Integrating Actuarial and Underwriting Disciplines to Improve Underwriting Outcomes

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About the Author:

Chris Nyce has held officer level positions in Actuarial roles for insurance companies in Ratemaking and Reserving. He also has held officer level underwriting positions in Global and National Accounts, Mid-Market Accounts, and Main Street Commercial Accounts. He is currently a Consulting Actuary who specializes in assisting companies in developing business improvement approaches that integrate Actuarial and Underwriting strategies. The topic and materials for this paper are drawn from a variety of actual implementations of integrated approaches using models such as the one discussed in this paper.

Abstract

This paper will present a practical method of integrating Actuarial and Underwriting objectives, with an emphasis on achieving correct rates, correct pricing, and correct reflection of individual risk characteristics in the final premium. It will discuss how implementing these in an insurance operation can improve synergy between the underwriting, actuarial, claims, and marketing functions of the company. The approach described relies on a meaningful segmentation of the book of business. By its nature the insurance business is an underwriting business, so integrating actuarial and underwriting

approaches should be a natural goal of the Actuaries. This paper contributes to the literature with powerful yet practical techniques practitioners can quickly employ.

Preamble:

Throughout the history of the CAS, the science of ratemaking, and the art of underwriting seemed to have diverged. Underwriters strive for the flexibility to enhance their ability to set a price that best reflects the individual risk characteristics insured, while Actuaries strive for the accuracy of the filed manual class rates to best reflect the risk potential in each class. However, filed manual rates do not always equate to the rates actually charged by Underwriters in the field, in part due to the subjective nature of many rating plans. In order to accomplish the objective of adequate rates, the gap between filed manual rates, and prices charged in the market must be reconciled.

The goals of Actuaries and Underwriters are the same, developing underwriting strategies that produce profits and growth. Despite the uniformity of objectives, Underwriters and Actuaries often seem at odds; each suspecting the other doesn't fully understand the insurance business. By its nature the insurance business is an underwriting business, so integrating actuarial and underwriting approaches should be a natural goal of the Actuaries.

This paper will present a practical method of integrating actuarial and underwriting objectives, with an emphasis on achieving correct rates, correct pricing, and correct reflection of individual risk characteristics in the final premium. The approach relies on meaningful and correct segmentation of the book of business. It will discuss how implementing these in an insurance operation can improve synergy between the underwriting, actuarial, claims, and marketing functions of the company. Approaches discussed in this paper most naturally are used in either the planning process, or in the rate review process. Other times when these approaches can be used would include new product introductions, in applying corrective actions to a book of business, or to further improve profitability in a book that is already performing well. Implementation of these approaches can also enhance the fairness of the prices and rates charged to policyholders.

In this paper, "rate" will denote the rate in the rating plan, while "price" will denote the final price charged to insured, as modified by subjective credits. Using this convention, it is clear that diligent Actuaries can set correct rates, but the final price charged in the market is in the hands of the Underwriters.

This paper presents an approach to reconcile the rate setting process, and the actual prices charged by desk Underwriters at the point the risk is accepted.

Common Misunderstandings:

To illustrate the misunderstandings that occur, many practicing Actuaries and Underwriters will recall variations of the following conversations while discussing insurance pricing.

ACT: Let me explain the commercial lines rate changes that we recommend filing in the state of Urbanois. We took an average of 10% matching your pricing goals. We identified the profitable classes, and took less of an increase or even a decrease in those classes. Unprofitable classes have been increased more than the 10% average. These changes will result in adequate rates in each class. With this change, you can achieve your overall pricing goals, and improve your class selection.

UW: Thank you for the rate change. The ten percent filed rate change matches our goals. We do need to amend the filing for expanded credits under our scheduled rating plan.

ACT: Why?

UW: Well, we noticed the rate changes vary by class. We will need to use the increased credits to bring each renewal risk in line with the 10% goal.

ACT: Is that all?

UW: No, we also need to use the expanded credits on the good classes. We will put tight guidelines in place to use maximum credits only on the good classes. Given the rate increase, we will also need the credits to attract new business.

ACT: Our meeting this morning may go longer than anticipated.

