SOCIETY OF ACTUARIES

Article from:

Reinsurance News

August 2012 – Issue 73

The Future of Underwriting—**Catching Waves**

By Tim Jehnichen

This article originally appeared in The Actuary U.K. magazine, April 2012. *http://www.theactuary.com/archive/2012/04/*

This article examines the trends in life insurance underwriting and how actuaries need to work closely with underwriters to develop accurate, forward looking best estimates.

During the last two decades the life insurance industry has undergone multiple waves of changes, each with their own influence on distribution and underwriting. As a result, relationships between life insurance and reinsurance underwriting departments have altered. More recently, however, we have witnessed a shift in the relationship between underwriters and actuaries.

WAVE ONE – CONSOLIDATION OF THE MARKET

Back in the 20th century, reinsurance underwriters provided insurers with technical support, capacity for case referrals and access to medical advisers. the end of the century, the consolidation of the life assurance industry was underway. In recent years this accelerated, making the first wave of underwriting changes visible. Why? Improved risk management and, in particular, risk audits highlighted any shortcomings in underwriting practices. Shortcomings were quickly addressed through training. Further, consolidation meant that protection offices now possessed large underwriting teams of highly trained, experienced underwriters with access to a number of medical advisers. As a result, reinsurers increased authority limits and saw fewer referrals. In response to anti-discriminatory laws, reinsurers used their extra resource to provide insurers with sophisticated online manuals which were, and still are, constantly updated with reliable, evidence-based ratings derived from medical literature and scientific interpretation. Consequently, reinsurers are called upon for complex and factorial cases and provide capacity to place jumbo risks.

With the move away from underwriting in the traditional sense, more time was available to challenge risk assessment and inevitably risk selection.

WAVE TWO - THE ROLE OF TECHNOLOGY IN UNDERWRITING

The use of technology in underwriting assessment is nothing new. Underwriting has been the perennial target of attempts to drive efficiency improvements in the process and naturally, technology has often provided the platform to facilitate this. Whilst the introduction of workflow and imaging systems, electronic applications, tele-underwriting and online underwriting manuals have all played their part, it is the use of increasingly sophisticated Electronic Underwriting Rules (EUR) systems that has really revolutionized underwriting.

Without doubt, simply embedding an EUR system will not transform an insurer's underwriting process. It is the underwriting philosophy adopted that will ultimately determine results. It is this, more than any other single factor accounts for Straight Through Processing (STP) rates in the United Kingdom ranging from 20 percent to 80+ percent (based on Munich Re market research).

STP definitions are not always the same, but usually refer to an engine making all the decisions, which means no human underwriting at all and therefore no medical evidence requests either.

Disentangling EUR from legacy systems also plays a major role. The confidence to do this only arises from the knowledge that the rules are identifying all relevant risks and making the right decisions, which in turn only comes from regular and detailed data analysis.

The industry has become increasingly adept at establishing a cycle of EUR analysis that feeds rule refinement, with the consequence that average STP rates are increasing year on year. Provided the right expertise is drawn upon (and that means consultation not only with underwriters, but also claims specialists, engine software experts, actuaries, business analysts and others) there is no reason to suspect that these advances have, or will come at the expense of Actual Expected results. The onward and upward march of electronic underwrit-

CONTINUED ON **PAGE 20**

Tim Jehnichen is responsible for product and pricing development at Munich Re. Tim can be contacted at TJehnichen@munichre.com.

ing does raise a series of questions though; where will underwriting automation ultimately take us? Is 100 percent STP with full underwriting (i.e., no compromise in cost) attainable? Is it even desirable? It is questions such as these that we intend to explore in 2012.

WAVE THREE - PREDICTIVE UNDERWRITING

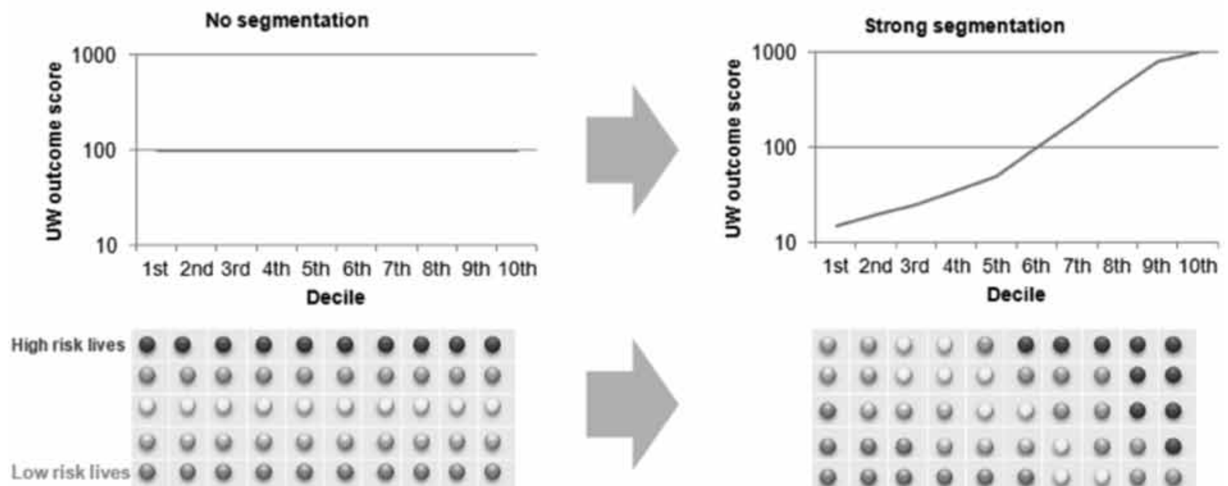
Having previously been something of a niche interest, predictive underwriting has certainly become a hot topic over the last 18 months.

