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Visions For The Future

Of The Life Insurance Sector

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Introduction

On behalf of the Financial Reporting, Product Development and Reinsurance Sections of the Society of Actuaries, we are pleased to present the top 10 essays selected from those submitted by members of the Society of Actuaries in response to: **Life Insurance 2020 Foresight – A Call for Essays**. The call was open to all members of the Society of Actuaries as well as affiliate members of the sponsoring sections.

The current economic crisis that dominated the news during 2008 and 2009, the expansion of technology, changing accounting standards, access to capital and changing demographics are some of the challenges to the life insurance sector. Thoughtful visions of the future provide a catalyst for dialogues that can shape what should be and what could be the future of the life insurance sector. The sponsoring sections initiated this call to stimulate and expand those dialogues. Each author submitted a short essay in response to the following questions.

- What is your vision of a financially sound, operationally efficient, growing and profitable company operating in the life insurance sector in the year 2020?
- What are the critical issues that this company must address between now and 2020?

The authors provided stimulating and thought-provoking insights into the future state of the life insurance industry. There are many challenges and opportunities that face the life insurance sector. While there is no one perfect vision of the future, actuaries can provide insightful views that meet the challenges and maximize the opportunities. Their deep understanding of the complexities and the risks uniquely enables them to envision the future.

Monetary awards were presented to four authors for their outstanding papers:

Ken Beckman, *Risk Management For The Individual: The Key To Life Insurer Success In 2020 And Beyond*
Chiu-Cheng Chang, *Adjustable Biological-Age Pricing For The Global Market*
Sharon Giffen, "*Sustain*"*: An Industry Speech About Success As A Niche Player In 2020*
Maria Thomson, *Industry Will Experience Zippy Growth Through Zip Processing*

We hope you will enjoy reading the essays and taking time to reflect on your vision of a financially sound, operationally efficient, growing and profitable company operating in the life insurance sector in the year 2020. We believe the thought leadership exhibited in this collection of essays will motivate you to be involved in the management of your company and the regulation of the life insurance sector to create solutions on the way to reaching your vision.

Sincerely,

Steven Malerich, FSA, MAAA, *Chair*
FINANCIAL REPORTING SECTION, SOCIETY OF ACTUARIES

John Currier, FSA, MAAA, *Chair*
PRODUCT DEVELOPMENT SECTION, SOCIETY OF ACTUARIES

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REINSURANCE SECTION, SOCIETY OF ACTUARIES

Note: *The thoughts, insights and opinions shared in these essays are not necessarily representative of the views of the Society of Actuaries or the authors' employers.*

Insurance Companies In 2020

by John Aprill

A financially sound, operationally efficient, growing and profitable company operating in the insurance sector in 2020 must have the following attributes:

- It must KNOW its customers and its production system.
- It must KNOW its risks and how it will address its risks BEFORE they actually occur.
- It must be nimble.
- It must grow real profits from the current products it sells.
- And most importantly, it must be able to integrate each of these cohesively.

The Company Of 2020

Knowledge Of Customer

This has several dimensions. It must deal with today's known risks and tomorrow's unknown risks. Scenario testing will only be a starting point; the real test must be in the extremes. The action plan must also be specific for the next quarter and next several years. There will be no forgiveness for a solution that addresses a problem in one period and falls apart in the next reporting period.

The company cannot guess what its customers want nor hope that the products it produces will be welcomed in the marketplace; it must know its customers and their needs and it must create products that its customer base will purchase. The insurance company must be able to produce a product batch of one—a broker or agent selling one contract to one individual. This is not the generic term product nor is it the asset.

Also, it must be totally attuned to the changing social mores. For examples, baby boomers are about to retire and will create the largest group that will CHANGE the way we retire and die. Over the next 10 years, there will be profound changes to the way retirement and life choices are considered. The main thrust is the baby boomers moving through the later stages of life. This will have an impact on both the insurance risks and equity investments.

Investments will change. Equity product pricing will decline. The normal price to earnings multiples will decline. Why pay for 10 years' worth of future earnings if we can no longer predict how long an organization will remain in business? This will reduce the value of stocks. To increase portfolio yield, there will be a need for speculation, which will encourage assets moving into small- and medium-sized companies.

Instead of a large group of people saving for retirement, the assets will be cashed out. This will put pressure on asset prices, as the number of retirees increases relative to the purchasers of assets.

Insurance risks will change. There will be continuing discussion of the quality of life and whether death is an appropriate alternative to a poor quality of life. This has come to the forefront in recent health care discussions—is a hospice more appropriate than continuing medical care? Death may no longer be determined by medical doctors. It will be determined in part by each individual. We already see signs of this occurring—the growth of hospices, individuals taking charge of their medical care and, regrettably, the high cost of a final illness.

This might mean that the mortality experience for the older ages may be worse than expected and pricing will need to reflect it. Before it does, the impact will be a loss to life insurers and health insurers (especially Medicare), a gain to retirement and social security.

Knowledge Of Risks

This group may not live as long as originally priced. Many pricing models assume mortality improvement over time. But what happens if the mores of the population change to remove the social stigma of an earlier death than medicine would allow? And, how quickly would our pricing models adjust to this change?

Insurance Companies In 2020 *by John Aprill*

The nature of financial shocks and their frequency will accelerate. Why? Because there is such fear concerning the current financial fiasco, there will be a need for greater amounts of hedging, even at the individual level. As individuals move to a specific solution, the mass exodus risk may not be considered. So, if everyone heads for the exit doors at the same time as occurred in portfolio insurance, the hedging will fail and result in a market downturn. Also, individuals do not always act in directions that may be rational, which may cause market anomalies for little apparent reason.

A Nimble Company

It must be able to move quickly from one product to another or one distribution system to another. It must contemplate an exit strategy and be able to execute it. It cannot commit to a strategy that may become obsolete in a short period of time. It cannot have the huge costs to exit that exist today.

In the present economy, we have learned that organizations that become too large are not good for the economy because if there is a failure, the impact is huge. This philosophy will be carried out through capital restrictions and no doubt through the anti-trust policy preventing new large institutions by disapproving them. As a result, we should expect to see many more small- to mid-sized organizations. These organizations will be able to react quickly to changes in the environment and not be subject to legacy issues discussed below.

Profits From Products Currently Sold

This means the profits must come from the products that are sold today, rather than the products that were sold generations ago when interest rates were low, mortality was decreasing, and expenses were decreasing products. This is the often ignored revenue portion of the balance sheet. To meet profit goals today, costs are cut; to meet profit goals in the future, the profits must flow from the products sold today. And the increasing revenue stream means increasing profits. Only with a thorough knowledge of the customer base and the risks insured is this possible.

An Integrated Company

Each of these items is a formula for success if applied at the same time, and yet a formula for failure if applied selectively. It is possible to know your customers intimately and deliver products that meet their every need, but if they are not profitable in the near term and the long term, the company cannot be successful.

Critical Issues To Be Addressed

The critical issues that must be faced are the workforce, technology and legacy product administration.

Workforce

The workforce will continue to be an issue. There will be an increasing need for actuaries, but it takes time to produce new actuaries. Baby boomer actuaries will retire, reducing the workforce at the same time that the need for actuaries will increase. This may increase actuarial salaries over the short term, but it will also increase the workload for actuaries.

This is a good news side to the workforce equation. Actuarial work and evaluation of risk exposures have become extremely sophisticated and require thousands of iterations. The time frame for reporting has progressively shortened. Systems can only take the process so far. At some point the human element is required to explain what has taken place and what actions are needed to resolve them. There will be a need for experienced actuaries to work. This is the perfect job for experienced “retired” actuaries.

Technology

Technology has moved forward to make production faster and has also made testing feasible, but it has not addressed a fundamental issue—instant results are not always understood and may not be actionable. The development of artificial intelligence systems is needed to assist the human component, but these systems are not there yet and will not be fully functional over the next 10 years. Insurance companies will be spending a lot of research dollars to achieve this goal.

Legacy Product Administration

Legacy product administration will become even more burdensome than it is today. Imagine another 10 years of product development that must be administered even if only one product is sold. Whenever an administrative system or valuation system must be updated, every product must be moved. This will benefit newer companies without legacy baggage over companies that have been in business with generations of legacy products.

