force blocks of business.

He exemplified the third dimension of in-force management, sales management, by introducing a concept he called an "Upgrade Program"... different from more traditional cross sell or up sell initiatives. The idea behind an upgrade program would be to provide the customer with an upgrade of their existing product based on a new and differentiated value proposition that might better fit the value need they have today. This is a value need which may have changed as the policyholder has aged, and which may be better met by modern products than those available when the policyholder made their original purchase.

Michael concluded by making suggestions regarding how one might implement an effective in-force management strategy, saying that in order to do it companies need to go "all in." His tips for success included getting support from the top, creating a department dedicated to this work, and allocating top talent and resources to the cause. Lastly, he advised being mindful of all concerned parties and warned there could be some relationship issues with distributors, but that the corner office is key.

David Weinsier represented a consultant's view on winning in-force management strategies. He talked about approaches for life insurance, annuities, and LTC. He defined effective in-force management as finding ways to improve the value proposition of existing business.

Regarding life insurance, he discussed techniques for identifying and optimizing post-level term (PLT) pricing and UL with secondary guarantees (ULSG), and managing current assumption UL CoIs. Regarding PLT optimization, he outlined three successive analytical approaches: descriptive, predictive, and prescriptive.

David is aware of numerous companies that have successfully implemented CoI changes on in force. His proposed three-step approach to CoI management includes (1) assessing the risk, (2) performing experience studies and demonstrate the need for the change, and (3) determining and implementing the change.

His discussion of ULSG in-force management also included modeling multiple premium patterns to allow for better understanding and quantification of the risks and profit profile of the business. Best practice also involves reflection of dynamic policyholder behavior and separating voluntary surrenders from lapses.

Regarding LTC, David stated that reliable claims data, studies, and models are necessary for setting and supporting premium increases.

He closed his presentation with a discussion around annuity management. He described the need for meaningful analytics and management dashboards that can be grasped and relied upon to make informed decisions. He talked about accounting volatility on indexed annuities and the need to refine hedging strategies to increase the alignment of accounting volatility.

Jean-Marc Fix discussed strategies involving reinsurance, more from the direct companies' perspective. He said that reinsurers are a motivated audience to help with in-force management because the issues companies are looking at are likely already being addressed by the reinsurers. Reinsurers are able to benchmark against multiple companies and may be able to provide comparisons of the in-force management issues versus your peer companies.

He outlined several things that reinsurers can help with. These include managing GAAP volatility due to GAAP unlocking, managing risk and reserves through traditional reinsurance or securitization. If companies decide to divest a block, reinsurers may help by buying the distressed block or finding the right buyer, or using assumption reinsurance. He also offered that reinsurers can provide administrative reinsurance to help control the expense side. Some reinsurers, he stated, specialize in dealing with old legacy systems. He offered that traditional reinsurance can be used as a stop gap measure until the company develops a more final solution.

IUL Deep Dive

Moderator/Presenter: Katie Cantor, FSA, MAAA
Presenter: Jeremy Allen Bill, FSA, MAAA
Presenter: Paul Fedchak, FSA, MAAA

Katie Cantor opened the IUL discussion with a market overview and then provided some technical insights into GAAP accounting under SFAS 133, and statutory reserves under AG 36 for index UL products. She outlined how the IUL market has been growing every year with the number of new entrants growing as well. She stated that 39 percent of UL sales are now IUL sales (Source: Wink's Sales and Market Report and LIMRA).
Regarding product features and design, Katie pointed out that volatility control funds are becoming more popular index options. In response to the low interest rate environment, companies have decreased caps credited rates and participation rates on both new and in-force products.

CONTINUED ON PAGE 16

Companies are going with higher caps, and more and more are including accelerated benefit riders, such as LTC.

She explained that US GAAP requirements offer some of the biggest challenges for IUL products. She focused the GAAP discussion on applications of SFAS 133, bifurcation of the embedded derivative and host components, and cash flows included in valuation (including future premium).

While the FASB and IASB have decided not to pursue insurance contract convergence, the FASB plans to implement targeted US GAAP improvements. An approach that many in the industry would like to see is to institute a principles-based approach to derivative liability calculations in lieu of the current bifurcation requirement.

She also touched on US statutory requirements for IUL under AG 36. There are three methods for calculating reserves: Type 1, which are "hedged as required," and Type 2 (CRVM with UMV) and Type 2a (CRVM with UAMV) which allow more flexible or dynamic hedging. Type 1 generally leads to book value-type reserving whereas type 2 or 2a generally lead to market value type reserving. For most policies, the pattern as volatility increases is that type 2 reserves become greater than type 2a which become greater than type 1. If the product has a secondary guarantee under AG 38, then the statutory reserve is the greater of the AG 38 reserve or the AG 36 reserve.

Jeremy Bill then discussed advanced IUL loan topics. He explained there are typically two types of loans associated with IUL contracts, fixed rate loans with the loaned portion moving to fixed account and indexed loans or variable rate loans whereby the interest crediting stays in the index accounts. He stated that the variable loan rate usually ties to an external index such as Moody's Corporate Bond yield average.

On the indexed loans, he explained the net rate (loan rate less crediting rate) depends on the performance of the index. He stated that there could be an arbitrage if the index crediting rate, such as 12 percent, exceeds the loan rate, such as 5 percent. This would create a negative 7 percent spread, which would be an advantage to the policy owner. However, the opposite could also be true if the crediting rate is less than the loan rate.

He talked about the different communication approaches to showing indexed loans on the sales illustration. For example, show multiple illustrated crediting rates to demonstrate the risk. Another approach is to show results under multiple loan rates, if a variable loan. He suggested additional disclosures for the potential of loan rates charged and credited differing in the future.

Paul Fedchak closed the session speaking about static versus dynamic hedging strategies for backing the index interest crediting. For static index hedging, he talked about buying options from Over-The-Counter (OTC) dealers. He stated that it would be more possible to match asset options with the business being hedged. Rebalancing would not be necessary with this matching in mind.

He expressed that vanilla designs would bear costs similar to the exchange-traded market. More exotic index options would charge a premium. He cautioned that counterparty risk must be managed, and that the direct company is beholden to the market's ability to supply options.

He then talked about the advantages of dynamic hedging in that the costs would be cheaper, but with less matching. Companies can write a wider range of designs and track actuarial experience more dynamically. He said the company can manage risks in aggregate with other lines of business using dynamic hedging.

