SARBANES – OXLEY COMPLIANCE

Rebecca Conway Justice

Abstract

The Sarbanes-Oxley Act of 2002 impacts stock insurance companies because they are required to submit an internal control report with their 10-K starting with year-end 2004. In the report, management must certify that its internal controls over financial reporting are effective. The firm's independent auditor must also attest to the effectiveness of those controls. To assess the effectiveness of the controls and the risks they are mitigating, the risks and controls must be documented and then tested. This paper reviews the process performed in the actuarial department at one company as an illustration of the process.

To demonstrate compliance with the regulation the actuarial department documented its financial reporting processes, the risks in those processes, and the mitigating controls. The controls were then tested to prove their effectiveness. The next step was remediation to cover any gaps in the controls. The final result was a package given to our independent auditors to review in order for them to attest to the effectiveness of the controls. The independent auditors also performed a walk-through of the processes and applied their own tests of the effectiveness of the internal controls over financial reporting. The goal of the entire project was to attain the internal control report to which the independent auditors could attest.

Also included is a cost-benefit analysis of the Sarbanes-Oxley project and recommendations for future projects.

Sarbanes-Oxley Compliance

Introduction:

The Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley") was passed in response to a number of major corporate and accounting scandals including those affecting Enron, Tyco International, and WorldCom. Sarbanes-Oxley established many controls and refinements over corporate governance. One key section is section 404, which deals with internal controls. The act requires companies to establish internal controls over their financial processes. Management must attest to the effectiveness of those controls. An independent auditor must also attest to these controls. Both design and operating effectiveness must be tested. This requires management and the independent auditor to separately test the controls for their effectiveness.

First, the processes must be documented. Next, the risks and the mitigating controls must be documented and tested. Then remediation of any control gaps must be done. Finally, the results must be reviewed by the independent auditor.

Sarbanes-Oxley section 404 compliance entails a lot of work, and reactions from the financial sector have been mixed. A recent article in *The Wall Street Journal* covers some of these reactions. Some argue against the cost of compliance, especially in smaller companies. Others embrace the required controls documentation using it to reform current controls and processes. According to Arnie Hanish, Eli Lily Chief Accounting Officer, "The review uncovered some redundancies, allowing the firm to eliminate some

steps it was taking needlessly. 'We added some controls as well.' In all, 'it was time and money well spent'" (Burns R9).

Actuaries subject to this legislation must document the controls over the financial processes they perform as well. This project not only helped the actuarial department to comply with the Sarbanes-Oxley requirement, but also gave the department a good understanding of the processes performed and how they could be improved.

To assess the effectiveness of our internal controls, it was first necessary to understand what end product was required, identify the risks and controls, assess the controls as to their design effectiveness and their operating effectiveness, and complete any necessary remediation. Additionally, the independent auditors had to perform their review and testing in order for them to attest to the company's internal controls.

Compliance requires an understanding of Sarbanes-Oxley provisions. Obtaining this understanding was an ongoing process throughout the project, as the new regulation and accompanying guidelines were continually updated and refined.

Section 404 requires firms to file an internal control report annually certifying that the firm has internal controls over financial reporting and that management considers those controls to be effective. Additionally, the firm's independent auditor must also certify to the correctness of management's assessment of the controls. The auditor must be registered with the Public Company Accounting Oversight Board (PCAOB).

The definition of internal controls has been continually refined, but in their May 2003 statement, the Securities and Exchange Commission (SEC) attempted to finalize the definition. The SEC had earlier referred to the Committee of Sponsoring Organizations

(COSO) framework, which lists five components that make up internal controls: “control environment, risk assessment, control activities, information and communication, and monitoring” (Final Rule). The COSO studied the factors that lead to incorrect financial reporting, and made recommendations to help companies avoid those mistakes. The framework has three primary objectives: “effectiveness and efficiency of operations …reliability of financial reporting and compliance…” (Protiviti 24).

The final SEC definition of “internal controls over financial reporting” is “a process … to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles…” (SEC Implements). The processes must assure that transactions are recorded accurately and are authorized, and that they are safeguarded against unauthorized use. These requirements were split into six assertions at this company: existence, occurrence, completeness, valuation and allocation, rights and obligations, and presentation and disclosure. Each risk had to be linked to one or more of these assertions.

