Welcome to SCOR Global Life Americas

It’s been an eventful three months since SCOR announced the completion of its acquisition of Transamerica Reinsurance. At that time SCOR also announced the formation of SCOR Global Life Americas, headquartered in Charlotte, and the consolidation of its US life business into the Charlotte operations.

We are busy working through the integration of the two companies, which we expect will be largely completed by the end of 2012. Our goal is that our relationship with your company in no way is adversely affected, operationally or otherwise. Be assured that you can continue to look to us for the kinds of reinsurance solutions and support services that you have come to expect.

The acquisition presents a unique opportunity for us to enhance our role as a full service, value-adding reinsurance partner for your company. As part of SCOR we have access to a more robust, global set of tools and products that we can bring to bear in local markets, including tools and sound methodologies for managing risk and allocating capital in a principles-based regulatory environment.

One key advantage in joining SCOR – for both clients and staff – is the company’s commitment to reinsurance and the capabilities required to support a range of client needs. SCOR’s success and strong reputation are well-recognized. It recently was awarded “Reinsurance Company of the Year” by Reinsurance Magazine and, for the second year in a row, was named “Best Global Reinsurance Company” by Reactions magazine. Accompanying that honor, SCOR CEO Denis Kessler was named “Best Reinsurance CEO of the Year.” We are proud to be part of this organization.

Although we have more ground to cover before being fully integrated into the SCOR environment, we are making significant progress. The new look you see on The Messenger and The Forecaster is emblematic of the changes underway at SCOR Global Life Americas as we transition to an organization that combines the best of the past with the promise of better things to come.

I would like to take this opportunity to thank you for the support you have shown us in the past, and express my assurance that the synergy of this transaction will lead to a more valuable reinsurance partnership with your company. ∞

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November 2011
Life insurers often express interest in tapping into the underserved middle market but have difficulty making the math work. The underwriting costs for low face amount policies are high, and selection concerns require carriers to charge steeper premium rates. For producers, low commissions in dollar terms make prospecting hardly worth their time.

Recent technology improvements are helping companies reduce the time and cost of middle market transactions, with technology vendors, consulting firms and reinsurers offering technology-based underwriting solutions. However, efficient processes are not enough to be successful in this market. A carrier needs to understand the risks from all angles, or it may simply end up writing bad business efficiently.

VELOGICA®, SCOR’s state-of-the-art underwriting solution for low face amount business, is a web-supported solution that combines decision-making speed with risk assessment expertise. VELOGICA has assessed hundreds of thousands of applications since we introduced the solution seven years ago, accumulating a wealth of experience data. By thorough analysis of this data, we continue to provide and improve a best-in-class solution to clients seeking an efficient and profitable entry into the middle market.

VELOGICA has been used by life insurers for seven years. What does this mean for a prospective client? Put simply, VELOGICA is a tested and proven platform. As a veteran solutions provider, we have already made the big investment in time and resources required to get VELOGICA operating at a high level. Over the course of numerous client implementations and multiple major version updates, we have learned which program elements work in the middle market and, equally important, which ones don’t.

VELOGICA’s algorithm is supported by experts from many disciplines – actuaries, underwriters, IT professionals, medical directors, pharmacists, business managers and attorneys. By including all of these disciplines in the process, we cover the critical risks and minimize the chances of missing something important. We bring this expertise and support to clients and allow them to benefit from the lessons and experience we have gained over the years.

And all of these different professionals contribute to the protective value of VELOGICA?
Yes – you need them all. If any one of these disciplines is under-represented your program performance could be jeopardized. You need:

- physicians to develop effective medical criteria
- underwriters to translate medical criteria into rules
- programmers to implement these rules within the algorithm and make updates as required
- business managers to understand program performance and monitor agent activity
- actuaries to develop mortality and lapse assumptions and evaluate the impact of assumption variances
- pharmacists to keep track of the thousands of new drug codes added every quarter and monitor off-label uses for drugs
- attorneys to help ensure legal compliance

All of these efforts must be coordinated.