Paul also talked about using a hybrid strategy, with elements of both static and dynamic programs. Opportunistically, he claimed that one could go to the OTC market when prices are attractive and dynamically replicate at other times. Hybrid with dynamic rebalancing allows closer tracking of the liabilities as a whole.

Paul later talked about some of the issues facing the sales illustration and the proposed regulations that are addressing the issues. ◻


SOCIETY OF ACTUARIES
Life & Annuity Symposium
GROW YOUR CAREER IN THE PRODUCT DEVELOPMENT AND LIFE INDUSTRIES
NETWORKING WITH 400+ PEERS
60 THOUGHT-PROVOKING EDUCATION SESSIONS
DYNAMIC SPEAKERS
The Life & Annuity Symposium is the world's most comprehensive event for actuaries who design, engineer, construct, service and maintain life insurance products. If you work or are interested in the life insurance industry, you can't afford to miss it.
MAY 4-5, 2015, NEW YORK, NY
REGISTER TODAY AT SOA.ORG/LAS

Fixed Indexed Annuities: Recap … And What's Next?

By Guillaume Briere-Giroux

Guillaume Briere-Giroux, FSA, MAAA, CFA, is principal and Hartford office leader of the Actuarial Practice of Oliver Wyman in Hartford, Conn. He can be reached at guillaume.briere-giroux@oliverwyman.com.

Editor's Note: This article has been previously published by Oliver Wyman and is reprinted here with permission.

Growing sales and a flurry of M&A deals have put a brightening spotlight on fixed indexed annuities (FIA). From 2007 to 2013, despite near-record low interest rates, FIA annual sales growth averaged nearly 8% and their share of the overall annuity market grew from 9.7% to 17.1% (source: LIMRA). Also drawing attention were the numerous M&A deals that have taken place in the last several years (Exhibit 1). Changes in the FIA space have been rapid and profound and insurance carriers, industry analysts, regulators and distributors alike have taken notice.

This article recaps the formidable changes that have shaped the FIA market since its humble beginnings in the mid-1990s and offers a perspective on ten emerging developments to watch in 2014 and beyond.

FIA MARKET RECAP

Significant shifts have taken place in the FIA market over the last decade. To show the magnitude of these changes, Exhibit 2 and Exhibit 3 (page 19) illustrate the make-up of the market in each of 2005 and 2013 using four key criteria:

1. Company credit rating
2. Ownership structure
3. Market share
4. Primary distribution channel

In these graphs, each bubble represents a carrier and its market share. The horizontal axis reflects credit rating. On the vertical axis, the chart is divided in segments representing ownership structures; from top to bottom: mutuals, foreign subs, US stock companies, privately held entities and carriers held by recent acquirers. Colors represent the dominant distribution channel or combination of dominant channels for a given carrier. For example, in 2005 Allianz Life belonged to the foreign sub category, had an issuer financial strength rating broadly equivalent to A (A.M. Best), had the largest market share (32.3%) and mostly distributed in the independent channel.

Exhibit 1: M&A transactions involving acquirers active in FIA market (Acquirer/Seller)

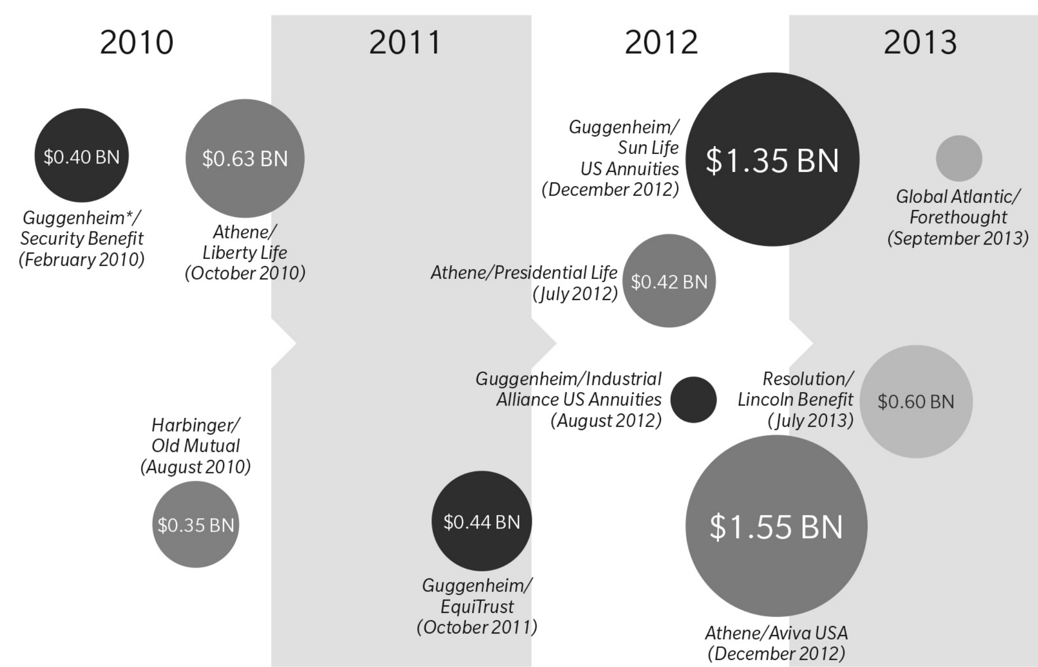


Exhibit 2: FIA Market Overview (2005)