Additionally, it was necessary to learn what the definitions of design and operating effectiveness were. The PCAOB defined a control deficiency in design as a situation in which “… (a) a control necessary to meet the control objective is missing or (b) an existing control is not properly designed so that, even if the control operates as designed, the control objective is not always met” (PCAOB Standard No. 2). Similarly, a control deficiency in operation is defined as “… when (a) a control necessary to meet the control objective is missing or (b) an existing control is not properly designed so that, even if the control operates as designed, the control objective is not always met”

(PCAOB Standard No. 2). Each company must report significant deficiencies or material weaknesses. A significant deficiency "is a control deficiency, or combination of control deficiencies, that adversely affects the company's ability to initiate, authorize, record, process, or report external financial data reliably in accordance with generally accepted accounting principles such that there is more than a remote likelihood that a misstatement of the company's annual or interim financial statements that is more than inconsequential will not be prevented or detected" (PCAOB Standard No. 2). A material weakness is defined as "a significant deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the annual or interim financial statements would not be prevented or detected" (PCAOB Standard No. 2). A lack of documentation is considered a deficiency, and could result in the independent auditor not being able to attest to the internal controls.

Scope

Because Sarbanes-Oxley is from the SEC's viewpoint, it deals with GAAP accounting only. This narrows the scope somewhat. The processes included in this evaluation are active life reserves, claim reserves, deferred acquisition costs, loss recognition, and new product implementation. Experience studies that are used in financial reporting, even indirectly, were included in the Sarbanes-Oxley 404 documentation and testing as well. One of the difficulties faced was how to handle GAAP coding in valuation software that had already been done, and was perhaps not even documented well. The FAS97 products have their assumptions reviewed annually and unlocked where necessary, so that was covered in the 404 documentation and testing. For the FAS60 products, the assumptions used were already locked in and were not

explicitly reviewed in detail during 404 documentation and testing. As changes were made to the coding, these assumptions were reviewed to verify that they were accurately implemented.

In order to comply with Sarbanes-Oxley section 404 requirements, a project team was formed that led the project to its completion. The project team first needed to identify the current risks and controls related to financial reporting, and document the current processes. The actuarial department and the information technology (IT) department each handled their own documentation. The internal audit team documented the risks, controls, and processes for the rest of the company.

The second phase of the project was testing of the controls documented during the first phase. The majority of the testing was done by the internal audit team for a level of independence, but some tests were done by the actuarial team and IT team where necessary. After the first phase of testing was complete, the independent auditors were given the results and the documentation in order to start their review of the internal controls.

The next phase was remediation where controls that tested as not operating effectively were corrected, controls that were missing or documentation was missing were implemented, and any remaining control gaps were closed. After remediation, more testing was conducted to determine if the remediated controls were effective, and if the originally effective controls were still effective. Additionally, year-end testing was done on controls that are only performed annually. As a final step, after the year-end testing was performed, the independent auditors needed to test the controls, review the

documentation, and determine if they agreed with management's assessment of the internal controls prior to their sign-off.

Identifying Risks and Controls

The risks and controls needed to be identified. In order to do this, the processes needed to be documented, along with their risks and controls. To rank the processes, the gross and net values of all the separate processes were determined, and then the Chief Financial Officer (CFO) and Chief Actuary developed the points at which the ranks should be determined. In order to map out the process, flow charts were used with brief narratives explaining the process. Through the process maps and discussions with the process owner, the risks and controls within each process were identified, and then ranked according to their significance. The risks were ranked high, medium and low allowing the focus to be on the high and medium risks. Similarly, the risks and controls needed to be ranked to identify what were high and medium risks and the primary controls that mediated those risks. By focusing on the primary controls of the key risks, the costs of compliance were reduced.

Many of the reserve calculations are done in a packaged software. The key risks are that there is good data going in, correct calculations within the software, no errors in the valuation, and change management around the software. Some claim reserves were determined by claims triangles, which had some different risks, particularly that the process was more subjective. Several reserves are determined by actuarial judgment. A

key risk for all of the processes is that the correct amounts get to finance and into the ledger.

After identifying the risks and controls, each risk needed to be linked to the related assertion(s). The majority of the actuarial risks were linked to valuation and allocation and completeness. Another assertion that each process had was surrounding security of the systems. There were many information technology (IT) controls as well surrounding the administration system extracts, access to files and systems, etc. These were documented by the IT department and then referenced in the actuarial documentation in order to avoid the duplication of efforts. The risks, controls, and assertions were all linked to each other through the use of a Risk & Control Matrix (RCM).