With prescription drug data becoming more accepted in the industry, what differentiates VELOGICA’s use of Rx data?
Most vendors still divide drugs into good drug/bad drug lists – too many “bad” drugs and you’re out. Our first version performed similarly years ago, but since then we’ve learned that analyzing the context of the drug use is critical for success in this market.

VELOGICA doesn’t simply rate a drug, but instead assesses all of the information at its disposal – MIB reports, motor vehicle information and, of course, the full Rx profile including frequency, dosage and mix of current prescriptions. It then correlates all of this data to the information collected on the application to make an intelligent underwriting recommendation. Our approach produces a more accurate prediction of the
applicant's underlying medical condition. Experienced underwriters do this all of the time, but VELOGICA makes it possible to run an informed, context-based analysis quickly and consistently.

**How does VELOGICA differ from other vendors’ underwriting technology solutions?**

Ultimately, an underwriting solution is not only about building useful technology – it must also be about making strong risk decisions. We are not just approaching this from the technological and underwriting rules perspectives. Our solution is different. We have assembled a team that understands the business ramifications of this market segment.

The sheer volume of applications we receive provides us with data points to continuously update the algorithm. We also have the systems and support to process high volumes of new business faster than ever before. We’re handling thousands of cases each week.

We can test proposed changes to the underwriting rules against hundreds of thousands of cases, run an actuarial analysis of the mortality outcome of the proposed rule and make a quantitative decision whether or not to adopt the rule. If you don’t have the processing history of VELOGICA, this isn’t an exercise you can conduct.

VELOGICA can also provide management reports and underwriting decision data for tracking business performance. Potentially more important, we conduct a sophisticated statistical analysis of application information and underwriting outcomes which enables companies to identify, monitor and control potential anti-selective behavior down to the agent level. We’ve helped several carriers this way; just knowing that such a sentinel program is in place can influence better adherence to practices and contribute to an improved quality of business.

Finally, our ability and willingness to stand behind our underwriting by participating in the mortality risk is something that a technology company is not likely to be in a position to offer.

**How does VELOGICA support the middle market?**

VELOGICA enables carriers to write low face amount business with minimal manual underwriting (less than five percent of decisions require the involvement of a human underwriter). It can lead to significantly higher sales volume while creating cost efficiencies in the new business process. For companies interested or already active in the middle market, VELOGICA can be a critical component to a successful sales and marketing plan.

Insurance is not bought; it is sold. Agents must be shown that selling low face amount business can be good for their bottom lines. In the past, the commissions from two or three low face policies a week weren’t attractive. With VELOGICA, turnaround time from application to decision moves from being measured in weeks to being measured in minutes. The sale becomes transactional and can be coupled with other products or services being offered, rather than becoming a lengthy process requiring significant effort from the producer. The volume implications are impressive.

**Figure 2: Consumers Want to Speak to Agents**

Most middle market consumers want to discuss their life needs with an agent in person (LIMRA). VELOGICA makes these conversations quick and convenient.

**Could automated underwriting someday be used on higher-face amount business?**

While improvements in Rx data and the interpretation provide protective value, and some providers present their offerings as suitable for higher face amount business, VELOGICA today is primarily a middle market solution. Competitive products at higher face amounts require multiple classes of preferred premiums to compete on price with industry leaders. This requires all of the data available. Full underwriting is still the best route when the size of the policy justifies the cost and time of traditional underwriting, although VELOGICA’s underwriting analysis could be added as a component to that fully underwritten solution.

**Is VELOGICA only available to reinsurance clients? Do you offer fee-for-service agreements?**

To date we have only offered VELOGICA to clients willing to participate in a reinsurance arrangement for the policies issued under the program. However, we are discussing offering VELOGICA on a fee-only basis to large scale clients that prefer not to enter into a reinsurance arrangement. But, whether combined with reinsurance or not, the unique advantages of VELOGICA can help companies take their middle market participation to the next level. ∞
In my role as a Research Actuary, I am often asked to perform mortality experience studies using the SOA 2001 Valuation Basic Tables (VBT) as an expected basis. I never gave this much thought until a question arose about the possibility that a fair amount of anti-selective policyholder behavior may be embedded into the slope of this table. If true, then trend studies using actual-to-expected (A/E) ratios based upon the VBT may be presenting biased results. In this article I demonstrate how much anti-selection could be incorporated into the table by employing a Dukes-MacDonald selective lapsation model.