Misunderstandings often arise around the function of the filed manual rates. Underwriters will often use subjective rating to duplicate the function of the filed rates, to get the right rate by class. If the filed rates are correct by class, such actions by Underwriters will overshoot the needed changes. If the filed rates are not correct by class, perhaps due to filing limitations, subjective rating can still be used to obtain the correct price by class if appropriate discipline is used in the underwriting process.

Subjective rating is also often used to defeat the targeted changes of a rating plan. Striving for the perception of stability in the marketplace, Underwriters will smooth changes that vary by classification or other rating characteristic by using subjective pricing. In some cases, such as the introduction of simplified rating for commercial lines in ISO plans in the mid 1980's, most would agree some such approach might be reasonable. In more usual cases, with class rate changes correctly reflecting changes in loss experience by class, this can be counterproductive.

And on the other hand, Underwriters have an understanding of the business that is often missed by their actuarial colleagues. Without the careful evaluation of the individual merits of risks that the company accepts by the desk Underwriter, no company strategy can work. Yet often Underwriters view their job as rate setting, using rules of thumb to set price to exposure for business underwritten, and using flexibility within the rate plan to implement these rules, instead of being guided by the rate plan and using subjective rating to price based on quality of risk within class. Approaches shown in this paper will enable the Underwriters to focus on their critical role of individually underwriting risk characteristics, appropriately reflecting the quality of risk within class, while ensuring the achievement of the price and rate corrections implemented for the book of business overall in the rate review process.

ACT: Here is the indicated rate change. It shows we need an increase of 25%. When should we file?

UW: We have done a competitive rating study. This shows our rate structure is even with peers. At most we can take 5%.

ACT: How do you justify that?

UW: We'll re-underwrite the book.

ACT: How will the same Underwriters who underwrote this business to begin with achieve a timely additional 20% points improvement in results?

UW: I'll have to get back to you on that. Do you have any suggestions on how your rate study can help, other than to increase rates?

ACT: I'll have to get back to you on that also.

Actuaries often put too much reliance on the overall rate change in effecting improvement in the results. Underwriters understand more completely that the quality of the risks within the book and the proper use of subjective pricing to risk quality is as central to the performance of the overall book of business as is the appropriateness of the manual rate.

There is a worse outcome that could happen in the second conversation. The Actuary could agree to set an inadequate rate based on weak promises of re-underwriting and without an action plan to bridge the difference. Often Actuaries will cite the virtues of flexibility and good working relationships with the Underwriters when doing so. At certain times in the market, groups of companies file rates that undershoot the filed indications, hoping to bridge the difference with tighter underwriting. As a result, companies simply exchange business at lower rate levels. Without tight price monitoring on both new and renewal business, companies may not even be aware this is happening.

While it is clear such undisciplined actions adversely affect results of individual companies, on a macro level, these approaches can widen the extremes of soft market and hard market swings the industry, and companies, have experienced over the past decades.

Rates are often set by Actuaries in conjunction with home office underwriting or product management staff, and usually with local underwriting and marketing management. However, the rate change often is announced to the field Underwriters with a bulletin, without giving the Underwriters detailed knowledge on how to leverage and implement the new rate structure. Since the desk Underwriter sets the price for a risk, missing this link in the chain makes it impossible to achieve the intended rate actions.

The remainder of this paper will present a basic model, discuss approaches to designing a business strategy using the model, and finally present approaches to communicating and monitoring the successful implementation of that strategy.

Basic Approach:

The following key inputs needed to implement this approach are usually available in standard rate reviews:

- Overall profitability or rate change needed for the book of business
- Performance of the business by meaningful segment
- Market price competitiveness by segment

And to plan and achieve outcomes, the primary business drivers used in the model are:

- Retention by segment
- New business acquisition by segment
- Renewal price change by segment
- New business rate level by segment
- Underwriting approach by segment

The basic approach is to determine prospectively the performance of the book by meaningful segment, understanding the relationship of market price to the adequate price, and then plan pricing, business retention, and business acquisition to improve, reduce, or eliminate poorly performing segments of the book, while increasing the business in better performing classes.

Implementing this approach presents a number of questions to answer, and challenges to overcome:

- How to divide the book into meaningful segments.
- How to evaluate the performance of those segments prospectively.
- How to plan price, retention, and new business acquisition.
- How to predict the effects of those plans.
- How to effectively communicate the plan to field Underwriters.
- How to monitor to ensure the accomplishment of the plan.