The company also purchased software to facilitate the documentation. In order to validate the flow charts and the RCMs, walk-throughs were performed. Walk-throughs follow a sample transaction through the entire process in order to verify that each step is documented properly, and that no steps are missed. The PCAOB defines a walk-through as a process "where the auditor traces a transaction from origination through the company's information systems until it is reflected in the company's financial reports" (PCAOB AS2). In performing our own walk-throughs, we were able to facilitate our external auditors' required walk-throughs because the documentation necessary was already laid out for them and it helped them to understand the process.

In reviewing the processes, several controls were identified, including informal reviews, trend analysis, reconciliations, and access controls. Many of these were not formalized and needed to be documented so that they could be tested. The actuarial

department already had many analytical controls but there was no documentation that these controls had been performed.

Testing Controls

Second, the controls needed to be assessed for design effectiveness and operating effectiveness. According to the PCAOB, a control that is designed effectively is one that "would be effective if they were operated as designed, and whether all the necessary controls are in place" (Public Company Accounting Oversight Board). In determining the test plans, processes with the same controls were grouped together to save time and money during the test phase. There are several different ways to test the controls, including inquiry, inspection, observation, reperformance, and any combination of them. Inquiry is interviewing process and control owners to establish whether the control was in place, used appropriately, and functioning. Inspection is reviewing control documents to verify that the control was performed, observation is seeing the control in action, and reperformance is executing the control for selected transactions. The PCAOB considers inquiry alone as insufficient, so the actuarial department used mainly inquiry along with inspection or reperformance.

It was discovered early on that the controls may be designed effectively but were not testable due to a lack of documentation. There was a lack of documentation because the actuarial department normally only documented control failures, and Sarbanes-Oxley requires positive reinforcement of controls working. This was a culture change for many actuaries as normally the documentation only dealt with reserves outside the normal process; documentation that the process had gone smoothly did not exist. Without

documentation to test, it is difficult to determine if the controls are operating effectively. This immediately led to some formal reviews, with documentation that the review occurred.

This still leaves the question of operating effectiveness as hard to test. An "actuarial review" was difficult for the internal audit team to understand and test. Many of the other controls were easily tested by an auditor and identified weak spots in the controls that needed to be remediated.

Testing of reserve calculations could not be as easily done by an internal audit team; someone with actuarial experience is needed to test the calculations. The actuarial software vendor is relied upon to test new versions, updates, changes and calculations within the software, but because the actuarial software vendor was not willing to supply a SAS (Statement on Auditing Standards) 70, it was necessary to demonstrate the company had effective controls over the software as well. A SAS 70 report is needed when a company uses a third party to handle financial transactions. The SAS 70 report is a report from the third party's independent auditor that attests to the controls of the third party. To demonstrate that the company had effective controls over the valuation software internally the controls of parallel testing when major changes and new releases of the software occurred, along with testing of the actual calculations within the software were tested. To test the internal calculations in the software, recalculations of the reserves were performed for each of our types of products.

Because Sarbanes-Oxley is focused on GAAP, the GAAP reserves, DAC, and premium accruals were tested for traditional, UL, annuity, and health product lines. This

testing was a great reinforcement of what has been taught through the exam system. The recalculations for income pay annuity reserves are in Exhibit 1.

Exhibit 1. Income Pay Annuity Reserve Calculations

Type of policy	Issue Date	Issue Age	Int Rate	Years Certain	Payment Mode	Annual Payment Amt	Poly reserve for Q1 2004	Calculated Reserve	Diffe-rence
OBA w/out LC	4/1/1995	65	5.25%	10	Annually	$3,768.00	$7,347	$7,347	$0
OBA w/out LC	4/1/1995	65	5.25%	10	Annually	$5,496.12	$10,717	$10,717	$0
OBA w/out LC	8/1/1996	69	5.25%	10	Annually	$3,012.36	$8,447	$8,447	$0
OBA w/out LC	8/1/1996	70	5.25%	10	Annually	$3,771.60	$10,576	$10,576	$0
SPIA w/out LC	5/5/1999	70	5.00%	6	Annually	$15,905.52	$30,907	$30,909	-$2
OBA with LC	5/1/2000	63	6.75%	15	Annually	$471.48	$5,245	$5,245	$0

For traditional, the premium accruals, DAC, and GAAP reserves were recalculated (Exhibit 2).