It is of the predictive modelling that, for example, marketing firms use to calculate an individual's "propensity to buy." By attaching as much data as you can to previous protection applications you can use this data (the "explanatory variables") to explain the pattern in underwriting outcomes (the "response variable"). You can then use these explanatory variables to predict the underwriting outcomes of a new set of target lives. Predictive underwriting uses the value of the data available, whether this is from in-house sources, commercially bought or even publicly available. Here, we are using a risk-based response variable such as underwriting outcomes, whereas marketing firms may use as a response variable to predict propensity to buy.

This diagram shows how predictive underwriting moves you from the left hand picture, where each decile of targeted lives is the same, to the right hand picture, where the first decile is significantly better than the last. This means that you understand your risk profile better (in terms of their underwriting outcomes).

The concept of using data to predict underwriting outcomes is not new—one of the earliest examples of implementation in the United Kingdom is from the early 21st century. The drivers of accelerated interest in predictive underwriting in the United Kingdom are diverse, but most are related to the fact that consumers are increasingly disengaged with life insurance and simplifying underwriting for healthy prospects is an effective way of engaging with consumers and increasing sales. Secondly, the changing distribution landscape is driving solutions like predictive underwriting. With the looming implementation of the Retail Distribution Review (RDR), many term assurance providers are looking to increase their sales made directly to consumers. This channel creates opportunities for genuine process innovation, since an insurer has more control over who enters the underwriting process: you can see them before they see you.

Most U.K. implementations of predictive underwriting to date have resulted in very simplified underwriting processes for the few lives who met the criteria to be selected. This may also be combined with limiting the cover offered and controlling who enters the process in order to prevent or reduce substantially higher pricing. The aim of many term assurance providers is to increase



> "THE APPLICATIONS OF PREDICTIVE UNDERWRITING OUTCOMES ARE VAST, ESPECIALLY IN THE DIRECT-TO-CONSUMER CHANNEL. THIS TECHNIQUE WILL EVENTUALLY BE CONSIDERED "BUSINESS AS USUAL" IN OUR INDUSTRY,"

sales made directly to consumers. Simplified products and predictive underwriting are a way to do this.

The scope of predictive underwriting is much broader than simply identifying those lives that require reduced or no underwriting. Other ways of using predictive underwriting include: segmenting underwriting processes according to their predicted outcome; designing bespoke question sets to meet a minimum acceptance rate criterion; combining with "propensity to buy" modelling to identify the lives for whom a simplified underwriting process would significantly increase rates.

The applications of predictive underwriting outcomes are vast, especially in the direct-to-consumer channel. This technique will eventually be considered "business as usual" in our industry, as it is a natural and obvious extension of traditional marketing campaign predictions into the realm of risk outcomes.

WAVE FOUR – WHAT NEXT?

To recap, market consolidation helped to create large professional underwriting teams at the primary insurance offices. Technology has changed the way in which evidence is collected and has helped gather more (and more consistent) data. This data analysis, together with available external data sources, has driven the rise of predictive underwriting.

In the next couple of years we will see a new wave of regulatory measures coming into effect. The RDR will certainly influence the distribution landscape and cause life insurance companies to rethink their strategies. The Gender Directive will certainly impact prices and therefore competition. As demonstrated by the last wave, underwriting will move even closer to actuarial science in future.

In a competitive market, reinsurers need to understand the underwriting and distribution philosophy of insurers in order to price correctly, therefore actuarial and underwriting teams are already being brought closer together in order to support this development adequately. Reinsurers must be aware of the ratio of standard to rated policies and its potential price implications. They need to follow the primary offices' disclosure management policies closely, in order to be able to judge the level of risk. Ideally, reinsurers are able to execute this with such precision that they can implement forward looking pricing. This is quantifying the price impact of intended changes in the insurer's underwriting practices.

Without doubt, we have seen a shift in recent years of how underwriting and actuarial disciplines work together. Going forward, the signs indicate that this will not only continue but in fact increase as we look at smarter ways to select and segment risks. ■