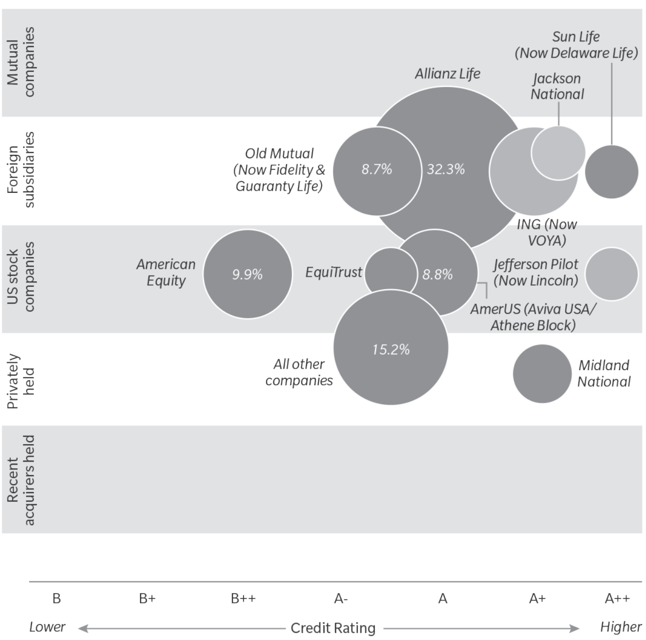
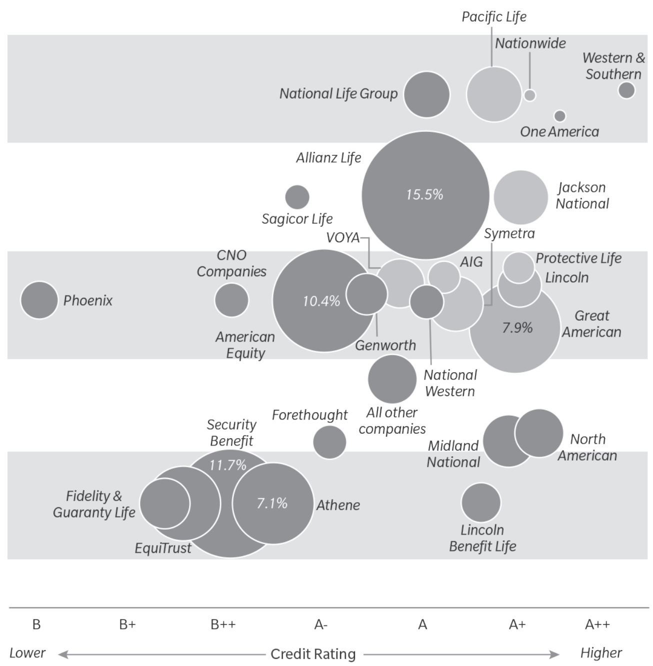


Exhibit 3: FIA Market Overview (2013)



PRIMARY DISTRIBUTION CHANNELS

Independent organizations | Independent and banks | Banks and broker/dealers | Career

A side-by-side comparison of the graphs unveils the following trends:

- Foreign Subs "In Retreat"

In 2005, the vast majority of FIA sales came from foreign subsidiaries such as Allianz Life, ING, Old Mutual and Sun Life. This trend was magnified when Aviva PLC acquired AmerUS in 2006. In 2013, the only significant foreign subs that remain are Allianz Life and Jackson National.

Solvency II requirements and new Canadian regulatory requirements have made FIAs less attractive to the parent companies of foreign subs, contributing to divestitures and strategic realignments.

- Recent Acquirers Gaining Ground

As illustrated previously, a number of recent acquirers have gained a solid market foothold through acquisitions. Many recent acquirers view their asset management and structuring capabilities as a way to generate value from existing blocks. In many cases these carriers have continued to issue new business via competitive products, resulting in increased assets under management and market share.

- Expansion In Banks And Broker/Dealers

In 2005, Sales Through Independent Distribution (Represented in blue in Exhibit 2 and Exhibit 3) accounted for approximately 90% of FIA sales. In 2013, approximately 25% of FIA sales came from outside of the independent channel. Most of this change is explained by the growth and success of new entrants with a proven track record in these alternative channels.

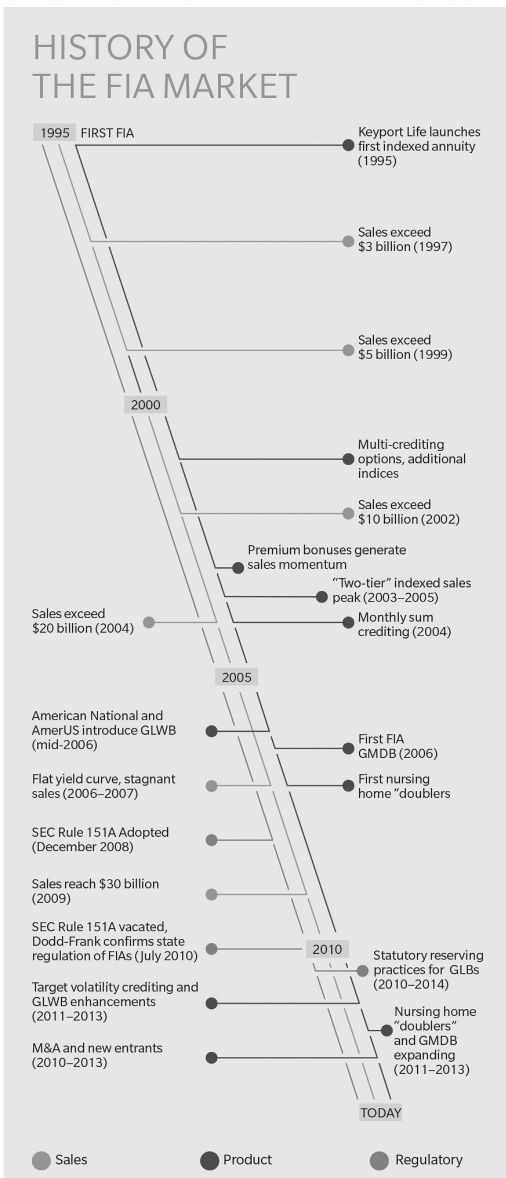
CONTINUED ON **PAGE 20**

- Broader Carrier Base

  The FIA market was considered by many industry participants as a "niche" market in 2005. Today, this perspective is largely reversed and the universe of participants is much broader.

WHAT'S NEXT?

Following this period of exciting change and growth, here are ten emerging developments to watch for in 2014 and beyond:



1. M&A Activity Is Likely To Continue

With a growing number of players, competition is increasing and there exists a wide range of views on the valuation and attractiveness of the business. This and other factors, such as limited capital available to certain carriers, will likely fuel additional M&A activity.

2. The Market Is Well Positioned For A Potential Rise In Rates

The FIA market is well positioned for rising rates relative to the traditional fixed annuity market. First, most FIA carriers' inforce blocks are composed of recent sales and thus have surrender charge protection that reduces disintermediation risk. Secondly, approximately half of inforce FIAs feature a market value adjustment ("MVA"). Although many MVA features had mixed effectiveness when corporate yields spiked in late 2008-early 2009, MVA formulas were subsequently improved for new business. In addition, most carriers with growing GLWB blocks generally stand to benefit from higher reinvestment yields. Finally, rising rates would be expected to positively impact sales and reduce pressure on new business profitability.