Exhibit 2. Traditional Life Reserve Calculations

	Software			Recalculation			
Policy	Reserves	DAC Items	Premium Items	Reserves	DAC Items	Premium Items	Difference
1	4,114	0	18	4,116	0	18	(2)
2	39	450	456	39	450	456	0
3	42	0	0	44	0	0	(2)
4	50	941	791	51	941	791	0
5	4,965	2,099	1,020	4,965	2,103	1,020	(4)

Recalculating DAC on UL and deferred annuities presented a bigger challenge because the DAC was determined at the cohort level (Exhibit 3). To overcome this, it is necessary to recalculate an entire cohort.

Exhibit 3. Universal Life/ISWL and Deferred Annuity Recalculations

	UL Policies Account Value			Deferred annuities Account Value		
Policy #	Software	Recalculated	Difference	Software	Recalculated	Difference
1	1,939	1,940	(1)	5,419	5,419	(0)
2	1,596	1,596	(0)	15,709	15,711	(1)
3	402	403	(1)	20,297	20,297	(0)
4	2,546	2,546	(0)	2,900	2,900	0
5	454	454	0	10,711	10,711	0

EOY DAC	Software Calculation	Recalculation	Difference
UL	42,031	42,032	(0)
Deferred Ann. 1	2,084	2,084	0
Deferred Ann. 2	3,588,200	3,588,214	(15)

The health recalculation was split into active life reserves (ALR) (Exhibit 4) and disabled lives reserves (Exhibit 5). This testing demonstrated that the software relied upon was accurate.

Exhibit 4. Health Active Life Reserves Recalculation

Policy No.	Software ALR	Recalculated ALR	Difference in ALR
1	$774.11	$774.11	$0
2	$48.54	$48.54	$0
3	$7110.50	$7110.50	$0
4	$1628.17	$1628.17	$0

Exhibit 5. Health Disabled Life Reserves Recalculation

Policy Type	Software Calc Reserve	Recalculation	Difference
DI	9,701	9,701	0
LTC	35,050	35,050	0
HHC	16,777	16,777	0
HHC	21,554	21,554	0

After the testing was done, the operating effectiveness was evaluated to be effective, not effective, or not evaluated. If key controls were ineffective, and there were not enough mitigating controls, the operating effectiveness was deemed ineffective. If the key controls were tested to be effective, then operating effectiveness was deemed effective. If the key controls were not tested because of lack of documentation or it was a new control, the operating effectiveness was deemed to be not evaluated. The ineffective and not tested key controls were then slated to have year-end testing to determine their effectiveness then.

Remediation

The third step in the project was remediation. The remediation issues included the lack of documentation discovered during testing, plus any lack of controls or failure of controls discovered during testing.

The implementation of Sarbanes-Oxley necessitated a culture change from documenting only control failures, to recording positive evidence of controls working effectively.

Some of the new practices included formal reviews and sign-off by the lead valuation actuary within a new sign-off matrix, which includes the manager's sign-off on the review, sign-off that all necessary extracts were created, and sign-off that reconciliations were performed. This matrix would help the chief actuary and CFO know that the key controls had been performed and it would help when the independent auditors came in for testing. Additionally, the matrix was supplemented by descriptions of the reviews performed.

One of the difficulties encountered during the remediation phase was the tight schedule the project was under. Because most of the actuarial controls were quarterly, all of the remediation needed to be complete by third quarter. In order for senior management to sign-off that the controls were operating properly, they needed to see them operate at third quarter and year-end correctly, not just one quarter. To assure that the remediation was complete and operational by third quarter, most of the remediation work was done by second quarter.

In addition to lack of documentation, a lack of good communication is also a lapse in controls. In reinsurance reporting, for example, re-work was often caused by a miscommunication among the affected parties. In order to correct that, the head of the

reinsurance department developed a communication process within his department to alert the interested parties of any changes. One problem that was identified occurred when the head of the reinsurance department was not kept informed. To combat this, a quarterly meeting among reinsurance and actuarial was instituted to ensure that all parties were aware of all upcoming changes and new treaties. The meeting minutes were signed off on and saved as evidence of the control performing.