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Keeping The Promise

by Dennis R. Barry

In order to imagine the outline of a successful U.S. life insurance company in the year 2020, it's important to think for a minute about what the world in which that company operates will be. There are a lot of possibilities for nearly every aspect of life in the United States, but one demographic fact above all others has potential to dominate the landscape. In 2020, almost half of the baby boomers will be on Medicare and nearly all will have reached an age at which retirement is either a current reality or a rapidly approaching one. The implications are many, and some are ominous:

- Pension plans, which for many, many years have been major buyers of stocks and other securities in this country, will be in or near liquidation status where investments will be sold rather than bought. The effect on the securities markets may be profound.
- Governments which have the responsibility of paying for the promises made in earlier, less demographically challenging times, will be cash-strapped, more so than today. State and local governments will face daunting problems relating to pensions and retiree health benefits for their workers, as will the federal government but with vastly differing means of financing the liabilities.
- The Social Security system in total, and Medicare specifically, will be facing severe financial problems.

All these issues will threaten the social contract under which we've operated for a long time. In that setting, with so much of life in flux for all generations, and with all of society entering rougher and more uncharted waters each year, the life insurance company that will be successful is one that can market, manage and deliver on guarantees. Making and keeping promises will separate the successes from those that don't last. This position is nothing new. Insurance has always been the vehicle that promised a result to its customers and delivered it. But along the way, we thought that in order to compete with other financial institutions we needed to look more like them and less like our traditional selves. The years 2020 and beyond should refocus both our customers and our companies on the value of meaningful long-term guarantees.

A successful guarantee business requires three distinct focuses as the business develops:

- Choosing which of life's risks to insure and how to do so,
- Managing the assets and liabilities until the guarantee comes due, and
- Making good on the promise.

The first of these focuses is essentially the marketing function. Insurance companies choose which business(es) to be in, find adequate capital to fund the business, and then develop and market products. Marketability will depend on finding a delivery system that can sell the promise at a price that is both attractive to the customer and sustainable for the insurer. There's nothing magic here. This is what insurance companies have done for well over 100 years. But in the past few years, guarantees have lost ground to the sexier market-based financial products that, because of their (sometimes) spectacular performances, made guarantees seem stodgy and unnecessary. Why go for a low-return guaranteed product when you can buy a market-value product that will greatly out-perform it over the long haul? Of course the answer is that in the short haul, which is where we actually live, things aren't always quite so rosy, but except in times of pronounced volatility people tend to forget that fact. The demographics of the third decade of this century look likely to have a negative effect on stability in a lot of things.

The second focus, managing the promise, is fraught with difficulties relating to risk management. There are obvious financial issues. How best to fund a particular promise—the old fashioned way, via conservative investments that over time bring the desired yield and preservation of capital, or via hedging and other financial strategies that rely in part for their success on the financial stability

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of a variety of counterparties? Or perhaps it is a mix of the two, or an approach that has not yet been used for these types of products. The financial approach to products offering meaningful guarantees will require decisions that are complex, difficult and very important. Beyond the financial aspects of guaranteed products, how sure are we that the promise itself won't change over time? For life insurance, it used to be that dead was dead. Now medical technology can keep alive someone who a few years ago would already have come to the end of life. A simple promise to pay at death has become somewhat fuzzy. Other forms of guarantees have similar risks. A court decision that changes the meaning of a well-established provision of a long-term care policy could wreak havoc on that line of business overnight. The same goes for critical illness policies, disability and many others. Only payout annuities seem somewhat secure, but as mentioned above, medical technology can affect longevity, in both directions. The bottom line is that, except for the very simplest forms of insurance, it isn't certain that the promise assumed at the beginning of an insurance policy is what will eventually have to be delivered.

Which brings us to the final focus: delivering on the promise. The simple "you die, we pay" premise of a life insurance policy reflects the ultimate delivery on this contract. Along the way, a lot of things may have happened to both parties to the deal but at the death of the insured, the insurer must pay. For other forms of insurance, and their guarantees, things are not so simple. As noted above, a court decision can undo many years of practice in a particular line of business. Think of the potential legal risks inherent in a long-term care policy where any or all of the activities of daily living can be redefined by a court at any time or where changes in methods of treatment can radically change what long-term care means. Consider the effects of the current economy on disability coverages. Or what will happen to lifetime income guarantees if life expectancy takes a leap because of medical advances involving bionic parts and transplants that are unthinkable today? Being in the guarantee business means that no matter what happens, for better or worse, the insurer must deliver on the promise when the time comes, even if the promise has changed in the meantime. Making that come true will require that premiums, reserves and insurance company capital levels be realistically conservative and not just optimistically adequate. The guarantor is going to have to be able to survive the thousand-year rain, even if it occurs twice in five years.

Guarantees are what set insurance companies apart from other financial institutions. In the insurance world, however, life insurance companies are unique in the length of time over which their guarantees may apply. A life insurance policy, issued on a newborn in 2020, could well be in force in 2120, and if there are settlement options available, it could still be delivering on a guarantee many years into the 22nd century. That uniqueness offers insurers an opportunity to fill a product/marketing gap that no one else can fill, but it also requires the discipline to recognize that this different financial role carries with it different management responsibilities. Selling guarantees must ultimately be secondary to delivering on guarantees.

Life insurance companies may have to compete with other financial institutions in the capital markets, but doing so cannot be at the cost of abandoning their unique ability to offer the guarantees that no one else can. Guaranteed products can be priced for returns that are competitive with other financial products, but it may take longer for them to bear fruit. Guarantees that last 25 or 50 or 100 years do not lend themselves to a management style that focuses on quarterly earnings. It isn't realistic, and it isn't prudent. If insurers take advantage of their unique market, and manage their products and businesses appropriately, the rewards will be there, eventually, for all stakeholders. But if for the capital markets, "eventually" isn't satisfactory, then it may be that the surviving, successful promise sellers of 2020 and beyond will be the remaining large mutual life insurance companies who can, if they stick to the markets

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they know best, generate the capital they need on their own.

Life insurance, like all businesses, offers unique opportunities and challenges to the companies manufacturing and marketing those products. Like other businesses, success will come to those that take advantage of their opportunities and deal most successfully with their challenges. Time will tell, but betting on the success of life insurance companies whose marketing and management focus is on the guarantees that are unique to their charter seems like a good choice.

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Risk Management For The Individual: The Key To Life Insurer Success In 2020 And Beyond

by Ken Beckman

Enterprise risk management continues to be a major focus in many industries and the life insurance sector is no exception. In fact, an insurance company's future survival is highly dependent upon the ability to successfully manage its various risks. However, to thrive and not just survive, an insurance company must take advantage of its expertise in risk management by also addressing the risks faced by its individual customers in a much better and more comprehensive way than is done today. This can be accomplished through the development of a single product that will allow individuals and families to simultaneously identify and manage the risks encountered over a lifetime. Companies that can successfully develop such a product will see profitable growth and become the dominant force in the life insurance sector of the future.

The value derived from human capital allows individuals to meet basic needs such as food, clothing, housing, education and health care, both during the working years and in retirement. The three primary risks in attempting to meet these needs are:

- Mortality (premature death and longer than expected lifespan),
- Morbidity (disability, extended later life health issues requiring assisted living and long-term care and conditions currently covered by comprehensive health benefit plans), and
- Investment risk (the risk of loss to retirement and personal investments).

Although these risks are well known, for a variety of reasons individuals often do not or cannot protect themselves. For example, assuming one saves enough of current earnings for retirement, investment risk is still a large obstacle in achieving a desired retirement income. This risk has increased recently by the rapid decline of defined benefit pension plans. Most participants in defined contribution plans have limited investment knowledge and often make unwise choices when investing large sums of money. Even those who receive investment advice or choose life-cycle funds have no guarantee that future required returns will be achieved. Although certain complex and costly option strategies could be employed, there is no product that currently offers an easy-to-understand and affordable way for the average person to purchase insurance protecting the value of retirement or personal investments.

Furthermore, even though the insurance sector currently does offer a vast array of products to mitigate mortality and morbidity, separate policies must be researched and purchased to cover the variety of risks that exist. For example, to protect against the morbidity risk one would need medical insurance, disability insurance and long-term care. Consumers and their agents spend valuable time trying to understand and compare features and costs from a laundry list of products rather than making optimal risk-based decisions that maximize insurance protection and minimize cost. This is due to both tradition and regulation, but it results in many consumers feeling frustrated with the process and purchasing products they may not fully understand and that do not efficiently cover all the primary risks. Without any significant industry change, as technology improves the ability to compare costs and product features, the insurance products as offered in today's market will become commodities, limiting opportunities for future growth.

To grow in the year 2020 and beyond, life insurers will need to become personal risk managers for their customers rather than just a place where insurance policies are sold. Successful companies will offer a policy that provides comprehensive risk management services for individuals and families. The product will offer lifetime protection from all the primary risks in a single insurance policy using the following coverages:

- Life insurance,
- Longevity insurance (i.e., guaranteed lifetime retirement income payments),
- Disability insurance,
- Long-term care insurance,
- Investment insurance, and
- Medical insurance (contingent upon the outcome of national health reform).