Lapse Rates during the 2001 VBT Experience Era
The 2001 VBT is based upon intercompany mortality experience from 1990 through 1995. During that era, lapse rates for both term and permanent business were very high compared to current levels. Figure 1 shows the results of a LIMRA 1986-87 Long-Term Ordinary Lapse Survey. Today, lapse rates for level term insurance are about one-third of those shown in the figure and about one-half for permanent insurance. There is a possibility the slope of the 2001 VBT is overly steep because of the selective lapsation that can occur when lapse rates are inordinately high. Current mortality patterns may be flatter than the VBT because lapse rates are much lower today, resulting in less anti-selective behavior on the part of policyholders.

Dukes-MacDonald Selective Lapsation Model
The Dukes-MacDonald selective lapsation model assumes that policy lapsation in excess of a baseline set of rates is anti-selective. The total of the expected deaths from the cohort in the excess lapse group (the “reverters”) and the expected deaths from the cohort continuing their insurance (the “persisters”) must equal the expected deaths arising from the original cohort using the baseline lapses. This is the conservation of death principle.

Dukes-MacDonald assumes that the mortality for the reverters follows the select mortality of a newly underwritten attained-issue-age group. Then, conservation of deaths is used to mathematically solve for the mortality of the persisters. As long as there are excess lapse rates, this process is repeated year after year as the persisting cohort continues to be divided into new reverters and new persisters.

Determining Baseline Rates
In order to effectively apply the Dukes-MacDonald model, baseline mortality and lapse rates must theoretically be free from anti-selective influences. Starting with SCOR's proprietary reinsurance experience database, I applied the following filters:

Baseline mortality exhibits little selective lapsation while normalized 2001 VBT mortality shows significant lapse-related anti-selection.

The theory also allows for only some portion (the “effectiveness rate”) of the reverters to follow attained-issue-age mortality. In classic Dukes-MacDonald theory, the remainder, while still lapsing, follows the anti-selective mortality of the persisting cohort. However, I use a modification whereby the remainder follows the point-in-scale mortality of the original cohort. The sum of the attained-issue-age deaths plus the point-in-scale deaths plus the persister anti-selective deaths must equal the original cohort deaths.

Figure 1: Historical 1986-87 Lapse Rates
<table>
<thead>
<tr>
<th>Policy Year</th>
<th>Traditional</th>
<th>Level Term</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Whole Life</td>
<td>YRT</td>
</tr>
<tr>
<td>1</td>
<td>17.7%</td>
<td>16.8%</td>
</tr>
<tr>
<td>2</td>
<td>11.1%</td>
<td>16.6%</td>
</tr>
<tr>
<td>3-5</td>
<td>11.7%</td>
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<td>6-10</td>
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</tr>
<tr>
<td>11+</td>
<td>8.4%</td>
<td>11.1%</td>
</tr>
</tbody>
</table>

Lapse rates during the experience period for 2001 VBT were very high compared to today’s lapse rates. (LIMRA)
The intent of restricting the issue years, risk classes and face amounts was to extract experience on a homogeneous set of policies that best represented modern underwriting selection methods. The issue year constraint limited my analysis to only Durations 1-9. Applying multivariate predictive modeling techniques to various sub-segments of the data, it was determined that very little correlation existed between current levels of mortality and lapse. That is, given today’s experience, a higher lapse rate did not necessarily indicate a higher mortality rate, and a lower lapse rate did not indicate a lower mortality rate. Therefore, it is reasonable to assume the slope of current mortality contains very little anti-selection due to selective lapsation. Likewise, current lapse rates are a good proxy for the baseline required by Dukes-MacDonald.