3. Further Expansion In Banks And Broker/Dealers Is Likely

As long as the yield curve remains steep, significant growth in banks and broker dealer distribution will likely continue. This is being accomplished with low commission and short surrender charge "no frills" designs with competitive indexing features. In the long run, sales in this channel will benefit from inforce bank channel contracts rolling into new contracts, much like in the VA market.

4. Additional Carriers Will Offer VA/FIA Hybrids

Carriers such as AXA (2010), MetLife (2013), CUNA Mutual (2013) and Allianz Life (2013) have launched VA/FIA hybrids. These products do not offer living benefits, and the rationale for introducing them varies. VA carriers might view these designs as a new and innovative way to attract VA assets without offering rich guaranteed living benefits. Others may see hybrids as a natural way to fill the "spectrum" of products available, or as a way to expand in new distribution channels. Finally, hybrids can be designed in such a way as to balance the risk profile of existing VA blocks, which can motivate VA carriers to enter the space for risk mitigation purposes.

5. Several Redomestications Will Take Place

Several carriers have recently announced their intention to redomicile. Carriers relocating to Iowa include Fidelity and Guaranty Life (announced November 2013) and Symetra (announced January 2014). Athene also decided to locate its headquarters in Des Moines following the Aviva transaction. Going against this trend is EquiTrust, who is relocating from Iowa to Illinois (announced January 2014). Key factors motivating these decisions include the regulatory environment, operating costs and human resources. The scale of recent activity certainly invites other carriers to consider their options.

6. Statutory Reserving Will Continue To Be A Key Issue

With the sharp decline in interest rates and statutory valuation rates, the conservative AG 33 framework is causing significant reserve strain for many carriers offering GLWBs. A number of companies obtained permissions from their regulator to apply less conservative reserve approaches on their inforce block such as AG 43 or modifications to AG 33. Meanwhile, the American Academy of Actuaries Reserve Working Group ("ARWG") is working on the VM-22 reserving framework for fixed annuities. The industry is closely following these developments and is generally eager to adopt principle-based approaches on new business.

7. Operational Excellence Will Become More Important

Third party providers have accelerated the product release cycle and helped many carriers reduce costs. One such third party provider issued $9 billion of FIAs in 2013. As the FIA market matures, operating costs and service to consumers and distributors will become more important differentiators.

8. Carriers Will Refine Their View On Policyholder Behavior As Experience Emerges

Significant inforce blocks are starting to exit the surrender charge period, which will give FIA carriers a wealth of data on surrender behavior. GLWB utilization experience is still emerging, and several more years of experience are needed to observe behavior outside the surrender charge when a GLWB is present. Due to relatively limited industry data, there exists a wide range of GLWB surrender and utilization assumptions. Going forward, a growing number of FIA carriers will apply advanced analytical techniques such as predictive modeling to gain further insight into policyholder behavior for application in assumption setting and customer retention.

9. Economic And Market Forces Might Incentivize Greater Investment Risk

In a post-crisis environment with stronger corporate balance sheets and lower interest rates, certain FIA carriers compensated declining yields by seeking additional liquidity and credit risk premium. Growing sales volumes from recent acquirers and the rebalancing of asset portfolios from acquired blocks have created significant investment activity.

10. Carriers Will Strengthen The Risk Management Of Riders

In contrast to their VA counterparts, FIA GLWB riders benefit from stable statutory and US GAAP accounting. Because of this and the "fixed income/book value lenses" of many FIA carriers, many companies primarily view GLWBs as a source of insurance risk that is consequently left mostly unhedged. However, GLWB riders impact both the duration and convexity of the insurance liability, and its sensitivity to index returns. Additionally, GLWBs can make FIA statutory reserves insensitive to changes in the index, which in turn can cause important statutory accounting volatility as the hedge crediting P&L emerges. Many FIA carriers will become more deliberate about how they embed GLWBs in their ALM, how they approach hedging decisions and how they manage statutory accounting volatility.

Product Development Section Council 2015 Election Results

by Vera Ljucovic

Vera Ljucovic, FSA, FCIA, is vice president & pricing actuary at SCOR Global Life Americas in Toronto, ON. She can be reached at vljucovic@scor.com.

We're very fortunate on the Product Development Section Council to have a strong and committed group of members who volunteer their time to meet the goals of the section. Each year we welcome a new crop of elected members and bid adieu to those who have completed their term and sometimes welcome back returning members. It is through their contributions that we are able to bring you this newsletter, the Product Development Symposium in May, product related sessions at the Annual Meeting in October, and various webinars and podcasts, just to name a few.

We would like to thank Ken Birk, Kurt Guske, and Tim Rozar for their many contributions to the council over the years and we hope to continue to benefit from their experience and commitment as friends of the council. Donna Megregian has returned to the council to replace Dennis Martin who has chosen to step down prior to the completion of his term. And we're very excited to welcome our newest members—Paul Fedchak, Kendrick Lombardo, and Kelly Rabin. To help acquaint you with the incoming crew, we present a brief biography of each.

New roles for the upcoming year were also determined during our October 2014 Product Development Section Council meeting. Jim Filmore was elected as chairperson of the council, Jeremy Bill was elected as vice-chairperson of the council, and Kelly Rabin was elected as treasurer/secretary of the council. The co-editors of our Product Matters! newsletter are now Kurt Guske, Simpa Baiye, and yours truly (Vera Ljucovic). Joe Kordovi is now taking the lead on podcasts for our section with Ken Lombardo taking the lead on webcasts.

New Members

Paul Fedchak, FSA, MAAA

Paul is a consulting actuary with Milliman in their Indianapolis, Ind. office. Paul has worked extensively with a wide variety of products, namely universal life, indexed universal life, whole life, fixed annuities and variable annuities. He has developed expertise with these products in the contexts of modeling, product development, product review, mergers and acquisitions and AXXX securitizations. Before joining Milliman, he worked for a medium sized life insurer as a life pricing actuary. Paul has been a member of the council since 2007, serving in the roles of newsletter co-editor and webcast coordinator. Paul is a frequent speaker at SOA meetings and regional and local actuarial meetings.

Kendrick Lombardo, FSA, MAAA

For the past three years Ken has been working as a senior consultant with Towers Watson in Weatogue, Conn. Prior to that, he worked for a direct writing company for 15 years. Ken has experience in pricing, risk management and valuation of annuity products including VA, SPIA and FIA. His experience also includes life pricing, in-force management, predictive modeling, hedging review, and asset liability analysis. Ken has been a member of several sections of the SOA and prior to being elected was a friend of the Product Development Section Council. He is a frequent presenter at SOA meetings.