An interactive system, using the latest technology, will be used to obtain demographic, financial, health and other information. The system will then use this information to explain to applicants the implications of the primary risks they face, both at present and in the future. Next, customers will be provided with a menu of several possible insurance policies to choose from, with each policy offering protection from all the primary risks, but differing in cost and the amount of coverage provided. All the policies on the menu would be optimized, based on the applicant's risk tolerance and other variables, so that regardless of the policy selected it will provide the best possible coverage at the lowest possible cost. To achieve optimal protection, the coverages contained in each policy would be expressed in flexible terms. For example, the amount of life insurance would vary over time (possibly reaching zero coverage at some point) and correlate with specific factors such as income, family status, other assets and tax considerations.

For each policy being considered, the system will illustrate the impact on an applicant's projected future net income and net worth under a variety of scenarios. These scenarios would be designed to show prospective insureds that insuring for more risks (rather than fewer) and insuring for these risks sooner (rather than later) provide the maximum protection at the lowest cost. For example, the scenarios would demonstrate the advantages of funding long-term care throughout an entire lifetime, increasing the proportion of young insureds that currently have long-term care coverage. If this strategy is successful, it will provide a company the opportunity to expand the size and diversity of its risk pool, reducing the average cost of coverage for all consumers.

Even after the policy is issued, the risk management system will allow the insured to view updated illustrations as circumstances and risk tolerances change. The system would continuously monitor changes in the family's risk exposure and notify the insured of coverage adjustments that might be needed. Selected coverages could be modified at any time. The actual product details may vary from company to company, but the main objective is to enable individuals to fully understand the risks they face and provide an efficient and effective way to protect them from as much or as little of that risk as desired.

In order to create a risk management product for the individual and make sure it is financially sound, many issues must be addressed. First, companies need to dramatically improve existing enterprise risk management practices. Regulators, the public, and company management must all be confident that companies will be able to handle the additional risks they are accepting. Companies that are successful should benefit from a larger pool of offsetting and uncorrelated risks, providing a reduced net risk exposure and an improved ability to absorb future extreme unexpected events.

Pricing for morbidity and mortality risk can continue to rely on actuarial principles, but must go further by considering the combination and interaction of risks at the individual and family level. Pricing at this level will make coverage less expensive compared to insuring each risk individually with a separate product. In addition to pricing traditional risks in this new framework, actuaries and other insurance professionals must also evaluate and profitably price risks that are very prominent, but have not commonly been insured. Specifically, the risk of decline in retirement investments will need to be addressed with investment insurance using both existing and new techniques. This coverage might guarantee a minimum return over specified intervals, such as a 3 percent return on a stock mutual fund at the end of 20 years. Risk-based pricing would be used so that insuring riskier investments and having more generous guarantees would cost more.

Marketing must be modified to better educate the public about these risks that imperil the financial health of individuals and families. For this product to work, the public must understand it is more effective and less costly to address these risks at the household or individual level rather than in piecemeal fashion through a variety of separate policies. Underwriting must be flexible and timely, while avoiding anti-selection. By 2020, technology and electronic commerce will have advanced rapidly, and companies must fully utilize these new technologies in all aspects of the marketing and administration of this new product. Finally, the costs for improved risk management, pricing, underwriting, marketing and administration all must be kept low in order to provide greater insurance coverage at a lower cost.

Companies, regulators and other interested parties have all recognized the need for insurers to manage their own enterprise risk, but the industry now needs to focus its efforts on managing the risks of individual customers. As the leading experts on risk and insurance, actuaries must take the lead in promoting this concept to company management and employees as well as with regulators and the public. If companies can begin to demonstrate they are helping manage the risks faced by individuals and families in a comprehensive manner while remaining financially sound, the existing regulatory and other barriers to change will dissipate. A successful implementation of an individual risk management product will give the actuarial profession a great opportunity to fulfill its responsibility to the public and provide a solid foundation for a thriving life insurance sector of the future.

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Life Insurance Views For 2020

by Bruno Caron

Our society has gone through significant changes mainly due to technological advancements in the past decade. The Internet has helped insurance companies promote their products and has made it easier for customers to make more informed decisions, but has the life insurance industry fully grasped the available modern technology to become as efficient as possible? On the other hand, will fundamental values such as transparency and honesty ever become obsolete? In the next decade, successful firms will, in the author's opinion, have to combine those two forces in order to do well in the long run.

Efficiency And Use Of The Internet

Through information availability and education, the author believes that, as years go by, individuals will become more aware of their life insurance needs. Also, more insurance shopping tools should be available to customers. The old saying, "insurance is sold, not bought" may not be as true as it has been in the past.

The Internet has revolutionized multiple layers of modern society. As information becomes more available and the execution of transactions becomes easier, the author anticipates an increase in the use of Web sites for selling insurance. Web sites providing insurance premium quotes are already abundant, and some Web sites have already started selling insurance online. A challenge for those Web sites is to patiently build a strong reputation, so that individuals will have the confidence to buy insurance through this distribution channel, the same way travelers now buy airline tickets through traveling Web sites, although they may have been less inclined to do so when online travel Web sites were in their infancy. Also, commercial life insurance companies would have an advantage to start selling insurance directly from their Web site. Life insurance shoppers could get the coverage they want and the appropriate riders online, similar to the way customers can customize their purchase when buying computers online. The need for agents selling insurance policies would therefore decrease, just like the use of travel agents has decreased in the past decade. This more efficient way of selling insurance would allow insurers to offer products at a more competitive price, and the necessary technology is already available. The one area where the author does not foresee a decrease in the use of agents is where the face amount purchased is very high and where there are estate planning or complex tax issues associated with the insurance purchase.

Insurance Reward System

The idea of an insurance company reward system, similar to fidelity programs offered by airline companies and major hotel chains (but hopefully more effective), could see the day. Points could be earned by policyholders in proportion to premiums paid and used to buy other insurance products or to get additional coverage or riders. From the insurance company's perspective, such a reward program would increase persistency, awareness and loyalty in policyholders. Such a reward system would benefit both parties and strengthen the relationship between the policyholder and the insurance company.

Regulatory And Taxation Issues

The individual tax treatments of inside build-up will play a critical role in the cash-value-oriented products. Although cash-value-oriented products offer multiple advantages, one of the most sought-after features of such products is the very advantageous tax treatment of the earnings of such products. Some cash value products serve as a second 401(k) vehicle. Regulators' views and future actions are very hard to predict.

Regulators serve and protect individuals by making sure that insurers have enough funds to meet their obligations. It is natural for them to impose strict requirements and use conservative assumptions to evaluate liabilities in order to protect the public. Having said that, proscribing unreasonable reserves and capital requirements usually does not serve the population well. It typically results in insurers finding ways such as securitization and offshore reinsurance agreements to get around such requirements. Principle-based reserving is already at the center of multiple Society of Actuaries' task forces, and implementing these requirements will be a challenge for both carriers and regulators, but the author believes that this approach will be beneficial for society in general in the long run, as the focus will appropriately be on the obligations of the insurer to meet its contingent liabilities. Currently, a great deal of effort is put in finding solutions to bypass excessive requirements. Those efforts and resources could be used elsewhere or simply removed to offer a more competitive product.

Shareholders

Shareholders of life insurance companies, just like shareholders of any other corporation, are in a constant quest for more and better information. Transparency to shareholders is definitely a positive aspect for an organization as a whole because it ultimately enables the providers of capital to make better investment and risk choices. This usually translates into more disclosure on a firm's activities. This is typically helpful for investors, but the information disseminated must be done in a manner that makes the information understood and is of value to investors and analysts. The successful insurance companies of the next decade, in the author's opinion, will disclose not necessarily more, but more concise and pertinent information, to the public.

Fraternals

In the light of the recent corporate scandals and lack of transparency, the public, rightfully or not, has a low opinion of corporate leaders in general. This may be an opportunity for the fraternal industry to surge. Usually challenged with the lack of economies of scale compared with regular insurance carriers, fraternals have an unprecedented asset: an impeccable record of transparency and honesty. Fraternals provide a valuable service to society through multiple social programs and charitable sponsorships. If the movement becomes better known to the public, some policyholders may be interested to contribute to this if they pay similar prices, and fraternals have similar ratings as commercial carriers. Also, fraternals get a special tax treatment. Can fraternals use their tax advantage and good reputation to compete with economies of scale of commercial carriers and offer similar prices as well as achieving good ratings? Can they reach out to a broader public? If the answer is yes for the two interrelated questions above, policyholders may turn to fraternals to meet their insurance needs, which would significantly increase the fraternal presence in the life insurance industry in the next decade.