For mortality, an exponential model was created from the experience and used to calculate baseline mortality for the various issue ages needed as input to Dukes-MacDonald. A similar exponential model was created for the 2001 VBT and normalized by setting the mortality rate in Duration One equal to the baseline. Figure 2 shows the baseline model mortality and lapse rates for male nonsmoker issue age 40. It also includes the 2001 VBT model mortality and the lapse rates used to approximate the level of the 1986-87 era.

Results of the Experiment
The experiment uses multiple cohorts to adjust baseline mortality by successively lapsing a new group of reverters from the prior group of persisters. Due to the complexity of the calculations, I limited the analysis to male nonsmoker issue age 40, where a large portion of our reinsurance inforce resides. Figure 3 illustrates the progression of results as the original cohort exhibits increasingly anti-selective mortality when the better risks lapse off year after year.

The Dukes-MacDonald Model predicts a general pattern of deterioration in mortality due to selective lapsation.

<table>
<thead>
<tr>
<th>Year</th>
<th>1st Cohort</th>
<th>2nd Cohort</th>
<th>3rd Cohort</th>
<th>4th Cohort</th>
<th>5th Cohort</th>
<th>6th Cohort</th>
<th>7th Cohort</th>
<th>8th Cohort</th>
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<tbody>
<tr>
<td>1</td>
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<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>2</td>
<td>101.0%</td>
<td>101.0%</td>
<td>101.0%</td>
<td>101.0%</td>
<td>101.0%</td>
<td>101.0%</td>
<td>101.0%</td>
<td>101.0%</td>
</tr>
<tr>
<td>3</td>
<td>100.7%</td>
<td>102.0%</td>
<td>102.0%</td>
<td>102.0%</td>
<td>102.0%</td>
<td>102.0%</td>
<td>102.0%</td>
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</tr>
<tr>
<td>4</td>
<td>100.5%</td>
<td>101.4%</td>
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<td>103.6%</td>
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</tr>
<tr>
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<td>101.3%</td>
<td>103.3%</td>
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<td>6</td>
<td>100.6%</td>
<td>101.5%</td>
<td>103.4%</td>
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<td>110.8%</td>
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</tr>
<tr>
<td>7</td>
<td>100.6%</td>
<td>101.5%</td>
<td>103.2%</td>
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<td>110.5%</td>
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<tr>
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<td>100.7%</td>
<td>101.8%</td>
<td>103.6%</td>
<td>106.6%</td>
<td>111.0%</td>
<td>115.0%</td>
<td>119.8%</td>
<td>119.8%</td>
</tr>
<tr>
<td>9</td>
<td>100.8%</td>
<td>101.9%</td>
<td>103.8%</td>
<td>106.7%</td>
<td>110.9%</td>
<td>114.9%</td>
<td>119.9%</td>
<td>125.4%</td>
</tr>
</tbody>
</table>

Backing out Dukes-MacDonald effects can be used to adjust the 2001 VBT’s mortality slope to contemporary slope experience.

The last column shows how the relative slope of mortality has changed after eight years of selective lapsation behavior. It is a measure of the amount of anti-selection possibly built.

Continued on Next Page
2001 VBT – Caution: Steep Hill Ahead (cont’d)

into the 2001 VBT (at least for male nonsmoker issue age 40). I tested several effectiveness rates and chose 90% as the factor that best reproduced the perceived behavior of the VBT population. This result is displayed graphically in Figure 4 as a comparison of original baseline model mortality, Dukes-MacDonald adjusted mortality, and normalized VBT model mortality.

Conclusion
The SOA 2001 VBT appears to have some level of selective lapsation implicitly built into the slope of early duration rates when compared to current patterns of mortality. To be fair, there could be some alternative explanation for the flatter slope of current mortality, such as a greater persistence of preferred underwriting selection. However, the ability to mimic the slope of the VBT given current mortality as a starting point using a Dukes-MacDonald model lends some credence to the former viewpoint. In either case, it is important to understand that there may be a bias in the results of any A/E mortality analysis that uses the 2001 VBT as an expected basis.