Kelly Rabin, FSA, MAAA

Kelly joined Milliman in Seattle, Wash. in February 2014 as a consulting actuary in the life practice. Her responsibilities include in-force management, BOLI/COLI pricing and experience analysis, and the evaluation and optimization of pricing models. Prior to that Kelly was Vice President of Product Management for Symetra's Individual Life division. She was involved in product development and in-force management of their individual life products as well as the BOLI/COLI line of business. Kelly is a frequent speaker at SOA industry meetings.

Please join me in welcoming everyone to their new roles on the Product Development Section Council! ◻

Evolving Strategies to Improve Inforce Post-Level Term Profitability

By George Hrischenko

George Hrischenko, FSA, MAAA, is vice president & marketing actuary at SCOR Global Life in Charlotte, N.C. He can be reached at ghrischenko@scor.com.

An increasingly popular topic at industry meetings is how companies can best manage the post-level term (PLT) for level premium term life. Indeed, the SOA's Annual Meeting devoted not one but two sessions to this specific topic.

And for good reason: many 10 and 15-year level premium term policies are reaching the end of the level period. Because of the product design, this raises both selection and pricing issues that, left unaddressed, may create a vortex of deteriorating mortality. (For more information on this topic, we strongly suggest "Post-Level Term Survey Results," by Jason McKinley, FSA, in the June 2014 issue of SOA's *Product Matters!*)

The Pricing Approach

In the early years of level premium term life, many carriers reported minimal—and in some regulators' views, insufficient—reserves for the business. Companies justified their reserving approach by arguing that at a future date, premiums would change from a level premium to an increasing scale of yearly-renewable term rates, thereby mitigating the need to carry significant reserves in the early durations. The unitary reserve method allowed actuaries to value the reserves using the entire product horizon including both the level period and the YRT period. With the high end of term lapse rates actually observed in recent years, and the lack of lapse consideration in unitary reserves, this is clearly an optimistic view of premium income.

Regulation XXX came into effect in 2000 aimed to curb this practice and resulted in significantly increased reserves. XXX required the segmentation of reserves which in essence resulted in a separate valuation of the level period from the increasing ART period. The rule also accounted for lapses which the unitary reserve methodology did not. Very few in force policies were expected to renew following the post-level period, especially at a time when life companies were "racing to the bottom" with their premium rates.

Companies eventually adapted to the new regulation with the help of coinsurance capacity and reinsurance competition and a growing availability of affordable outside financing. The PLT period was but a glimmer in their eye. Today, however, as the years since the first level term plans were issued carries on, many carriers find themselves in the thick of the PLT and confronted with a number of questions:

- How do initial PLT lapse assumptions compare to our expected, calculated more than a decade ago?
- What mortality experience can we expect on the residual, persistent PLT inforce?
- What options do we have to encourage more lives to renew at the PLT?

Answers to these questions, for many companies, remain incomplete as we have just started to experience the first wave of policies entering the PLT. While we have seen some limited lapse experience emerge in recent years it is quite likely that we will not have a clear picture on the resulting mortality effects for some years to come.

What Limited Experience Tells Us

As mentioned above, there is currently limited credibility of mortality data at this point. What we have seen in our own data in the few years since the first generation of level premium term life policies have reached their PLT are lower lapses in the early durations than assumed. There are a number of potential reasons for this including policy owner complacency which could easily occur if premiums are paid through automatic bank draft, some may keep the policy in place while they shop for a lower rate, some may feel the higher rates are worth the cost (at least early on) of not having to go through the efforts of applying for a new policy and the battery of underwriting tests, unemployment may cause some to persist or lapse, and policy owners going through a divorce settlement may be forced to delay lapse. The good news is that any of these persisting policyholders likely improves the mortality of the residual pool.

This seems to support the idea that, if a carrier could retain even a small portion of lives they expected to lapse, the effects on pool mortality may be highly accretive. However, this remains a theory until we can collect sufficient claims experience to analyze pre- and post-level premium mortality, and then address alternatives by current level of interest.

But the promise is so alluring that many carriers are exploring ways to encourage policyowners to persist in the PLT, even for just a few years. In the next section I

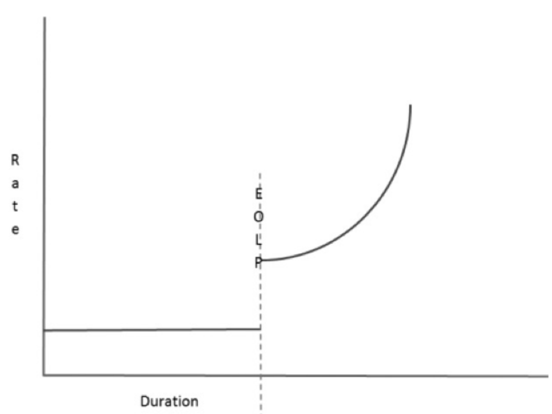
CONTINUED ON **PAGE 24**

examine four approaches that companies are weighing, and some of the potential benefits and drawbacks of each. I include the original model as a logical starting point.

Varying Approaches, Uncertain Outcomes: The Original Approach

As originally structured, level-premium term can be thought of as two components: a fixed of level premium and a YRT rate schedule thereafter. Depending on company, the rate difference between the last level premium and the first YRT rate can be significant. While most rate jumps average 5-8 times, we have seen some schedules that allow for up to a 30-multiple jump, with rates continuing to climb from there. Moreover, in most cases the rates switched from select to aggregate rates, combining all risks into a single rate schedule (and eliminating risk classes). An illustration of such an approach appears in Figure 1.

Figure 1 – Traditional Approach to PLT (All Figures Illustrative)



The traditional "shock" rate to a YRT schedule would cause a corresponding "shock lapse," wherein most policyowners would cancel coverage due to the new, much higher cost.

The jump, or "shock," rate was designed to accomplish two goals. First, healthier lives would have good reasons to seek other coverage and lapse the existing, now expensive product. For some companies replacement was the goal, while others including mutual insurers sought conversion to permanent products. The aggregate rate design is much simpler to administer than a multi-class structure. Second, the shock illustrated a ceiling rate, much in line with annual cost of insurance (COI) rates. As such, reserving became much less stressful than in the level period. By setting the ceiling high, the company had leeway to alter rates to reflect emerging mortality.