Securitization

Securitization in the life insurance industry took many different shapes and served different purposes in the past. The author believes in the added value of securitization in the life insurance industry in general and sees a demand from both sides. First, the originator (in this case the life insurance company) would benefit from removing some mortality risk from their book, forgo some return in order to write more new business and make a profit on originating policies. Second, the capital markets would welcome a way to diversify equity and interest rate risk, as mortality risk is a random risk that is uncorrelated to those two risks. Past securitization arrangements have involved many parties and have been very costly. In order for securitization deals to be successful in the future, they will have to be simpler, cheaper to implement and more transparent, and target a broader market. Securitization would ultimately transfer some of the mortality risk of the insurer to an outside investor. Simplicity and cost are important because potential investors are attracted to a new risk, but obviously for a reasonable return. If the cost

Life Insurance Views For 2020 *by Bruno Caron*

of the issuing security reduces the potential to earn this return, the whole securitization concept is pointless. Also, insurers always have the reinsurance option to transfer risk or hedge it one way or another. In order for securitization to be effective, it has to be done at a comparable cost to reinsuring mortality risk; otherwise, there is no incentive for the insurer to securitize. Transparency is another key element; investors want to be able to evaluate the risk into which they are getting. A black-box-type security is usually not attractive for investors. Finally, volume is another key component of a successful securitization to reduce the cost per security and add liquidity in the market in which it is traded. Successful firms of the upcoming decade will have securitization as an available option. Details and technicalities of such securitization agreements are beyond the scope of this essay.

Conclusion

Transparency and efficiency are the common denominators of this essay. In the end, both firms and customers will benefit from an alignment of these objectives. Also, reputation will always remain a crucial ingredient to the success of a life insurance company. It is not something that can be coded overnight. Transparent contracts (without overly complicated details, upfront fee schedules and no unpleasant surprises) as well as investments in technology are among matters a life insurance company will have to put efforts in to establish and sustain a strong reputation and be successful in the long run. These undertakings can be costly initially, and it is a challenge to remain competitive while assuming these costs. But these factors will ultimately draw the line between the key players of 2020 and the life insurance companies of the "past."

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Adjustable Biological-Age Pricing For The Global Market

by Chiu-Cheng Chang

Just as stated in the Call for Essays, we are witnessing an evolutionary shift in almost every aspect of the life insurance industry. The demographic profile of our primary client base is changing. New distribution channels are emerging. We are even changing the way that we assess and manage risk.

There are many active participants in the life insurance industry in addition to life insurance companies. The line between financial service companies has blurred. Risks are written in one market and shifted to other markets, or combined with other unrelated risks as a means to mitigate risk. Operating in a rapidly changing global economy adds a level of complexity to the management of life insurance companies.

The Call for Essays emphasizes the need for the life insurance industry to continuously adapt in order to be in a position to effectively and efficiently operate. It is because of this emphasis that I feel obliged to write this essay to present my view of "Life Insurance 2020 Foresight."

Pricing life insurance products equitably has been a great challenge to our industry. From the time when a combined male and female mortality table was used to the time when male and female distinct tables are used, we have also come up with various risk classification methods such as the use of levels of substandard risks and preferred risks, smokers versus nonsmokers, etc. Although it is well known that married policyholders have much better mortality rates than those of unmarried, and the differences are just as large as those between smokers and nonsmokers, it seems that no life insurance company has used this factor to further classify risks. One wonders whether it is too cumbersome to trace married versus unmarried status.

In 1992, I presented a paper titled, "Mathematical Approaches to Estimate Human Biological Age" to the 24th International Congress of Actuaries (ICA) in Montreal, Canada (*ICA Transactions* Vol. 4, pp. 401–406). For that paper, I used a large volume of World War II data of Japanese survivors from the atomic bombs. About 20 physiological variables were used to determine a person's biological age.

Time flies, and technological advances exceed our expectations. Today we have medical devices (scans, scanners, tools, equipment, etc.) that also utilize about 20 inputs (variables, indexes, measurements, etc.) to calculate human physiological (biological) ages. These devices are noninvasive and so simple to use; they are truly handy and convenient. Moreover, many studies conducted by the manufacturers of these devices confirm that the calculation results are very much consistent with today's common knowledge regarding, for example, healthy lifestyle. In other words, we can predict, based on those 20 variables, whether one's biological age will be more or less one's chronological age before we actually measure it. I feel that these devices have achieved what I had envisioned in my 1992 paper: A human being's true biological age should be measurable or at least closely estimated, and every human being should have two (most likely) distinct ages—a chronological and a biological age.

The traditional approach to pricing life insurance products on a single fixed age over the entire policy duration is clearly outdated. Policyholders could change from being a smoker to a nonsmoker or vice versa; from being obese to overweight, then to standard weight; to a preferred risk or in reverse order, from being a substandard risk to a preferred risk and vice versa; from being married to divorced to remarried to divorced to becoming single; or any of all the possible mathematical combinations of the above and beyond. Clearly the traditional approach is not suitable to today's highly dynamic and rapidly changing global lifestyle since it is considered piecemeal, unsystematic, static, short-term, local, regional, less scientific, too cumbersome and non-global.

Adjustable Biological-Age Pricing For The Global Market *by Chiu-Cheng Chang*

Pricing life insurance products according to one's biological age (supplemented by well-established but simple underwriting tools if necessary at the very beginning of 2020) is simple, systematic, dynamic, more scientific and global. It is nothing but a simplified and unified approach to traditional risk classifications. It may also be viewed as a clear-cut summary or a very condensed form of traditional multiple sets of mortality tables. Using modern medical devices to measure one's biological age, we can see very clearly that throughout one's lifetime one can definitely and significantly decrease or increase one's biological age versus one's chronological age. One important but perhaps forgotten social (now global) function of the life insurance business is to change policyholders' behavior for the very benefit of the policyholders themselves. Pricing according to biological ages can rekindle and highlight this function most effectively.

More than 30 years ago, life insurance companies used a single fixed interest rate to price life insurance products over the entire policy period. It was truly revolutionary when the life insurance industry replaced a single fixed interest rate with floating (variable, adjustable) interest rates for pricing purposes just as other financial service industries adopted floating interest rates for all financial transactions. What I am suggesting now is nothing but to catch up with the transition from a single fixed interest rate to floating interest rates: a new transition from a single fixed chronological age to dynamic adjustable biological ages.

This new transition is expected to become more intense in a time of rapidly intensified economic globalization for the following reasons:

1. Today's human beings are undergoing much faster and more intense changes throughout their lifetime than at any time in history; the more intensified the economic globalization, the more so. These changes will be reflected in one's biological age most directly and effectively. This is because biological age is so dynamic; it is unlike chronological age, which is fixed and static.
2. Because of the deterioration of the environment, work-related stress, unemployment, financial crises, natural disasters, etc., many old and new diseases and ill health are attributed to unhealthy lifestyles. In fact, a growing number of researchers have even concluded that all modern diseases are lifestyle diseases. And far more people are now paying much more attention to the relationship between their lifestyle and their health. Since biological age is such an effective indicator, people will be using it more intensively.

Armed with the adjustable biological-age pricing tool, life insurance companies can then target the global market simply as never before. To envision how such a biological-age-pricing scheme may end up globally in 2020, let us first look at the automobile insurance market in California where auto insurers use about 20 variables (including high school GPAs) to price auto insurance premiums for young drivers. All the drivers have to do is to keep calling various insurers until they are satisfied with the best offer they can get. Similarly in the United States, where large amount term life insurance premiums are highly competitive, potential buyers shop for the best offer just like the young drivers in California shop for auto insurance. Finally, today's Internet is booming with all sorts of similar auctioneering approaches to buying and selling.

I envision the future life insurance market with the adjustable biological-age-pricing scheme will look like those phenomena I describe above. Obviously, we have to deal with a number of issues between now and 2020 as highlighted below:

1. Find a base (state, country, nation, territory, legal entity, tax haven, etc.) where the insurer is allowed to issue policies using biological age for pricing purposes.

Adjustable Biological-Age Pricing For The Global Market *by Chiu-Cheng Chang*

2. Work closely with regulators in various jurisdictions worldwide convincing them that adjustable biological-age pricing is nothing but a simplified and unified version of the traditional but much more complicated risk-classifying scheme. Once a regulator is so convinced and approves the sale of a biological-age-priced product, it is expected that other regulators will follow suit just as smoker versus nonsmoker distinct premium rates have experienced.
3. Work out in great detail a global underwriting manual covering the medical devices to be used, the underwriting procedure and process to be followed, all the safeguards to be employed, etc.
4. Establish a detailed but effective system to evaluate policyholders' requests for a change of their biological age. Since the devices are simple to use, the system will help push policyholders to lead a very healthy life-style, which in turn will bring about lasting benefits to all parties concerned.
5. Establish a sophisticated system (paralleling to the system used to support floating interest rates) to effectively and adequately support dynamic changes in the biological ages.