During testing, it became apparent that there was also a lack of communication and/or understanding between the internal auditors and the actuaries. An actuary can look at an error log and recognize that certain "errors" are not really errors, because the actuary knows how the system works. For example, "issue date greater than valuation date" is shown as an error by the valuation system, but the system handles it exactly as it should. In this case, the "error" message is more of a warning. Additionally, there were some additional reserves computed that were estimates, and although the computations were there, the internal auditors found that it was confusing to look through. To overcome this lack of understanding and communication, a memo was developed that describes the adjustments and handling of errors.

Even before testing began, it was apparent that the valuation system lacked a suitable change management process. Although the calculations are not changeable by the user, the users can change the mortality assumptions, interest assumptions, expense assumptions, etc., very easily within the system.

On most applications IT handles change management, but because the valuation system is only used by the actuarial department, IT did not play this role, and the actuarial department handles all aspects of software management. The ideal was to have

a somewhat simplified change management program that resembled IT's approach. IT's change management process is much more time-consuming because it handles many more users and applications. One of the key aspects of change management was the tracking and approval of changes. IT had purchased a software package to handle this, while an Excel change log was sufficient for the actuarial department.

The Excel change log tracks each change that is made, what tables are changed, what date the change was made, any related output, and sign-off where necessary. Each user is responsible for updating the log, and the valuation actuary is responsible for reviewing it. Another part of change management, was system security control. Before Sarbanes-Oxley there was little security surrounding the valuation system. In order to comply with Sarbanes-Oxley it is necessary to know who was capable of making the changes, so the teams assigned individual user logons and passwords to each necessary user along with the appropriate level of security for each user.

Another key step in the remediation process was the documentation of spreadsheet controls. Originally, spreadsheet controls had not been considered. This was a very comprehensive topic to address as almost all reporting is done through spreadsheets. The ideal from an auditing perspective was to have each cell locked with a formal sign-off and review procedure for each change. In the quick-paced environment of a quarter-end, this solution was not feasible for the actuarial department. The spreadsheets are used by several people and the numbers changed each quarter. Another solution considered was locking just formula cells and allowing editing of only the input cells. Although this solution would work, the time commitment to establish these controls was more than could be accommodated at the time. In order to not have to lock-

out each cell in each worksheet, other controls were put in place and the spreadsheets were analyzed to determine if further controls were necessary.

The first step in this process was to rank the spreadsheets in terms of complexity and criticality. Almost all worksheets were critical, but not all were complex. The spreadsheets that did basic computation and/or reporting of numbers were deemed low complexity. The spreadsheets that had a lot of linking and/or macros but no separate calculations were deemed medium complexity. The spreadsheets that contained detailed calculations such as calculating the short tail claim reserves were deemed high complexity.

The low complexity worksheets were determined to be controlled primarily through check formulas, restricted access to the actuarial department, and a final sign-off on the reserves in the ledger being tied back to the worksheet. The medium complexity worksheets were password protected so that the formulas could only be edited by one or two people. The accident and health trend worksheet contained several macros, so the worksheet was also given an extra level of control in a quarterly test of 10 lines of business matching back to the line of business reports. The high complexity worksheets were given the highest level of controls. The controls were the same as the low complexity spreadsheets, along with password protection and an additional test each quarter of the formulas by a peer reviewer. A formal process was also put in place for any changes to the high complexity worksheets.

One final step of remediation was ensuring that there were monitoring mechanisms in place to help reduce the costs of future year's compliance. Monitoring and testing must be ongoing to ensure that the department would be ready for the

independent auditors review, and to make sure the controls were in fact working. One important monitoring tool was the creation of the sign-off matrix. A quick glance at the matrix showed what had been signed-off on, what had been done and reviewed, and what still needed to be done for that quarter. Additionally, many key controls were initially deemed ineffective or not tested due to lack of documentation. By tracking these quarterly, it was easier to prove that these controls were in fact effective by showing that they worked for two or three quarters instead of showing that they only worked for one.

After remediation, several types of controls were in place, including formalized procedures, reviews, and sign-offs; reconciliations; access controls; change management controls; analytical/trend reviews; meeting minutes; and independent recalculations of reserves.