The PLT YRT rates go back to pre-level term days, when for decades all the market had to offer was a YRT policy. Companies have a certain confidence in pricing such products, pricing and administration is simple, and pricing flexibility allows the company room to change rates as mortality emerges.

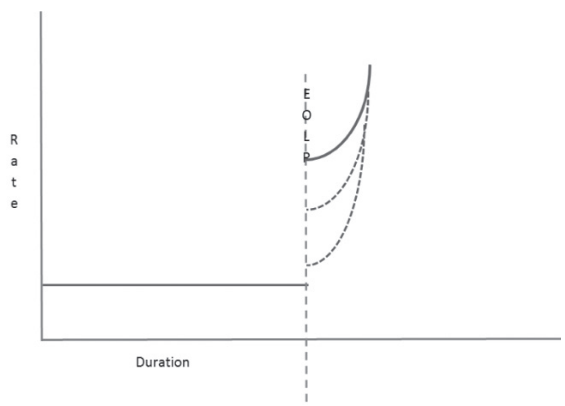
On the other hand, the shock rate led to the shock lapse, wherein all but the worst risks are almost guaranteed to lapse and seek new, more affordable coverage. The remaining lives are expected to be amongst the worst of the worst mortality-wise, as they have the greatest incentive to keep their policies in force. With such limited credibility, claims volatility is almost certain, which can make rate setting a guessing game.

Bottom Line: The combination of uncertain mortality combined with the loss of the best lives (perhaps to a competitor) make the traditional approach the least appealing in today's environment. This option also is potentially the most dangerous from an image perspective: one can imagine the investigative news reports featuring an elderly couple who has seen their premiums jump 20-fold. And while some better risks may persist for the first year, early experience indicates that any hopes of continued persistency are likely remote.

Simplified Re-Underwriting

This is the newest iteration of alternatives to the model described above, and therefore it should not be surprising that a PLT re-underwriting strategy is garnering the greatest interest. So far, a few companies have experimented with a variation of the class-continuation option to mitigate selection issues, with at least one company having implemented a trial run. In this scenario, the company offers the insured the option to answer a simplified issue underwriting questionnaire as the PLT approaches. The carrier uses these answers to determine the insured's PLT risk class, possibly simplified from 5-7 to 2 smoker/nonsmoker classes. Those who decline to reply default to the traditional guaranteed YRT rate (Figure 2).

Figure 2 – PLT with Simplified Underwriting



The simplified underwriting approach gives the insured the option of answering a few medical questions and perhaps obtaining a better PLT rate. Regardless of outcome or if the insured declines, the rate will not exceed the traditional guaranteed YRT rate (the solid curve).

This idea has a number of advantages over the other options discussed below. First, it is less arbitrary. Even with a simplified underwriting questionnaire, the carrier can learn much about the insured's current mortality profile. This sense of fairness, companies believe, may make the pricing and rate schedule appealing to both customers and regulators.

Perhaps most importantly, it helps address—at least somewhat—the selective lapsation issue that many of the other approaches have to varying degrees. Even with a simplified underwriting questionnaire, the carrier is apt to learn more about the specific risk the persisting insured presents.

But because this is a novel approach, it raises a number of questions that remain unanswered. For example, what signal value is communicated to the policyowner by offering the re-underwriting? Our experience has demonstrated that many level term policies for the best risks stay inforce for at least for a short time post level term because policy owners do not react to the rate change until after it has taken effect.

Offering the simple questionnaire before the PLT anniversary may alert the insured of the pending premium jump. This could cause the policyowner to lapse sooner, especially the best risks. Conversely, many level term policies contain conversion provisions. The notification of a jump in rates may incent impaired risks to exercise this option, locking in lower rates than the shock rate.

Implementation also poses challenges. How will the insurer communicate this option to the consumer? What questions will the insurer ask? How will the insurer ask the questions and collect the answers? What will the insurer do with incomplete questionnaires? How can the insurer guarantee that the largest number of policyowners responds?

Perhaps the simplest approach would be to enclose in the notification a postage-paid postcard with "Yes/No" questions and possibly an authorization to examine pharmaceutical and driving histories. Unless some incentive is offered to producers, it is highly unlikely that the company can recruit agents to perform this valuable task. However, call centers may be useful.

Carriers with an automated simplified issue process in place may be able to direct insureds to a secure website and process the decision immediately. For example, SCOR's Velogica solution for middle market sales may be an effective and relatively easy tool to implement. Velogica was originally designed as a solution to allow life insurers to access the middle market, using web-based technologies to access databases and produce a logic-based underwriting decision at the point of sale. Such a technology could allow a call center employee to inform an existing policyholder of their approval for more favorable rates under the re-underwriting approach. The major labs, including ExamOne, have developed lab scoring tools based on blood and fluid panels. Other reinsurers and consulting firms may have similar available technologies.

Bottom Line: A simplified affirmation of the insured's continued (relative) risk profile could be a big win-win for both the consumer and the insurer. The policyowner obtains the benefit of a possible PLT rate discount, while the insurer can be somewhat confident that the discount

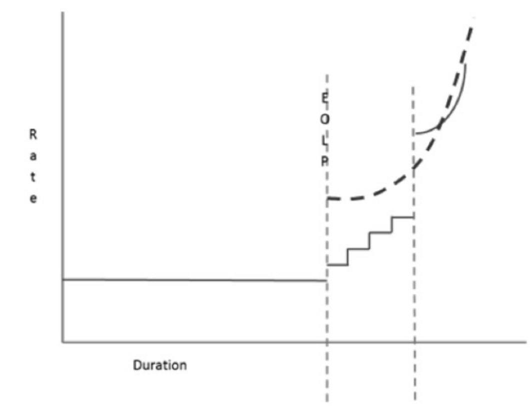
CONTINUED ON **PAGE 26**

is warranted. In a world where we want the policyowner to persist, this approach may offer the most promising results.

The Graded Approach

About five years ago, several companies began experimenting with an approach somewhat similar to what is being done in Canada. This involves using a graded approach, where PLT rates increase at much smaller increments until a future anniversary (e.g., 5 durations post end of term). Following the end of this graded period, rates jump to the original YRT schedule (Figure 3).

Figure 3 – The Graded Approach



Following the PLT, rates increase gradually and for a fixed period, with perhaps additional "steps," before converting to a YRT schedule. The dashed line simulates the original YRT shock rate.