References
2Society of Actuaries. TSA 1985-87 Reports. LIMRA.1986-87 Long-Term Ordinary Lapse Survey, 266.

Trends in Underwriting Point to a Changing Future
By Ken Conners
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Life insurers are cautious about integrating medical and technological advances into their underwriting procedures in order to avoid unintended consequences to decision accuracy. Still, some recent advances are intriguing, and companies are starting to incorporate these innovations into their processes.

Below, I discuss these trends, as well as SCOR’s approach in addressing requests for changes in underwriting guidelines.

Four Trends Stand Out
Requirements. All underwriting shops work toward delivering more accurate results more quickly, less intrusively and less expensively. Anything that makes the underwriting process less burdensome for both clients and producers without impairing mortality expectations would be considered a win.

In many cases, underwriters (or vendors appealing to underwriters) suggest replacing one test for another – for example, replacing MD examinations with a combination of paramed exams, prescription drug checks and tele-interviews. Some companies are looking to the NT-ProBNP protein test to replace EKG/treadmill exams, and cognitive tests could provide greater insight into an older-age applicant’s mental acuity (which is positively correlated to mortality).

There are trade-offs. Paramed exams and tele-interviews are convenient to the applicant, but neither provides the level of medical insight and critical face-to-face review possible with a physician’s exam. The NT-ProBNP test may match the overall protective value of the EKG/treadmill but could produce a different distribution of accepted and declined risks, with pricing implications. Lastly, any inconsistency in how a cognitive test is given (or evaluated) can produce inconsistent readings of the applicant’s mental state.

“Straight-Through Processing” (STP). This term is in quotation marks because it can have different meanings, even within a single company. The goal of STP is to use technology to increase processing efficiencies. Some people may think scanning an image of a paper application is STP. While that may accelerate transmission time, image capture provides no ability to manipulate the information collected. Additionally, the risk of incomplete or illegible applications still exists.

The purest definition of STP is: A process whereby data captured electronically and completely through the application is used throughout the entire life of the policy, from underwriting through issue, administration and ultimately claims. This definition implies that the company uses some form of an underwriting engine (another term with multiple definitions) to at least assist in managing clean-sheet applications. Ideally, all of this
data feeds other systems, such as pricing models and actual-to-expected studies.

In truth, few companies have true STP capabilities. STP is all-encompassing from a systems perspective and therefore represents a big commitment of finances and other resources. Even the best capitalized life insurers can see their capability to share data limited by legacy systems and business unit silos. Not only is data not shared among profit centers (e.g., individual life and group life and annuities), functional areas are cut off as well. Underwriters may not appreciate the data’s value to their colleagues in pricing and valuation.

**Increasing Lab Role.** Traditionally, major labs have played a vital role as partner in the underwriting process, providing specific positive test result levels for various fluid panels, especially blood. This information helps company underwriters to determine the final rating based on proprietary test criteria.

Labs are increasingly expanding their services. They have developed multivariate algorithms that compare submitted applicants’ panel results with the Social Security Death Master File. The labs are also working one-on-one with life insurers and reinsurers to correlate the labs’ mortality to each individual company’s actual experience. Using an insured population instead of applicant populations is intended to provide more predictable results and credibility.

Some chief underwriters and medical directors appreciate the fine-tuning that labs may provide, as well as the quicker and less invasive process. Others question whether the decisions meet the company’s stated expectations and raise concerns about the “black box” nature of the labs’ decision-making processes. There is also uncertain buy-in from pricing and product development experts. However, labs will continue to seek ways to deepen their partnership with direct writers (and reinsurers) to improve their risk assessment.

**Predictive Modeling.** The popularity of predictive modeling in the property-casualty business has created interest in the life insurance sector. Predictive modeling is an estimation tool that uses unaffiliated but highly correlated data points to determine more accurate results. The models use complex algorithms to determine appropriate correlation to predicted outcomes.