Approaches to Segmentation:

There are advantages to a segmentation approach that uses easily available, objective characteristics to aggregate groups of risks. Loss ratio results and other business outcomes can then be driven and evaluated using these segments. Segmentation should focus on variables most important in determining prospective experience. For example, articulating a segmentation approach using "good risks" vs. "bad risks," and depending on Underwriters to determine this at a desk level, would be a poor way to segment a book. Such an approach is often called "re-underwriting". Underwriters are charged with evaluating good and bad risks within segments every day, and without some unusual circumstance, it is unlikely Underwriters will re-underwrite more effectively than they underwrite initially.

Often the best characteristics to use for segmentation are also characteristics used in rating, simply since the most important quantifiable characteristics tend to be in the rating plan. While it might seem reasonable that loss ratio results in breakdowns already accounted for in manual rate shouldn't be widely different, practical experience has shown that they often are. This is partly due to the operation of subjective rating to distort pricing as compared to manual rates. Other approaches to segmentation may use pricing characteristics used in rating, but at a greater level of refinement, such as using NAICS code for Commercial Auto rather than the vehicle use (secondary) classification codes. Or the most important characteristic might not be ratable, such as agency, or size of the risk.

While every situation is unique, it may be helpful to discuss some examples of how segmentation might be approached. NAICS code is a common and effective way to segment business. For a Commercial Property or Liability book, the occupancy class might be the most important. In a Personal Lines book, classification or geographic territory might be the most important. For D&O, the form of incorporation, or the nature of the business might be most appropriate. In Workers' Compensation, size of risk and classification could work, or for Commercial Motor, the vehicle use along with the size of the fleet could be most predictive. These are examples, but by no means the only, or even the best way to segment business.

Any degree of detail can be used to segment the business. One major characteristic can be used, or a cross between several. Credibility considerations should also be taken into account. A reasonable approach is that a great deal of detail will be evaluated in determining how the segmentation is done, but the final segmentation should be based only on the most meaningful level of detail. This makes it easier to communicate the plan to the many Underwriters that will be called on to implement the plan, remembering that if the plan fails at the point of individual risk implementation by Underwriters, it will fail overall.

Analysis of Market Prices:

Effective segmentation of the business requires good analysis of the market prices compared to prices that are required to achieve profitability. This analysis should be done in detail similar to the segments used in the model. Start by identifying the market leaders for the business evaluated, and be sure to obtain their rates. Often, the profitability by segment will be driven by the level of competition in that segment. The segments with the best historical experience will often be those for which competitors charge the most adequate rate. The worst performing segments will often have one or more lead competitors with inadequate prices. In general, the profit-maximizing rule will be to charge the higher of the available market price, or the adequate price for a segment.

Ways to Increase Predictability of Segmentation:

Segmentation is often based on past experience. Standard actuarial approaches are appropriate to evaluate the experience by segment, including putting premiums on current charged rate level, which often differs from current manual rate level. Past experience is a good starting point, but not sufficient in most cases to complete the evaluation. The consistency of the past data should also be examined. Consider questions such as;

- Is a segment showing poor results for each of the past five years, or is one very poor year influencing the analysis?
- Are similar segments showing the same results, and if so, can they be grouped together?
- Is industry experience or some other collaborating data available? Industry experience from statistical agencies can be a source of corroborating data.
- Does experience from competitors support the findings? Often competitors will file experience in enough detail, so that profitability by segment can be evaluated.
- Is the segment experience consistent? If a segmentation breakdown shows meaningful differences nationally, does this segmentation work in each region? If not, consider a different approach that does work consistently.
- Is the experience by segment consistent with the analysis of market price compared to adequate price? If the market price is inadequate, it is unlikely the segment can be grown profitably.

Finally, an environmental analysis should be done to evaluate how current events and trends could affect the analysis. Perhaps past experience doesn't reflect a recently discovered cause of action or cause of loss. Examples of this include the fairly sudden rise of mold claims, or construction defect claims that could influence future expectations for the performance of a segment of business that would not be reflected in the past experience. To accomplish this, it is critical to include Underwriters, Marketing professionals, and Claims professionals, in determining the segments. Their involvement in determining the segments will also help in obtaining the agreement and buy-in that is needed to implement the strategy, remembering that the strategy is implemented one risk at a time by Underwriters.