The graded approach allows insurers to ease in higher rates that are much more attractive to the policy owner than those originally illustrated, while retaining the right to increase rates up to the ceiling if need be as experience emerges. By moderating the premium jump, many policy owners may be encouraged to retain the current coverage rather than go through the ordeal of being reunderwritten (at a new attained age and with any impairments) for a new policy. While slightly more complex than the traditional approach, rates generally do move to an aggregate rate, easing administrative requirements.

Perhaps the most positive development with this approach is that experience so far seems to support that this approach generates results in the right direction. Early indications are the PLT lapse rates are emerging much lower than we see with the traditional approach, which should imply a better overall mortality profile.

Two issues remain outstanding, however. First, the best risks still have motivation to replace coverage, as a new level premium policy will likely have lower rates—which happen to be level again for another decade or so. While the residual mortality pool may exhibit better experience, this is of course relative (i.e., worse than experience during the level term). Second, most of the companies that have experimented with this approach have yet to collect any reliable YRT experience. In a way, then, this may be considered a salve, not a cure, to an underlying problem that exists under the traditional model—namely, selective lapsation.

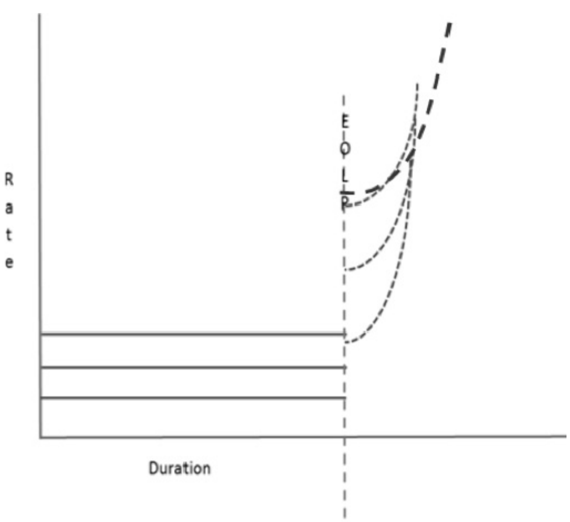
Bottom Line: Of all of the alternatives to the traditional approach discussed in this article, the graded approach seems to have the most actual supportable experience. So far, that experience appears to be positive from both a mortality and lapse perspective. However, we cannot determine how much of this better experience is attributable to an overall better risk pool of the company and how much is directly due to the new pricing structure. In addition, it should be noted that companies in the market where this approach has been used for some time, i.e. Canada, are now examining what benefits might be had by switching to the traditional U.S. approach outlined above. Do they know something we don't?

The Class-Continuation Approach

A few companies have experimented with modifying the rate increase based on the insured's select risk class, with rates converging to an ultimate rate in later durations (Figure 4). The key difference with this approach versus the previous variations is that class structures continue into the PLT period, not aggregating to a single rate. As in the other models, an aggregate YRT ceiling provides the company with some pricing maneuverability.

Like the traditional approach, all policyowners experience a rate increase and move to a YRT schedule. However, the magnitude of the jump is dependent on the insured's original risk classification. The best risks would experience the lowest increases, though as was said before, all rates would eventually converge to an ultimate rate in the future.

Figure 4 – Continuing Class Structure



Under this approach, all policies experience a rate increase, with the lowest PLT rates being for those originally rated Preferred. Note that all rates converge to an ultimate rate in the future. The dashed line simulates the traditional shock rate.

From an actuarial perspective, the continued-class approach rewards the best risks by raising their rates the least. If properly priced, the rates could be competitive relative to what the insured may expect to be quoted for a new product, at least for the first few PLT durations. Conversely, the worst risks are priced most closely to the YRT ceiling, providing potential encouragement to lapse coverage as the policy becomes increasingly costly. Pricing actuaries anticipate that this approach may help optimize the number of favorable risks to persist.

Additionally, from a risk perspective, actuaries can call upon a wealth of permanent insurance experience to help model appropriate rates for each class as they reach the PLT.

But due in part to its novelty, experience is still scarce, and we have insufficient data to determine how this approach is working in the real world. Post level period jump rates for the best classes would need to be sufficiently low to be competitive with existing preferred rates for new policies, and the convergence to an ultimate rate necessarily implies that the preferred risk's rates will increase at a faster rate than other classes.

Additionally, while we may have a large amount of data on whole life and other permanent insurance to use as a benchmark for pricing, we must understand that purchasing habits vary across product lines—permanent pricing data cannot be used as a direct proxy. Lastly, selective lapsation risk may be highest in this approach, as those originally issued preferred policies who have since suffered an impairment have strong motivations to keep the policy inforce.

Bottom Line: The continuing-class approach seems to be the fairest approach in that is relies upon the select underwriting to determine the magnitude of the PLT jump. However, the structure, also lends itself to the highest selective lapsation risk among the approaches. Only time will tell whether the structure will result in improved PLT profitability.

Conclusion

Level-premium term life insurance introduced an affordable, readily marketable alternative to expensive permanent life and secured its place in the market as a staple product for the consumer. The pricing structure has evolved into a limited pay level premium period followed by a steeply increasing YRT rate scale. With many term products now reaching the PLT, carriers are revisiting the model they built more than a decade ago to determine whether the profitability of these blocks can grow. The wild card in all designs, however, remains consumer behavior: how will the policyowner react to any structural incentives?

CONTINUED ON **PAGE 28**

Unfortunately, by the time we determine the answer to that crucial question, a large portion of business either will have lapsed or be well into the PLT, possibly generating losses. However, carriers are not alone in their search to optimize their PLT blocks. Reinsurers, consultants and other financial institutions are ready to assist in the financial or risk burdens, or both.

Co-Editor Commentary On the Vintage Article, "Better, Stronger, Faster—Life Insurers Confront Product Development"

by Kurt A. Guske

Kurt A. Guske, FSA, MAAA, is vice president and actuary at AIG Global Consumer Insurance. He can be reached at Kurt.guske@aig.com.

The following article was first published in the February 2009 edition (Issue 73) of Product Matters! Elaine shares data and insights with respect to various products' life product development cycle time that are yet important and relevant five years later. Whether your company's venturing in new territory such as indexed interest UL with various differentiating features and index options, or re-pricing products such as level term premiums or in-force post-level term, I hope this informative article will help you understand some of the considerations and potential length of your product development process.