The adoption and popularization of the biological-age idea will have profound effects on the whole world. I will cite a few in the following:

1. We need a new definition of normal retirement age.
2. We need to redesign pension plans.
3. We need to redesign annuity products.
4. Since upward mobility is part of human nature, we will witness a healthier world with higher and longer human productivity contributing to the global good.

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"Sustain": An Industry Speech About Success As A Niche Player In 2020

by Sharon Giffen

It is with great pride that I speak to you about our fraternal benefit society, The American Society for Sustainable Living or "Sustain." How did we surpass our own expectations for success over the past decade?

Some background—Sustain sells life insurance to support our members' families in times of great need; in turn, the tax-free profits we generate are dedicated to furthering our mission of enhancing America's desire and ability to lead lives that will sustain our planet. Re-greening of the earth is a goal we can all relate to today; Sustain sponsors activities, programs and education to engage member families to change their daily lives. Living a "greener" life has become increasingly popular since the turn of the century; people are willing to volunteer and to pay more for goods and services that support sustainable living.

In the last 10 years, virtually every facet of our business has changed—distribution and administrative operations and, importantly, how we assess and manage risks to better use our capital.

In 2010, we committed to truly align every activity to our mission. Our market demographic is the Internet generation who transact their personal business and social lives online, and who want to contribute to sustaining our earth for future generations. This is the middle-income market—ordinary people with straightforward insurance needs. With a low average face amount and premium and a limited product line including term and whole life insurance, we had to become a low-cost provider to survive.

Armed with that vision, we retooled our new business and administrative processes to automate everything possible. In 2011, we introduced electronic applications—the application is completed online during the sales call. We used tele-underwriting during the application process along with electronic underwriting tools. With that, we achieved about 50 percent of issues requiring no further intervention. In 2013, we introduced artificial intelligence (AI) into the process, reducing to 5 percent the applications that cannot be processed automatically. For those cases, the judgment of a skilled underwriter is needed; we buy that expertise from a service provider on a variable cost basis. From 2015, we eliminated the need for a sales intermediary—applicants can complete forms themselves and now 75 percent of applications are submitted directly. With real-time processes, once the application is complete and pre-authorized deductions from their bank account are set, clear cases are issued electronically. Formal contracting is complete upon receipt of their biometric signature using the retinal scan software that has become standard for online identification. Compliance monitoring is easy; AI won't misbehave, and electronic records are complete. Misrepresentation is reduced, as AI is persistent to ensure consistency of electronic health data and answers to questions.

Post-issue service is almost exclusively self-service, online in real time—but there are exception cases. In addition, we have legacy business, administered on an old system, requiring some service staff. We built some automation to front the old system, and will let it run off there.

To achieve all this, we have invested significantly in technology and AI. Looking for early payback, we found that in-sourcing allowed us increase volume quickly. Today, we are one of the leading industry providers of the electronic "application-through-issue" process. Our partner companies are typically small. We can charge a variable cost above our marginal cost, but still below industry average. Our partners retain in-person services, keeping control of live customer interaction.

Distribution has evolved in concert with our processes. Only a decade ago, we were in the independent agent market, competing with other providers for market share. Our mission was interesting to them, but not sufficiently compelling to sell at a higher price or to reduce their commission demands. We were incurring high marketing

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costs including the travel necessary to attract distributors. This was not well-aligned with our mission and is no longer a source of sales.

A small group of brokers embraced our mission and became dedicated to us. These personal producing general agents (PPGAs) sell to and service our customers who want the personal touch, generally delivered by voice or video, and they assist in their local communities to deliver the "Sustain" programs. For this, we are happy to pay their commission expectations.

Early on, we experimented with social networks, such as Facebook. These avenues provided some success at raising awareness—people were drawn to our mission—but no sales traction resulted. That changed in 2015 with the commercialization of Second Life, the virtual online world that was introduced as a social network in 2003.

We established a presence in the Sustainable Living Pavilion in Second Life. We had an overwhelming number of visitors, and we were able to sign many up as non-insurance members. We then expanded our presence so visitors to the pavilion also knew that we sell insurance, and that buying from us would support the cause. Our online processes were well-aligned with these folks—it is their preferred way to do business. Even so, early on, we stumbled. Each avatar in the Pavilion was a staff member—like other avenues of sales, we couldn't scale to meet demand. When AI was expanded to include the sales process in 2018, we reached near unlimited scalability for new business.

Now, there is more to running a profitable organization than highly cost-effective administration and distribution. The advent of a principle-based approach for reserves and capital and International Financial Reporting Standards in the early part of the decade caused us to review our reporting methodologies, too. Importantly, we wanted and needed to have a better way to model and assess risk that could also be used in everyday business decisions.

In 2010, we retained a consultant to build a data store to feed a comprehensive model of our business. From there we layered business intelligence that is "executive-friendly," allowing executives to examine any dimension of the business, resulting in broad and deep understanding of the cost structure and profitability of each product.

The projection model is built for stochastic-on-stochastic projections. These give us reserves and capital under the principle-based approach. Rapidly, we recognized the need to develop in-house expertise in running the model. Now our risk managers run comprehensive sets of stochastic scenarios, providing a very rich data store. Sampling became necessary to get results at a level of detail that is useful. Now AI controls sampling to access those runs and can provide quick estimates, with appropriate ranges of out-comes based on the results of the larger body of data. This is accessible for timely operational decision-making. We focus our risk analysis on the tails, both in economic conditions and in the behavior of our insureds. We no longer discard any economic outcome as tail-risk—anything is possible!

I should comment briefly on some other aspects of our business. We have made a practice of outsourcing to experts any function that requires specialized skills in limited quantities. We cannot afford to attract and retain these professionals and provide the back-up necessary to reduce our dependence upon a handful of individuals. As mentioned, underwriting is one such skill. Additionally, we've retained an investment firm to handle our assets—we provide modeled cash flows and duration targets, and monitor performance to agree-upon benchmarks. Internal audit, payroll and human resources are other examples of outsourced activities.

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Summarizing, we have enjoyed the benefits of alignment to the right mission and investment in the right technology for the time. We have seen phenomenal sales growth, with unit costs of both acquisition and maintenance shrinking. The income from in-sourcing activities funds ongoing technology research, as we strive to cost-effectively keep up with the interaction preferences of our members. Our investment in risk modeling has paid for itself many times over, as we have strictly managed within a fairly narrow risk appetite and avoided some of the losses experienced in the industry due to changing customer behavior in volatile economic times that are the new normal. Lastly, we enjoy tremendous loyalty from our customers—they want to see us succeed, because that means their beneficiaries, their children, will inherit a better planet along with their insurance proceeds.

To wrap up, I want to comment on our most pressing issues. First, how do we keep satisfying our customers' needs for future financial products? Clearly, our product line needs to expand, and we will do that in a controlled manner, with analysis of the risks and opportunities available. Second, how do we expand beyond our geographic borders, to allow global growth of the insurance business? The virtual world is a rich source of global interest in membership, but we can only sell and service within the geographic boundaries of the United States. Will we ever see a global standard of regulation for insurance? Are International Financial Reporting Standards the first step? We live in hope!

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Niche Life Insurance: One Answer For Being Successful In 2020

by Jay M. Jaffe

The good news about the future of the life insurance industry is that life insurance is a product that will always be needed. The bad news is that many, if not most, life insurance products already have or will become commodity products. Therefore, one of the key questions facing much of the life insurance industry in the year 2020 is how to survive in a commoditized market environment.

Companies that do well in a commoditized market tend to be very efficient operators or niche players. If a company elects to compete on price, then it must be a low cost manufacturer or it will not make money. However, in niche markets, price may not be the only or even the major factor driving a prospect's purchasing decision and being able to identify and connect with a particular niche market becomes of paramount importance.

While both the efficient operator and niche player approaches will work, they require different skills and attitudes in order to be successful. Efficient operators will probably be larger companies that can afford to invest in volume-related technology and are able to obtain volume-related price discounts from suppliers. The efficient operators will also use very specific operating targets and have the discipline to stick to their plans.

On the other hand, the niche players will be more market-oriented and will probably tend to be more creative. The niches don't have to be large to be profitable. In fact, the larger the commoditized companies grow, the more opportunities may be presented for the niche marketers because life insurance has traditionally been characterized as a product that is "sold rather than bought" and large companies tend to abandon markets.