The better the confluence of corroborating data, market pricing factors, and environmental factors, the better the chances the segmentation will correctly predict the future that would occur if the model is not applied.

Note that this model can be used to effectively drive the results in the wrong direction if the segmentation is not done well. For example, one common pitfall is to treat segments which "everybody knows" are good business as good business without evaluating objectively. However, perhaps these segments may carry the least adequate market rates due to the general perception that these risks are "good", and the resulting heavier use of credits. Conversely, segments that "everybody knows" are bad business often carry market rates that are adequate due to the lack of aggressive competitors. The best approach is to be diligent in gathering several sources of information, and then evaluate it objectively. It is usually the surprises that represent the best opportunity.

Experience suggests that many books of business can be divided into three sections. The first produces all of the profit for the whole book. The second produces no profit, but does not produce losses either. The last produces operating losses, and these losses can be greater than all of the profits in the first section. Finding these segments represents a great opportunity, and Actuaries are very well prepared to take the lead in doing so. But finding the promising segmentation possibilities is not helpful if an effective action plan is not crafted to exploit them.

A further useful step is to put the results of the segmentation study into a form that can be easily communicated and implemented. Segments can be grouped into a small number of gradings. A simple approach is to separate the book of business into a small number of groups, perhaps 3 to 5, each with a meaningful share of the book of business, and assign a letter grade to each group, such as A, B, C, D or E. Note that these groups can contain any desired amount of detail. However, remembering that this segmentation will form the input into a plan implemented by the desk Underwriters, it is best to make sure the segmentation is clear enough to implement in that environment. That is, a large geographically diverse group will need to implement the findings, and communicate the plan effectively to the production force. Simplicity will also support the ability to consistently monitor and evaluate the key drivers, ensuring the plan is being followed.

The Core Model for Improving Underwriting Outcomes:

Core Model-Renewal Business:

Appropriate calculations to plan these business objectives are shown in Exhibit I. Once the book is segmented, and prospective loss ratios in the absence of the segmentation plan are known, it is a simple matter to determine for each segment what the renewal loss ratios will be after a renewal cycle with planned changes. An optimal outcome is achieved if the planned price changes achieve the same target loss ratio for each segment over one renewal cycle, i.e. the loss and ALAE ratios in line (12) of Exhibit I match. In some cases, a company may plan price changes to reach the target loss ratio in an extremely poor segment over two or more renewal cycles.

In the case where resulting loss ratios differ even after a renewal cycle, as in Exhibit I, prudent managers may plan to reduce the amount of business written in a poor segment. Even if price changes in a poor segment achieve the target loss ratio, it is reasonable to anticipate that corrective underwriting actions would lead to lower retentions in troubled segments, and a plan that shows that expectation will increase the chances that the corrective underwriting and pricing actions are taken. Individual risk underwriting actions will need to be most vigorous on segments with the greatest price increase. This will operate to reduce any anti-selection problems in the resulting loss ratio. For troubled segments, Underwriters need to determine what is causing the problem on a risk-by-risk basis. This is usually not an adequate substitute for pricing action, but instead must accompany it.

For all of these reasons, it is best to plan lower retentions in segments of the business where problems are being addressed.

Core Model-New Business:

The improvement actions taken on the renewal book can be lost, (and then some), if proper controls are not exercised on the new business being written. Proper pricing needs to be planned for new business. This can be done by filing and implementing correct manual rates. If a filing cannot be accomplished in a timely enough fashion, it may be appropriate to use targeted subjective pricing actions to accomplish a fair and adequate rate by segment. This can be done by setting targets for new business at a percentage of a benchmark price, such as a percentage of the filed rate. For segments with inadequate rates, this percentage is greater than 100%. Other benchmarks can be used, such as relationship to expiring rates on a similar book of business. However, if the filed rate plan is not the right base to set new business pricing, consider revising the rate plan.

It is appropriate to target new business volumes also. It is unlikely that a company can write large volumes of new business in segments which have performed poorly, or for which market prices are inadequate, and expect good outcomes. On the other hand, segments that have good performance represent the desired targets. Targets for new business can be expressed as percentages to existing business, or as absolute volumes. This needs to be monitored closely, so feedback can be given to desk Underwriters and Producers on any needed adjustments to their underwriting actions.