As a side note, the Product Development Section Council is sponsoring research in the area of product development process. Part of the research will focus on industry best practices and draw comparisons with non-industry standard product development practices. Stay tuned for more process content in upcoming Product Matters!

Better, Stronger, Faster—Life Insurers Confront Product Development

by Elaine Tumicki

Elaine Tumicki is corporate vice president, Product Research, LIMRA International, Windsor, Conn. She can be contacted at etumicki@limra.com.

With new life insurance products and features coming out at a break-neck pace over the last several years, life insurers may have felt like they were on a treadmill, with the speed slowly but steadily increasing. The growing reliance on independent distribution requires companies to stay ahead of—or at least keep up with—their competitors if they want to stay on the shelf. Improving speed-to-market has become a key component of life company strategy.

What have companies been doing to address this ever-increasing challenge? LIMRA conducted a study to find out. On average, companies introduced three new products, revised three products, and changed the rates on two in the year leading up to the study. That's eight product development efforts of varying complexity underway over the course of a single year. And several companies had more than double that number. Term products on average have a shelf life of 2.2 years, with some companies reporting a shelf life as short as six months. Universal life is not that much longer, at 2.8 years. Given the ever shorter shelf life for products, it's not surprising that companies are searching for more effective ways to deliver new products to market.

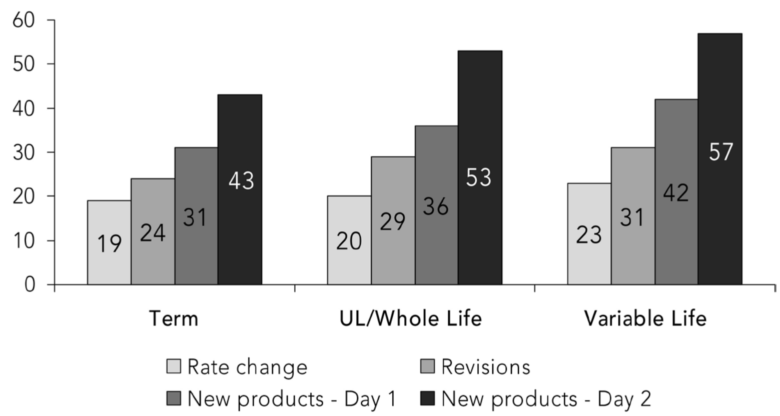
How often do companies evaluate their product portfolio? On average, it is every eight months. The most common interval is annually, with a third of participants reviewing their portfolio once a year. A quarter of participants essentially have a continuous review process, examining their portfolios monthly.

Companies consider many factors in designing new products. Some have more weight than others. What are the top factors companies consider? Profitability is at the top of the list, followed by competition and market-

Product Development Process Length

(average number of weeks)

FIGURE 1

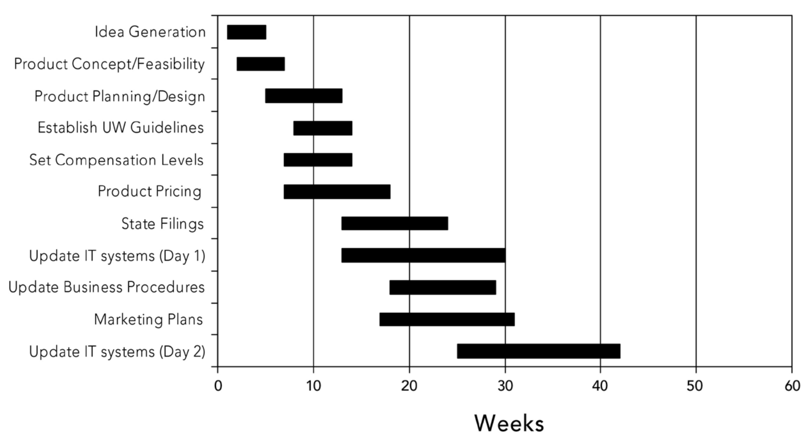


Source: LIMRA, *Individual Life Product Development Process*

Term—New Product

Average elapsed and chronological time

FIGURE 2



Source: LIMRA, *Individual Life Product Development Process*

ability. And companies turn to many sources for ideas. While the product development department itself is the primary source, following close behind are competition units and internal wholesalers/sales departments. The field also plays a role, both formally and informally, with agents considered an important source at about half of participating companies. Most companies evaluate the risks associated with new products. While this exercise is part of the product pricing process, in most companies corporate oversight also plays a role in evaluating risk.

Developing a new product takes time. The more complex the product, the more time it takes. For term insurance, a new product takes an average of seven months from idea to launch. And that just includes Day 1 systems functionality (Day 1 is what a company needs to have in place before the product is released). Add Day 2 functionality and you add another three months to the process. And that's for term insurance. A new variable life product takes nearly 10 months from idea to launch. Add Day 2 and it's more than a year. (See Figure 1.)

The study also documented all the various steps in the process, when each step typically starts and how long it lasts. Updating IT systems takes the longest, followed by developing marketing plans and materials and product pricing. (See Figure 2.)

These time frames include state filings, but not approvals. That adds still more time to the process. For companies selling in all or nearly all states, getting approval for a new product can add seven months to the process. Of course, companies don't have to wait for approvals in all states to launch a product. Companies typically will launch when they have 33 state approvals. Most companies have key states they really want to have before launch. The top three are California, Texas and Florida.

Despite all the challenges, the product development process goes according to plan half of the time. Companies reported major deviations from plan just under a quarter of the time. When there are deviations, what's the cause? The most common is design/pricing issues, cited by nine in 10 companies. IT issues and changing organizational priorities were noted by about two thirds of companies.

But going according to plan isn't enough if the plan isn't achieving desired results. Nearly all the companies in the study had implemented new approaches to the product development process within the past year. The most common change was to have a more formal process, with better planning up front including all the key stakeholders, more controls and sign-offs along the way, quicker identification of problems and ultimately fewer surprises. New technology is also playing a role—a number of companies have introduced automated testing tools to speed up the process.

It's too soon to tell whether these efforts will result in better products, delivered faster. But now that we have a baseline, we can check back in a year or two to see if these new approaches have achieved their desired results. Stay tuned. ◻

SOCIETY OF ACTUARIES

Product Development Section

475 N. Martingale Road, Suite 600
Schaumburg, Illinois 60173
p: 847.706.3500 f: 847.706.3599
w: www.soa.org

Product Matters!