The potential for achieving higher returns on investment would seem to be more likely for the niche players than the commoditizers because if they're successful, they won't be competing on price (or commission). So how does a company become a successful niche player? And, is there any way to predict which niches will be the most attractive?

Any life insurance company that operates as a successful niche player in the year 2020 is likely to possess:

- Foresight,
- Focus,
- Discipline,
- Market intelligence,
- Innovation, and
- Luck.

Practically speaking, all of the niche player factors are interrelated. Moreover, the interrelationships between these elements are dynamic rather than stable.

Foresight means having vision to identify those niche markets that have a high potential for success both in terms of sales and profits. Weeding out the many interesting but unworkable or inappropriate concepts that are present in the marketplace is a talent in itself. To do this well requires both a view of the current and future market trends and a grasp of consumer attitudes.

Focus means having a clear picture of a company's future plans and directions. Particularly smaller companies cannot extend their companies' talents and resources beyond the company's ability to concentrate its efforts on what it can and needs to do best.

Discipline must be present and follow focus. Once a company becomes focused, it needs to make certain it has the discipline to keep working at its plan. The road to success is hardly smooth and will face many potholes and detours. The trick is to learn to readjust plans while at the same time not losing sight of the intended end goals before they have been thoroughly vetted.

Market intelligence is one way that a company increases its odds for making the right decisions. Knowing

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more about the market environment than the competition makes it easier to be confident that a company is on the right track, not only at the time of the original decision to pursue a concept but also while the concept is being implemented.

Innovation refers to making something happen. Simply having a new idea does not mean that the concept will work. Often people mistake innovation for invention. These are two related but different concepts. An inventor is a person with a new idea who usually doesn't devote the energy or have the ability to make the idea a commercial success. Putting an idea into an environment that works requires a different talent and this is referred to as innovation. Having innovation skills is extremely important for niche players because they will likely see many business opportunities in uncharted waters that require practical solutions in order to generate and sustain profitable operations.

No matter how much foresight, focus, discipline, market intelligence and innovation a company is fortunate to have, success usually includes some element of luck. Of course, a company can work to make its own luck by being the player that understands the total picture better than its competitors.

Even with all the basics in place, if a company wants to be a long-term niche player, it needs to start by recognizing that finding new niches is not a hit-or-miss process. Finding niche markets can be a programmed process if it becomes ingrained in a company's operating philosophy. Locating new markets is, in itself, a full-time job, and so the first step is to assign someone the responsibility of developing new niches.

The next basic element of operating as a successful niche marketer is to understand that a company that believes in a niche marketing philosophy doesn't have to have too many niches to be successful. On the other hand, having only one narrow niche could be precarious because markets emerge and disappear with great rapidity in today's economic climate. Understanding the balance between too many and too few areas of activity is a critical step in building a niche company.

One of the best sources for identifying niches with the most potential is to create communication directly with the people who see the needs and wants of insurance markets. In other words, you need to keep open lines of communication with those individuals who have the ears of producers and prospects. These individuals tend to be a breed unto themselves although they often describe themselves as engaged in some form of insurance distribution.

The problem that many life insurance companies have is that they don't go out of their way to be attractive to these creative minds. It is not uncommon for life insurance companies to reject outside marketing input out of hand or fail to respond quickly to concept proposals. The result is that people with niche concepts tend to work closely with just a few life insurers that recognize how to efficiently evaluate new concepts. Ironically, if asked, almost all life insurers will tell you they want new markets but the simple fact is that they aren't prepared to react when approached.

So which niches will be active in terms of both volume and profitability in 2020? Here are some thoughts:

- Electronic marketing will eventually become much more targeted and sophisticated with discernable niches;
- Longevity products will gain acceptance and some life insurers will specialize in providing products and services to this growing and important need niche;
- Favorable lifestyle-based life insurance products will emerge as a niche among those people who want to be rewarded for living a healthier lifestyle;
- Niches will develop for special needs children and adults because traditional life products don't adequately address their particular circumstances;
- A group of products that are designed to perform in a low-interest-rate environment will become a niche; and

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- Markets abandoned by large insurers often offer potential for a more hands-on operational environment, particularly when they are not burdened with large layers of corporate overhead costs.

Undoubtedly, there will be several strategies successfully used by life insurance companies in the year 2020. Among these will be both broad market and niche life insurance players. But for many companies there will not be an option to be a broad market operation because they will lack the capacity (including capital) to play against the "big boys." The alternative will be to become a niche player. Companies may actually like this approach better once they understand how to operate as a niche marketer and taste the fruits of their labors.

For a life insurance company to be a successful niche player, it will not only have to follow the factors described in this paper but accept this approach to doing business. It might behoove many current life insurance organizations to take a glance at what the future might look like and consider moving to a niche strategy on a proactive basis rather than waiting until many of the more delectable avenues have closed.

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A New Perspective On Some Familiar Risks

by Steven Malerich

The life insurance sector of the future faces two significant societal risks that have so far been of little concern to the business. A financially sound, operationally efficient, growing and profitable company in the life insurance sector in the year 2020 will recognize these risks, will understand their significance to the business, and will act to lessen the risks while addressing customer needs in the face of the risks.

Although the coming demographic shift in the United States and several other nations has been well known for many years, some of its implications are not yet widely recognized. Beyond any issues of financing retirement needs is the issue of producing goods and services for the entire population. Despite the known concerns, there is a risk that too many people will retire too soon, leaving too few workers. If that does happen, we may not know it until it's too late to correct. One likely result is rapid inflation eroding the value of what retirement income most people will have.

Environmental risks are also well known, but again some implications are not widely recognized. Among the risks are climate change, depletion of energy and fresh water supplies, and strain on various food sources. Here, too, a risk is that supply will be unable to meet demand, and rapid inflation will erode the value of retirement income.

A true nightmare scenario could occur if both risks are realized—too many people retire too early and we see a collapse in productive capacity due to environmental degradation.

What These Mean To Life Insurance

To imagine a sound, efficient, growing and profitable life insurance company in 2020, we must understand what these risks mean to that company.

Demographic Risk

The relevance of the first risk—too many people retiring too soon—is easy to see. Thirty years ago, we saw rapid inflation and high interest rates. We have experience with some of the dangers they pose to life insurance.

Some have argued that demographics played a role in that period of economic turmoil, with a large generation of young people facing the capital needs of their new adult life. (I am among that group—see my editorial, "Thinking about the Unthinkable," in the March 2004 issue of *The Life Actuary.*)

Now, that same generation is moving into retirement. The new risk has some resemblance to the old, but the needs of our customers will be different.

In that past era we had some challenges keeping existing policies in force, but high interest rates allowed us to paint a very attractive picture of our new products. Selling more life insurance was an obvious approach to meeting customer needs. Growing incomes of the young generation made that possible.

This time, incomes will be declining. The challenge will be to sell adequate retirement income protection to those same customers while they still have enough money to buy it. If we fail to capture the money early, what's left will likely be insufficient by the time people realize they need the protection we offer. And, if inflation erodes the value of what protection we do provide, our customers will not have enough money left to buy more protection.

Environmental Risk

It's harder to see the relevance of the second risk—environmental degradation—to a life insurance company. Except for the obvious fact that the business needs people and resources, which are both threatened by these risks, we don't normally think of this as significant to our business. Yet, significant it may be.

The performance of our products, for the customer, may be inadequate if scarcity leads to rapid inflation, which then leads to a loss of purchasing power. A guaranteed lifetime income isn't of much value if inflation makes it insufficient for satisfying basic needs.

That either or both of these risks will be realized by 2020 seems unlikely, but by then one or both might be unavoidable. Adding to these societal risks, insurers will face a particular risk—reputation. Promises of a secure retirement income will ring hollow if that security is eroded by inflation. Regardless of what causes inflation, life insurers may be seen as failing to deliver on their promises if many customers see the value of their protection evaporate and they can't afford to buy more.

A Successful Life Insurance Company

A sound, efficient, growing and profitable life insurance company in 2020 will be actively involved both in minimizing the risks and in protecting its customers from their effects.

It is possible that the current financial crisis will mitigate these risks. Even coming out of the recession, consumption may stabilize at a lower level than before, slowing the environmental strains. And, capital markets may not come back as strongly as before, inducing more people to delay retirement.

It is also possible that we'll exit the current crisis much as we have done other recessions of recent decades—with ever-growing consumption and renewed optimism leading more people into early retirement.

The more conservative of these scenarios would likely make the following transition easier for life insurance companies. The more aggressive scenario would likely make the transition difficult. Either way, the path to success is essentially the same.