Similar comments apply to the individual risk underwriting approach for new business as with renewal. The most underwriting rigor is required for a segment which has been identified as troubled, especially if higher prices are being obtained, or prices charged are higher than the market price.

Retention:

Closely related to renewal pricing is retention. As expected, it is best to target higher retentions on segments with best prospects, and to measure frequently. Lower retention on problematic segments should not be achieved by pricing action alone. It is best to identify the problem areas, and selectively non-renew when there are good reasons to do so. Keep less of the problematic segments, but keep the best of them. Note that the example in Exhibit I has the poorest performing segment at an extremely low retention of 20%. If a segment with very adverse results can be identified, the optimal plan may have very low retention. It is not uncommon to find limited segments for which no retention at all may be optimal.

Planning and Predicting Outcomes:

Exhibit I shows how outcomes can be predicted based on this approach. The outcomes, loss ratio and premium volumes by segment, are determined by the business drivers identified above, pricing, retention, underwriting actions, and new business acquisition targets. The underwriting approach comes into play preventing slippage in predicted results due to anti-selection caused by the pricing actions. These underwriting actions may themselves provide improvement in the results, but it is prudent not to count on this improvement in most applications. Note that the new business loss ratio outcomes are usually not as favorable as similar renewal business loss ratios, often due to a culling of the book at first renewal for adverse underwriting characteristics that were discovered too late in the new business underwriting process to issue a cancellation notice until renewal.

This should be considered in the model. In the example in Exhibit I, new business was assumed to have a 5-point higher loss ratio after consideration of the planned rate changes.

The pricing, retention, and new business targets, and the resulting new and renewal mix of business determines the overall loss ratio outcome by segment. In the example, an overall rate change of 20.8% is achieved, but the outcome on the renewal book is better by 9.7 points of loss ratio when compared to improvement from applying the rate change without segmentation, as shown in Exhibit I. This improvement is achieved only to the extent that real and predictable differences in prospective loss ratios are discovered by the segmentation analysis, and the appropriate underwriting and pricing actions are planned and achieved. The degree of difference between loss ratios by segment shown in Exhibit I is typical of what can be found in a normal book of business.

Communicating and Achieving the Plan:

Once the model in Exhibit I is used to determine a plan, the achievement of the benefits depends on implementing and achieving the plan actions. Prices are determined at the desk of the Underwriters, so implementation at the underwriting desk is key.

Exhibit II shows an example of a simple chart showing the targets set for the key drivers (price, retention, new business appetite, and underwriting approach). This chart is designed to be a one page easy reference posted, perhaps, on the Underwriters' cube or on the office wall.

The degree of flexibility around the price targets should be made clear. The best practice would not be to require the same price change or achievement for every risk in a segment, but to expect to achieve the targeted price on average. Within each segment, the Underwriter differentiates the pricing based on the individual risk characteristics.

Along similar lines, the retention target might be the hardest target to hit precisely. Hitting the precise retention target is probably less important then the message to the Underwriter for poor segments, which is, underwrite for quality, and don't worry about losing a risk just due to proposing acceptable terms and price for coverage. On the other hand, in better segments, consider what needs to be done to keep the business, but still achieving targets and carefully underwriting the risk, of course. Monitoring should focus on making sure the relationship between retention in poor segments and target segments is appropriate.

Accompanying the chart in Exhibit II, Exhibit III shows a simple way to display the segment into which a particular risks fits. The example is one dimensional, and is based on occupancy classification. Depending on which segmentation is effective, this could be by classification, NAICS code, agent, territory, size of risk, other variables, or a combination. It could be by lines of business, or describe several lines for an account.

Note that the analysis involved in the segmentation exercise may be quite involved. However, boiling that analysis down to a simple implementation model is key to the ability to communicate and monitor the implementation. Exhibits II and III are designed to communicate a comprehensive approach into targets an Underwriter and Underwriting Assistants can ascertain at a glance.

Note that this exhibit shows separate segmentation for several lines of business. Some companies feel an account approach is best, and the segmentation could be done by NAICS code, for example, across all lines of business, if that is the way the company views its business. While this approach can work, it is worth noting that segmentation works better the more precise the segments, and precision at a line level gives better theoretical outcomes.