Independent Auditors

The fourth step in the project was getting the independent auditors to review and sign-off on the internal control report. The act requires that the auditors perform a walk-through of each major process. In a walk-through, the auditor follows the process from start to finish and collects documentation of key steps and controls. The walk-through is intended to give the auditor an understanding of the transaction flow so that he can determine where risks lie and if they have been mitigated effectively. The walk-through also gives the auditor a chance to ask about how errors are handled when they are encountered to determine if the controls really are working. The auditor then must determine which controls are the key controls that need to be tested. The auditor cannot rely on the firm's testing alone and must conduct his own testing. The independent

auditors came in to perform their documentation review and walk-throughs in the third quarter. This gave the company time to complete the initial testing and have the documentation finalized by the time the auditors came. The auditors pointed out some additional risks and controls that were discussed and then either added to the actuarial documentation or determined whether to fit it elsewhere.

One type of risk that the auditors added to most of the actuarial risk and control matrices was the risk of not booking the ledger entries correctly. However, the assertion did not apply to many of the actuarial processes because the ledger entries were booked by the finance department and were in its documentation. Once the independent auditors had completed their review of the documentation and the walk-throughs, they began their testing of the controls. Any control gaps were added to the department's remediation plans.

Cost-Benefit Analysis

Sarbanes-Oxley compliance is not cheap or easy. Our estimate is that the company spent 1400 hours on this project in just actuarial resources, leading to an approximate cost of $125,000. The rest of the company expects to spend around 22,000 hours on compliance. Assuming the average salary with the cost of benefits is $60,000, this leads to an estimated cost of $735,000. Add this to the cost of new software, upgrades, and external resources of approximately $1.2MM, and Sarbanes-Oxley has a hefty price tag of two million dollars. The SEC estimated the cost to be only $91,000 per company (Final Rule), so it seems the cost has been greatly underestimated. Of course, these costs don't include the additional independent auditors cost to attest to

management's assessment of their internal controls, which can easily be another one to two million dollars. According to a recent article in *The Wall Street Journal* the average first-year cost of compliance is $3MM per company (Solomon A1).

But, what are the benefits of Sarbanes-Oxley compliance? There is the obvious benefit of avoiding a fine for not complying, which can be up to five million dollars and/or imprisonment for up to 20 years (Sarbanes-Oxley Act). Other benefits were realized, but it is more difficult to establish a dollar amount for qualitative improvements.

There is the benefit of the documentation alone, which helps to ensure that the process is consistently followed and helps with training of new hires.An additional benefit is process improvement. Sarbanes-Oxley led to the examination of several processes looking for ways to improve it. A lot of data entry was removed and documentation around estimates and reviews was developed. One of the desirable process changes was made to the life incurred but not reported (IBNR) reserve calculation. It was decided that it would be better to calculate the life IBNR reserve quarterly instead of annually. Because the annual process was too time-consuming for quarter ends, a new process had to be designed. The pilot was in the second quarter for one company that needed an updated IBNR estimate as it was a rapidly growing block of business. Three methods were looked at for this block of business. The first method was a claim triangle methodology looking at the development of the reported reserves compared to when the death occurred (Exhibit 6).

Exhibit 6. Life IBNR Claim Triangle Methodology

Gross Liability	Qtr of Death				
Qtr Reported	3Q '03	4Q '03	1Q '04	2Q '04	Grand Total
3Q '03	84.71%	0.00%	0.00%	0.00%	8.08%

4Q '03	15.29%	85.57%	0.00%	0.00%	24.42%
1Q '04	0.00%	9.97%	86.55%	0.00%	32.09%
2Q '04	0.00%	4.46%	13.45%	100.00%	35.41%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%
3Q '03	84.7%		Deaths in 2Q '04 reported:		
4Q '03	85.6%			792,400	
1Q '04	86.6%		100%	925,592	
Average	85.6%		IBNR Estimate	133,192	

The second method was comparing the actual IBNR to the face amount over the history of the block (3 quarters). This can be seen in Exhibit 7. This produced a much higher estimate of the IBNR, and it seemed unreasonable due to the quickly growing face amount for this block of business.

Exhibit 7. Life IBNR as a Percentage of Face Amount

Gross Liability					
Qtr of Death	Total	In-force Face:	Average over qtr:	% of average	% in-force
3Q '03	255,000	125,098,835	62,549,418	0.41%	0.20%
4Q '03	717,438	208,011,566	166,555,201	0.43%	0.34%
1Q '04	908,600	298,529,194	253,270,380	0.36%	0.30%
2Q '04	792,400	252,774,337	275,651,766	0.29%	0.31%
4Q '04	5,000				
Grand Total	2,678,438		Average:	0.37%	0.29%
			Average of last 3	0.36%	0.32%
			IBNR Estimate	907,428	811,189

The third method was to use the average number of days to report a claim and the average amount of deaths over that time period (Exhibit 8). This was calculated to be fairly close to the first method, so the first method was used.