Investments

As a major source of capital, insurers have the opportunity to see the coming dangers and invest in promising solutions to the risks. This will require increased foresight. In contrast to the consumption-oriented economy the world has known for several decades, investing in ever-increasing production may be damaging, perhaps even fatal. Redirecting investments to long-term productivity needs will be difficult. It is easier to anticipate near-term benefits than long-term, but near-term anticipation will almost certainly fail to see major problems before they develop in the coming years.

Some insurers may try to anticipate the best solutions for the greatest dangers and invest accordingly. Among these, a few may guess right and reap the windfalls of being invested in the right businesses at the right time. Any such companies, and their leaders, will be seen as visionary and celebrated in the business and popular press. However, such a strategy would likely see far more companies guessing wrong and suffering because of it. This is a high risk strategy, and probably best avoided by most.

A sound strategy for facing these risks might be to begin early, in the next few years, investing relatively small amounts in various businesses or technologies that hold hope for preventing or mitigating the dangers we face. Gradually, more money can be invested in areas that remain promising. Especially if followed by many insurers, such investments may be all that's needed to develop solutions to some of these problems before they become acute.

Products

If numerous insurers are widely invested in solutions to the problems associated with these risks, we may avoid severe shortages and hyperinflation. However, there would remain a significant danger that the problems are not entirely avoided. Even more moderate levels of high inflation can be devastating to the value of financial security programs that do not include significant protection against inflation.

As before, a company can successfully serve life insurance needs even if inflation becomes significant again.

A New Perspective On Some Familiar Risks *by Steven Malerich*

Despite the new significance of a retired population, there will still be younger families for whom life insurance provides important protection. However, this time the young family market will not be a growth opportunity, except to keep up with inflation. To continue growing, the successful company will need to serve the needs of the growing retirement population.

Historically, life insurers have held a small share in the retirement income market. Social insurance and pensions have dominated, with individuals retaining the risk that their personal savings will be exhausted before they die. The successful, growing company in 2020 will have to tap this market. To remain successful, that company may have to provide substantial protection against inflation.

Reaching this market will not be easy. The associated dangers of not having guaranteed lifetime income and of any such income proving inadequate after inflation are both long-term dangers. Most people are not easily persuaded to sacrifice now for protection against such distant risks.

To make those sales, the insurance company will have to overcome inertia. To retain a solid reputation, the company will have to deliver on its promise of protection even under conditions of elevated inflation. And, if the company is to remain strong, the products will have to perform well for the company, too. Perhaps that takes us back to an investment strategy designed for the times.

Conclusion

In 2020, a life insurance company will be positioned for success by having made investments that enhance worker productivity to support a higher dependency ratio and that overcome many of the stresses now placed on our environment. Those investments will be complemented by products that protect the purchasing power of retirement income guarantees, as well as the longevity of those guarantees.

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2020 Life Insurance Company Success Story

by Max J. Rudolph

Conditions faced over the next 10 years will determine the characteristics of successful U.S.-based life insurance companies in 2020. Continued low interest rates will disadvantage in-force blocks since interest earned will be less than expected. Material interest rate rises would cause those same insurers to suffer. New entrants will challenge previously dominant firms for new sales. What follows is a potential outcome of a reasonable scenario based on conditions looking forward from September 2009.

Economic Scenario 2009–2020

Following the financial crisis that began with the Federal Reserve induced stock market bubble in 1995 through the 2009–2012 influenza pandemic and Iran/Russia/Venezuela driven oil disruption in 2015, this period was a roller coaster ride for the life insurance industry rivaling the previously uncharted period of 1965–1985. The pandemic hit the economy hard, as did several terrorist events.

In hindsight, these two periods proved to be very similar. Markets were volatile, even on their way up, and then broke. In the 1960s guns and butter spending (funding simultaneously for the Vietnam War and new social programs like Medicare) created pent-up inflationary pressures that were only released when expectations for inflation increased with the dual oil price shocks of 1973 and 1979.

The period starting in 1995 had already seen reduced interest rates drive increases in value of financial assets. The Dow Jones Industrial Average, a bellwether of stock values, increased from 1,000 in 1982 to a high of over 14,000 points in 2007. The dot-com bubble burst shortly after the millennium, followed by the horrific events of Sept. 11, 2001. Interest rates were reduced to stabilize markets. Those lower rates encouraged home ownership through a variety of new tools. When cracks in the financial markets led to widespread liquidity freezes, the U.S. government tried solutions including bailouts of those "too big to fail" and low interest rates. The pandemic lengthened the crisis. Over time the Treasury curve steepened dramatically. By 2015 rates began to rise, and central banks around the world were forced to intervene with higher rates to slow inflation when oil supplies were cut.

The pandemic caused life insurance product redesigns, reducing initial death benefits. High mortality claims and increased counterparty risk resulted in an accelerated consolidation of the industry, which is considered an oligopoly today. Companies selling participating life policies, mainly those operating under a mutual charter, performed better than those writing term policies. Several reinsurers went belly-up when the U.S. death rate suffered through 0.3 percent (1 million deaths) excess mortality over 2010–2012.

Regulation

This scenario led to national insurance legislation in 2015, adding national health care and moving the life/health insurance industry to a federal charter, regulated along with other financial services firms like banks. By 2020 the federal government had five years to build up their insurance regulatory staff. At first they worked quite closely with the NAIC, but over time their focus has moved to consistency with financial service regulatory regimes overseas. The state insurance departments became outsourcing vendors competing with others for audit, compliance and actuarial functions.

Marketplace

Surviving firms have focused on specific risks rather than trying to be all things to all people, forming alliances with other focused insurers.

With numerous stresses in the financial world since 1995, insurance products became simpler and more transparent. Insurance agents retired at a faster rate than they were replaced, and consolidation eliminated many companies from the brokerage market. As a result, the fee-for-service model expanded, with a financial services planner shopping online for the appropriate product.

2020 Life Insurance Company Success Story *by Max J. Rudolph*

Family offices became more prevalent, with actuaries providing "Personal ERM" services.

Company consolidation sped up after the federal charter was put in place and regulation expanded. An oligopoly formed by the survivors kept prices high but consistent throughout the industry. This allowed a new entrant, Wal-Mart, to take market share at the smaller size and rural part of the market much as they had done for banking. Their focus on enterprise risk management and pricing discipline has made Wal-Mart a key player in these markets.

Life Insurance Products

After the pandemic there was a shift toward products with reduced initial death benefits that generated reserves and cash values. This reduced company risk and lowered capital requirements. A group whole life product was reintroduced to the marketplace with features allowing portability. The price of term life policies went up markedly after the first primary reinsurer went under and was not saved.

One of the first securitized products to come back after the financial issues of 2008–2010 involved life settlements. With mortality independent of financial variables, private equity investors were willing buyers. This had a material impact for life insurers, as many existing policies were lapse-supported, with assumptions that some policies would lapse with value remaining in the contract. Someone with little probability of dying soon would take the cash value at lapse while someone with increased likelihood of collecting on the policy now had an outlet to get the money. As it turned out, these securitizations were poorly priced. They focused on mathematical modeling rather than actuarial knowledge of the subject. This left policyholders as the winners while investors and insurers struggled. A firm writing primarily term or with an aging block of whole life policies was especially susceptible to this risk. By 2020 pricing assumptions required a sensitivity with no lapses.

Annuity Products

Fixed account products continue to be popular but design features have evolved so there are no interest rate floors. The long period of low interest rates caused many companies to report losses on their large deferred annuity blocks. Once the federal charter was put in place, the required floor was eliminated, and transparency in the marketplace determined guarantees. Today more liabilities are tied directly to assets purchased to back them, with the investment risk passed through and no guarantee wrappers attached.

Payout annuities have become more prevalent since the 10-year stagnant stock market forced future retirees to save more if they hoped to meet their goals. A recent development has allowed an individual to pay into a participating payout annuity, with benefits based on additions using current attained age. The buyer purchases some units of future payout using their age today. Later they can buy more, based on their attained age. Assumptions are conservative. Dividends pass along investment gains, expense savings and excess mortality beyond what was priced for and allocates additional units of payout benefit to the future annuitant. The product is fully portable and has been very popular in the 401(k) market.

Variable Products

Products backed by mutual funds have struggled to succeed in the low return market of recent years. Most variable life products have lapsed without value as the funds dried up. Variable annuities struggled after the derivatives market seized up, and hedging programs were found to be both less successful and more expensive than promised. Pure vanilla variable annuities, sometimes with nothing beyond a death benefit rider, are being offered again.