Integrating the Marketing Effort:

Success in the market is not necessarily achieved by doing everything various parties in the market would like the company to do, but instead by being clear on what the company is willing to do and does well. Another way to express this is "clearly and consistently articulate the underwriting appetite to the market." The guidance in Exhibit III also serves as an appetite guide for the production force. The clarity with which the company approaches the market will help profitability in a number of ways. First, the new business flow will be channeled into more favorable segments, as Producers understand the appetite, and begin to submit a higher proportion of the desired business. Second, the "hit ratio" (number of risks written as a ratio to number of risks submitted, or quoted) will be more favorable, as the company can be expected to offer more competitive terms to the more favorable segments, as driven by the targets in Exhibit II.

Higher hit ratios lead to lower expense ratios, less time quoting risks outside the company appetite, less time declining risks, more time for Underwriters to focus on underwriting risks in the desired segments, and more time for Underwriters to interact with the production force. All of these benefits from higher hit ratios can be obtained by channeling the submission flow into the segments the company desires to write.

Monitoring for Achievement:

All of the planning and communication discussed above is meaningless without a monitoring and feedback mechanism designed to gain corrections when key business drivers achieved differ from those planned. The more timely the feedback, and the more force behind achieving the targets, the better.

Monitoring the key business drivers falls into two areas, pricing, and production.

Developing the ability to monitor the true pricing in the marketplace is critical. While designing a price monitor is beyond the scope of this paper, numerous difficulties occur when designing an accurate price monitoring system. Just mentioning a few of the obstacles in monitoring renewal price changes can bring headaches to some Actuaries. These include mid term endorsements, cancel and rewrite transactions, optional coverage changes including limits and deductibles, and other details that must be accounted for in an effective price monitor.

Similar issues arise in designing new business price monitors. For the approach described in this paper to work, an effective price monitor must be built for new and renewal business, distributed to key players, and reviewed for target achievement. It also must be believable and trusted by all parties. Delivery at the level of the desk Underwriter is key, as these are the professionals that take the actions, are held accountable, and need to be able to effectively monitor prices on their own business.

Timeliness is also key. The best price monitor is one that delivers measurement including aggregated results, before renewal batches are released or new business becomes effective. This gives Underwriters the opportunity to change pricing prior to policy issuance if needed to achieve targets. If this is not possible, monthly monitors can still be effective. If the reporting frequency is quarterly or longer, the monitoring process becomes problematic, as the reporting is not timely enough to effectively respond and correct deviations from plan.

Price monitoring is a key discipline that many companies are rapidly adopting in response to the poor underwriting results of the soft market in the late 1990's. If implemented correctly, the price discipline can lead to better results overall, smoother results through the underwriting cycle, and more accurate reporting of results. If implemented poorly with the wrong targets, driving prices contrary to the market can lead to anti-selection and deterioration of results. Note that price monitors are as important in periods of declining prices as in periods of rising prices. Soft markets often result in market price declines that are more precipitous than company management is aware. To a great extent, this is caused by the aforementioned process of companies exchanging "new" business, with "new" business pricing that declines by greater amounts than any one company is aware.

Monitoring new business production and renewal retention is also best done monthly, or more frequently. As with pricing, deviations from plans need to be addressed quickly. Driving these measurements at the level of the Underwriter is important. For production measures, monitoring at the level of the accountable individual would suggest using agency level information.

Both pricing and production measurements must be made and summarized at the segment level for which the model is being driven and must also be at the level of the desk Underwriter who is accountable for achieving the targets to be most effective. Monitoring should also be summarized to levels of operating divisions (teams, branches, regions, divisions) for which managers are to be held accountable.

Summary:

The model above provides a way to instill discipline around pricing, underwriting, and marketing activities. Effective segmentation is key to obtaining the improved underwriting results that the model provides. Implementation can result in improvement in profits for a company using it, and can moderate fluctuations in results due to market swings. The clarity around the roles of Actuaries and Underwriters can result in both professionals focusing on the value added activities in which they excel. These approaches can lead to fair and adequate rates even if the rate filing process is problematic, as long as discretionary pricing is possible, and disciplined. Continual and timely monitoring of actual outcomes against the model targets is a requirement for effective use of the model.