Exhibit 8. Life IBNR Using Average Lag

Average lag in reporting (days)	17
Average q_x	0.015
Face Amount In force	253,000,000 (1st qtr)
IBNR Estimate	176,753

A second refinement was in the quarterly trend analysis for life and annuities. The original process was largely at a high level and on a gross basis. The new trend analysis incorporates a look versus what was planned in the annual business plan, on a gross and a net basis. It also looks at some measures that are common on the health side, including a paid-loss ratio. Another goal of the new trend analysis is for it to be the same across companies. The new trend analysis gives management better metrics to look at to determine if there are in any errors in the valuation, and is very helpful in reviewing how the business is doing. The trend analysis will also allow management to more quickly see when the assumptions are incorrect.

Another issue that was discovered during the documentation and testing was that the processes were not similar across companies and products. Because the company has acquired additional companies along its history, the processes were sometimes unique to a particular company. In order to streamline documentation and testing, it is more beneficial to have all the companies perform the same process. This was a standing goal of the chief actuary, but it was never given high priority until Sarbanes-Oxley. After

reviewing the documentation and seeing the process in action one quarter, it was determined where several changes were needed in order to make the processes more efficient and less prone to error.

Sarbanes-Oxley helped in several other similar ways. There were reforms that were needed, but the time was not taken to do them until Sarbanes-Oxley pushed the issue. Sarbanes-Oxley will help many companies in that respect. Another benefit is the reduction of regulatory risk. The benefits will be monetary in cost avoidance, but also largely in process improvement for most companies. Two other benefits for the entire company are change management and network security.

Recommendations

Complying with Sarbanes-Oxley is a large undertaking for any insurance company. Based on the project done at this company, there are several recommendations that can be made in order to help companies that will have to comply in the future. or to facilitate future projects that are similar in nature.

The biggest one is to start as early as possible on the project. At first the company was ahead of many others in the industry, but as the project progressed there were some conflicts that caused it to go behind schedule. Leaving time at the end of the project for contingency planning is important. Also the project will probably use more resources than initially anticipated. Another tip is to involve the independent auditors early on.

The auditors can give valuable feedback throughout the project, so the earlier they are involved the better. One example is the testing of the valuation software. The

actuarial department had determined that five policies of each type should be sufficient, but needed to see what the independent auditors thought. Because the independent auditors believed that a total of 35 would be sufficient, the actual total of 40 was within their acceptable limits.

Another recommendation is having a diverse project team involving many areas of the business. By having a team consisting of finance, actuarial, operations, corporate management, project management, and internal audit staff, the project team was able to handle all affected areas efficiently. This company hired consultants familiar with the Sarbanes-Oxley Act, and they helped in understanding it and complying with it. By using consultants the project team was able to gain access to their resources, including their interpretation of the act and the consultants helped the project team keep abreast of the latest updates.

One difficulty encountered was explaining the documentation to the auditors. Because actuarial had been done separately, the auditors had trouble understanding the full picture at first. A better way to handle this situation would have been to give them the actuarial documentation along with the relevant finance documentation, or have combined actuarial and finance into one process.

One key success factor is having support from top management as compliance with section 404 requires a lot of time, effort, and money.

Conclusion

Sarbanes-Oxley compliance is not easily accomplished. It took months of work at this company to go through all the phases of complying, the documentation of the

processes and their risks and mitigating controls, then testing the controls, and finally remediation. The process taught the project team about the business, showed inefficiencies in the processes, reinforced what is learned in the actuarial exams, and helped the team to expand and improve project management skills. The implementation of Sarbanes-Oxley created a culture change from documenting only control failures to positive evidencing of controls working effectively. Sarbanes-Oxley covers much more than just the internal controls discussed, but it is a large part of where the time and effort is being spent by companies as they get ready to comply for this year-end.

What's next for Sarbanes-Oxley? The NAIC is looking at something similar, possibly expanding their management discussion and analysis or a separate regulation. There will be additional costs to include statutory accounting as it was excluded from the scope of Sarbanes-Oxley.

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