Group Products

Companies focused on group term insurance were impacted badly by the pandemic as they had large blocks of business in the affected age groups and few assets to back them. Several large writers did not survive, and public perceptions of group term worsened. The group market adjusted to offer a cash value product that was portable.

International Developments

The financial crisis, pandemic and oil shock hit hard in all countries, but the rebound came more quickly in developing markets. While Europe followed the United States and experienced slow growth and weakening currency, growth in BRIC (Brazil, Russia, India and China) came back more quickly until Russia had its internal civil war starting in 2017. Rather than develop its own insurer, Brazilian investors took advantage of the falling value of the dollar to purchase an existing insurer in North America. Similarly, investors in India bought a European insurance giant, and China became the home office location for AIG. These transactions were made much easier when the federal charter imposed national regulation on insurer solvency. Showing its agility, Wal-Mart's insurance division recently expanded into Canada, Mexico and China.

Summary

The economic path taken will determine the traits of successful firms. If the scenario described plays out, new entrants and foreign firms will have an advantage. In-force blocks will act as a drag on existing life insurers as life settlements and low interest rates drive more efficient policyholder behavior. Industry consolidation will accelerate, favoring large insurers who focus on mortality risk with whole life products, pass through equity risk and keep expenses low. Products will evolve to add more portability and payout annuity options. A fee-for-service planner model will continue to replace commission-based agents. Regulation will increase under a federal charter, and international consolidation will accelerate among financial services industries. A cheap dollar will put U.S.-based insurers at a disadvantage.

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Industry Will Experience Zippy Growth Through Zip Processing

by Maria N Thomson

The number of insurance companies has been shrinking in the United States from a peak of 2,343 life insurers in 1988 to less than half that today.[1] The current recession will accelerate this shrinkage. In the year 2000, an analysis of Best's Insurance Reports premium written data showed that 30 life insurance families out of about 1,400 were writing 70 percent of all premium—which explains the shrinkage. This has been occurring because the successful firms in the individual life industry are primarily focused on the affluent, which is only about 10 percent of the population. Growth and resurgence of the life insurance industry over the next 10 years will come from mid-market expansion.

The distribution barriers to such expansion have been eliminated. There are now many well established and highly suitable distribution channels for the mid-market, including:

- Various types of direct response: mail, media, Internet, outbound calls, etc.,
- Work site,
- Bank agencies,
- P&C agencies, and
- Specialist agencies that form relationships with professional firms, banks, etc.

The biggest remaining hurdles to success in the mid-market are:

1. Making sales simple and transactional for the agent and
2. Dramatically reducing the time and cost of placing new business. The elements of cost are:
    a) Agent compensation (or marketing costs for direct response),
    b) Underwriting, and
    c) Processing the application, setting up a new policy record in the administration system and issuing the policy.
3. Maintaining adequate risk selection in order to:
    a) Keep mortality levels within actuarial expectations and
    b) Maintain coverage at affordable levels for customers.

In order to address processing time and cost challenges, most companies are taking advantage of technology. The most high-tech and promising solution is e-applications with expert underwriting built in. Electronic underwriting often takes advantage of e-databases such as MIB, MVR and Rx history to supplement the screening questions. The current drawback is that there is little published data on the selection of risk efficacy of these tools. By 2020 these studies will have been done—the SOA has one in progress now.

In 2020 most companies, even affluent market companies, will use some e-tools in order to aid business placement by enhancing processing speed, and also to reduce placement costs. Affluent market companies will not rely solely on these tools to underwrite their policies, but many mid-market companies will come to rely on these tools entirely for the placement of the majority of their life policies. In addition to using these tools for life insurance, some companies selling voluntary/individual health plans will also avail themselves of these tools. However, studies on the morbidity expectations for policies underwritten utilizing e-underwriting and e-data may not be available by 2020.

Currently, at least five reinsurers that operate in the United States have e-underwriting software—although not all of them offer it to customers in the United States. The market for this software will grow and become a significant

[1] *ACLI Life Insurers Fact Book.*

source of growth for the reinsurers. Having this software, and providing companion e-underwriting rules building expertise, will provide competitive advantage for reinsurers seeking the mid-market trade. Some reinsurers will also provide "value added" in the form of expertise on how to take best advantage of e-data to build rules. Additional value added may come in the form of research on additional types of e-data—beyond Rx, MVR, MIB and credit reports—that could be useful for risk selection.

The Successful Insurer Of 2020

I shall call my vision of the successful company of 2020 "ZIP Insurance."

ZIP Insurance employs straight through processing (STP) tools to underwrite and issue policies at the point-of-sale, utilizing e-tools as described above. ZIP Insurance will not use underwriters for underwriting new business, but rather for establishing underwriting rules and updating them by analyzing data on e-application responses and keeping current on pertinent industry studies and developments.

ZIP's approach to business makes the sales process very transactional, thus lending itself well to the customer service representative (CSR) sales environments it has chosen for its distribution. ZIP Insurance software walks the agent through the sale, screening questions, payment and policy delivery. While the agent is taking the applicant through the drill-down underwriting questions (personal history interview or PHI), the software will automatically poll the e-databases it is programmed to access. The PHI, in combination with the e-data, will provide the software with the information needed to render an underwriting decision. If the sale is made, a credit card or electronic funds transfer payment can be accepted, and the policy will be printed or e-mailed, as the customer prefers.

The application and underwriting data is transmitted electronically to ZIP Insurance, and a new policy record is automatically set up in the policy administration system. Thus, all manual new business functions are eliminated in headquarters. ZIP will also have the data populate a new business database to track responses to application questions in order to spot problem areas.

ZIP has chosen to distribute entirely through bank and P&C agencies—primarily through licensed CSRs and loan officers. This distribution was chosen because:

- Cross-selling to an existing customer base is far more efficient than prospecting to new customers.
- Generally, customers will come to their bank or P&C agents, so home visits are usually not necessary.
- Between them, banks and P&C companies serve just about all the population that has income or assets.

The distribution network is built and supported through a wholesaling approach utilizing regional field managers (wholesalers) who are assigned to recruit agencies and train and support them. Headquarters provides phone sales and IT support to assist with sales or sales system issues that may arise.

The wholesalers monitor agent production, and work with agents that are underperforming. ZIP provides its agencies with assistance with mail, Internet and media advertising to bring in insurance customers. Finally, agents are encouraged to have an annual review with each of their insurance customers. The sales software has annual reminders built in, and the wholesalers encourage this as well. In the annual review sessions, the need for increased face amount is assessed, and the agent discusses additional coverages (riders) that can be added onto the policy, or additional products that could be purchased (such as health products).

ZIP pays total first-year agent compensation for all levels that is well under 100 percent of premium, and only modestly higher than renewal compensation. Agents find this low first-year compensation acceptable because the

Industry Will Experience Zippy Growth Through Zip Processing *by Maria N Thomson*

sales process is very quick and transactional, without any follow-ups required, and because there is no prospecting required. This compensation pattern is modeled after the custom for the sales of P&C insurance.

As a result of very low new business processing costs and low first-year agents' compensation, there is almost no first-year strain on ZIP's business, and thus it experiences excellent returns on equity.

ZIP's mortality experience is manageable due to:

1. A risk selection process that is of about the same quality as traditional nonmedical underwriting,
2. Much higher sales per agent than most companies currently experience—thus providing better risk spread,
3. Little selection gaming by the agent, as the sale is usually treated as a routine CSR transaction,
4. Follow-ups with customers on a sampling basis to verify application responses, and
5. Data monitoring to identify either adverse or anomalous results by agent and agency, by region, and by product and to improve underwriting questions.

Since ZIP is a young company in 2020, it has chosen to focus on the new business process and managing its distribution. It outsources its policy administration to a vendor which provides ZIP with a dedicated servicing group. Thus, ZIP has a small staff, who are not even all colocated. Its sales operation is run from the Midwest, its IT and policy service liaison operations are in the South, and finance, underwriting and analysis are in the Northeast.

In time, new business STP will be used by many insurers for life, disability and supplementary medical products sold on an individual or voluntary group basis. The industry will experience a resurgence, and most of the population will become adequately covered by life and disability insurance.

In 2020 competitive pressures are not very great for ZIP. Several other companies will be distributing in the same fashion as ZIP, with similar processes. Currently, in 2009, a life insurance company is using a ZIP process to sell through P&C agents. By 2020 there will be several players in this space, and many other companies in transition from people-intensive to fully automated new business placement processes.

As time goes by, competitive pressures will become ZIP Insurance Company's greatest challenge. The fundamental problem will be managing to stay competitive without returning to the industry's self-destructive cycle of increasingly restrictive underwriting, lower rates and higher agents' compensation, which led to the abandonment of the mid-market in the first place.

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