Once the loss ratio benefits of this model are achieved, they are permanent, as long as the segmentation approach is updated periodically and an appropriate strategy implemented. This should be done at least annually, corresponding to one renewal cycle in most lines of business.

The ability of this model to improve company underwriting results requires clarity by management on strategic direction. Management cannot be unclear about risk appetite, and still implement these models. Care must also be taken to ensure that segmentation is correct. Both past performance, and market pricing are important considerations in how the segmentation is done. Ideally, the analysis of both results in similar conclusions. As with any pricing actions, implementation of the model should also be done with care to avoid adverse selection within segments. The model is a powerful tool to obtain improvements in results, but if implemented with segmentation done poorly or incorrectly, or put another way, if management has the wrong strategy, the model is also powerful in driving results in the wrong direction just as quickly.

Exhibit I

The Basic Model for Implementation

		A Classes	B Classes	C Classes	Total Book	
	Starting Position.					
(1)	Proportion of the book	29.0%	46.0%	25.0%	100.0%	From above
(2)	Loss and ALAE Ratio with no rate change	52.0%	69.0%	119.0%	76.6%	From historical experience
(3)	Rate change on renewals	10.0%	25.0%	50.0%	20.8%	Key variable to be driven.
(4)	Loss and ALAE ratio on new business	51.8%	59.2%	82.7%	56.1%	Assumed five points worse than expiring.
(5)	Net loss/exposure trend	1.5%	1.5%	1.5%	1.5%	Assume 4% loss, 2.5% exposure trend.
(6)	Assumed Unit count retention ratio	90.0%	70.0%	20.0%	63.3%	Key variable to be driven.
(7)	Resulting Premium Retention	99.0%	87.5%	30.0%	76.5%	Based on values in (6) and (3).
(8)	New business as percent of expiring premium	40.0%	35.0%	0.0%	27.7%	Key variable to be driven.
	Position after one year.					
(9)	Resulting premium growth	39.0%	22.5%	-70.0%	4.2%	Based on (7) and (8).
(10)	Resulting distribution of business	38.7%	54.1%	7.2%	100.0%	Based on (1) and (9).
(11)	Resulting loss and ALAE ratio on renewals	48.0%	56.0%	80.5%	54.7%	Based on (2), (3), and (5).
(12)	Resulting overall loss and ALAE ratio	49.1%	56.9%	80.5%	55.1%	Based on (4), (7), (8), (11).
(13)	Renewal experience if rate change alone were applied=					64.3%
(14)	Renewal Loss and ALAE ratio better due to segmentation strategy by					9.7%

(4)=[(2)+5%] / [(3)+1]
(7)=(6) X [(3)+1]
(9)=(7)+(8)-1
(10)={[(9)+1] X (1)} / [(9) for total book +1]
(11)={[(5)+1] X (2)} / [(3)+1]
(12)={[(11) X (7)] + [(4) X (8)]} / [(7) + (8)]
(13)=(2) x {[(5)+1] / [(3)+1]}
(14)=(13)-(11) for total book

Exhibit II

Sample of What a Chart to Accompany Appetite Guide for Desk Underwriter Could Look Like

(For each line of business, separate by region if desired)

Underwriters Targets for XXX Line of Business			
Class Group	A	B	C
Retention	90%	70%	20%
Renewal Price Change	+10%	+25%	+50%
New Business Appetite	Aggressively Seek	Open	None
Target % of Manual Rate	90%	100%	125%

Exhibit III

Sample Company Appetite Guide

For Use in Setting Targets, and for Communicating Appetite

Class Group	Line of Business I	Line of Business II	Line of Business III
Offices	A	A	A
Services	A	A	B
BuildingOwners	A	A	A
Light Manufacturing	A	B	C
Contracting	C	B	C
Wholesalers-Durable Goods	A	B	A
Office Condo	A	A	A
Residential Condos	B	A	A
Shopping Centers	A	A	A
Churches	C	B	B
Clubs	B	B	B
Hotels	B	C	C
Restaurants	B	C	C
Retail-not separately listed	B	B	B
Listed Retail Classes	C	B	A
Auto Services	C	C	B
Wholesalers-Non durable goods	C	C	C