Certain concepts mentioned above may be considered components of predictive modeling (e.g., prescription drug information). However, vendors are seeking ways to incorporate greater consumer behavior-oriented information to determine an applicant’s mortality risk.

Predictive modeling’s high degree of validity in the property-casualty industry has increased its allure in the life sector, but the concept’s future in the life business remains unclear. Perhaps the key challenge is developing an effective predictive model that can factor in the long force time horizon of a life insurance policy versus the six-month/one-year term of a typical P/C policy.

**Preserving Protective Value**

As a reinsurer we increasingly are asked to approve changes to clients’ underwriting guidelines. While we are happy to review such requests, our primary concern is that any requested change does not adversely affect the protective value of more traditional underwriting standards.

For companies considering requesting such changes, below are a few factors we consider when weighing any such changes:

**Provide Supporting Data.** Before a client initiates discussion, we strongly advise you to prepare data that supports using such technologies. For example, run the proposed system as a beta in parallel to your existing underwriting procedures and compare the results. Outcomes do not necessarily need to be identical, but outliers should be highlighted and sufficiently explained.

**Limit New Procedures to Specific Classes or Products.** New tests can be used as “gatekeepers” to mitigate potential losses due to erroneous application. For example, the NT-ProBNP and cognitive tests appear to be more effective for older-age applicants.

**Early Inclusion Can Facilitate the Process.** Keeping your reinsurers informed can not only aid in the ultimate adoption of any new tests but also allow them to provide valuable feedback during the development and testing process. We are happy to help you run protective value studies, both against your own block of business and our reinsured population, and suggest ways in which more accurate results can be achieved.
In August the National Association of Insurance Commissioners’ (NAIC) Life Actuarial Task Force (LATF) released a statement related to reserving for universal life using multiple secondary guarantees. This is in response to some commissioners’ growing concerns that reserves for certain universal life products were not appropriately calculated. The statement concludes that AG38 as written is sufficient, writing, “When a policy contains more than one secondary guarantee, Model 830 [The Valuation of Life Insurance Policies Model Regulation] requires reserves to be calculated using the secondary guarantee that produces the greatest reserves ignoring all other secondary guarantees.”

The American Council of Life Insurers (ACLI) responded to the statement, raising several concerns. First, the LATF uses language or terms not contained in AG38 to achieve a desired outcome. The ACLI also contends that, even though specific carriers are not named in the statement, some carriers could suffer from the implication of holding inadequate reserves. Lastly, the ACLI states that these concerns point to the need for a more rapid approach to principles-based reserving and recommends interim measures.

As the ACLI maintains, the scope of this statement is quite vague. The timing of the statement, coming after some regulatory concerns about proper reserving for term-UL products, suggests these products are the target. However, the reserving implications for companies offering this type of product is uncertain. In some instances it is reasonable to expect that, if accepted, stricter adherence will require carriers to retain higher reserves for such products. But effective date – prospective or retrospective – is unclear.

Calling for a more rapid pace towards a principles-based approach is worthwhile, but if past regulatory efforts are any indication, the industry is still far from meeting that goal. While interim rules may be reasonable, perhaps the strongest argument in the NAIC’s favor is contained in the Introduction of AG38:

*Obviously, new policy designs will emerge subsequent to the development of this document. No statute, regulation, or guideline can anticipate every future product design, and common sense and professional responsibility are needed to assure compliance with both the letter and the spirit of the law. While the Model is a complex regulation, its intent is clear: reserves need to be established for the guarantees of a policy. Policy designs that are created to simply disguise those guarantees or exploit a perceived loophole must be reserved in a manner similar to more typical designs with similar guarantees.*

Certainly, regulators had opportunity to assess the product design and proposed reserve requirements as companies filed term-UL policies for approval. That these products were approved in all jurisdictions in which they were filed appears to give tacit approval to the reserving approach used. Needless to say, this will be a complex issue to resolve.

We will continue to monitor the development of this issue and consult with our clients on developing approaches to adequately support product innovation.