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Session 92PD Unified Valuation System Update

Track: American Academy of Actuaries

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Summary: This session outlines the current status of the work being done by the AAA's Valuation Task Force. The panel discussion includes an update on work being done by the SOA and the NAIC to further development of a Unified Valuation System.

Mr. David K. Sandberg: We're here to talk about something called UVS. That's Unified Valuation System. If you could do valuation once to meet all of your needs, why not use that more efficient approach? Three years ago, the Life Health Actuarial Task Force (LHATF) of the NAIC asked the Academy, "If you could start statutory reserves with a clean sheet of paper and throw out a hundred years of rules upon rules and modifications and just start from scratch, what would you do?" At the time it seemed very blue-sky and theoretical. It was seen as a nice idea. Most everybody was for it in general, but felt it could not occur in practice. I am increasingly convinced, though, especially in the last six to nine months, that much of the work that this group has been doing has been very important work. It's at the core of what we are as actuaries and what it is that we do. We're basically trying to look through the financial reporting process with a more efficient kind of filter.

Some of the common issues that are emerging in financial services in general deal with the situation where you have transactions with mostly sophisticated companies and unsophisticated individuals. The concern is, will you have money there in the back end? How much of these large dollar amounts need to be held today for the future? We have this issue where we have both insurance products and bank accounts with some kinds of guarantees behind them. Banks and insurance products are meant to be more than just going to Las Vegas and gambling. There's some type of security promise that's involved. Because of that, we have developed the current reserve and risk-based capital (RBC) system. Some of you may be more familiar with this, but I just want to make sure everybody gets a quick background on where we've been and then we can move along to where we are today and where we are going in the next year or two.

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Certainly, the RBC developments in the last 15 years are a significant improvement over where we were before, thanks to the idea that a company should have an amount of capital that's needed to make sure that it can fulfill its promises. But the RBC development was based on the current reserve system, which was a set of factors. You develop factors to apply to those factors, and it applies to reserves, premiums, and asset types. There's a certain great convenience about having factors available when you're projecting models, and it does make things much easier initially. But it avoids some of the hard questions that are not as easily answered. Most every session I've attended here has been trying to address or discuss, "What's the real risk underneath the factors? Are the factors too conservative or are they too aggressive?"

The current system is challenged because there are many product designs not adequately addressed. As a side note, even the accountants are wrestling with this. There is a task force at the American Institute of Certified Public Accountants (AICPA) whose sole work product is to deal with the many product designs in the last 15 years that have come about, from variable products with certain guarantees to annuities with bonuses, 2-tiers or market-value adjustments, and products with derivatives involved in them. They have to fit them into *Financial Accounting Standard (FAS) 91, FAS 97, FAS 60*, and, of course, *FAS 133*. How do all these products fit into standards written before the products were developed? Well, it is a very awkward fit. In conversations with one of the members of the group, he said, "We're trying to find rules that make sense, but we just feel like it's not fitting. We struggle to get our arms around it."

In addition, emerging experience is not reflected. Whether I have vastly improved experience in mortality or have worse lapses really doesn't impact the valuation process. It's all transparent to it. Nonguaranteed elements are not reflected.

Some risks may not be appropriately addressed, particularly risks in the tail that are not covered under normal RBC standards.

The margins are implicit. You just don't really know how much or how little conservatism is required.

You are also getting inconsistencies and unique benefits across and within product lines. This project came at the request of regulators because they (and the Academy) were spending an amazing amount of time trying to look at, for example, a variable annuity with product guarantees. You first have to go through and model all the risks, then think about how to take that risk and fit it into a formulaic approach. With a lot of good work people said, "Here is an approach that will work, but it only works for this specific kind of benefit guarantee design. If you change the design, you have to go back to square one again." And so the NAIC has been very interested in trying to make some changes.

The current system also leads to attempts and company strategies to game the risk profile. Perhaps at your company you don't do this because you really want to do the right thing, but in the bank industry in the early 1990s that was not the

case. They had very specific asset/liability (A/L) designs that were designed to take advantage of the factors that were required. And so, you focused your asset strategy, or your product development strategy, on design-related issues as opposed to the true risks. And it's very clear now that the bank regulators realized they learned a lesson, and they now are very adamant that factors do not work. The end result in the late 1980s and early 1990s was that the long-run risk actually increased.

Another nice example is the XXX issue of X factors. Look at X factors. Even in our own company, we had a GAAP issue come up and somebody developed a solution using X factors. At any rate, it's been around for a long time and you're wrestling with how to balance conservatism with a competitive market. And, clearly, there's a controversy. Mortality is improving, but my pricing requires me to hold too much capital. This isn't right, so you've had this dilemma going on for quite some time. I think it's interesting as I talked to regulators in the U.S. and they want to know if XXX is requiring the right amount of capital. Well elsewhere, like in Canada, companies often show a profit when they sell a term policy, because their approach is a forward-looking approach.

Is XXX another opportunity to game the system? How has the industry responded to it? Someone published a study recently showing their initial survey results, and I don't think they saw anyone raising premiums. They did see some eliminating of the guaranteed premiums, reducing the long benefit periods, and some use of offshore reinsurance. My conclusion was that in most of the cases the company is basically just taking the risk. The reserve issue may be 10 or 20 years out and perhaps reflects the company's view that nothing's really changed about the risk of the product. It's just been talk about how to report it.

Lastly, I don't want to complicate our lives anymore, but as I've listened or read about looking at an embedded value or value of a company, the approaches take a baseline where you start with distributable earnings, which are based off of a factor-based system, yet there is rarely a discussion of whether those original factors are way out of line. And maybe the term factors are right, but what if I want to compare it to a P&C company or a bank? We need to be able to think about how do we get those initial capital requirements to more appropriately reflect a better assessment of the risk.

And, beyond the designs that most of us are familiar with, there are multiple benefit products, solvency comparisons to banking, life versus P&C, and between countries. So, the approach of the task force was to try to develop a principal-based alternative. You want to determine the resources you need to accept risk and to meet your obligations. The acceptance of risk is based on events with probability distributions of varying degrees of credibility. The company is trying to decide if it is solvent and are its assets adequate to meet the risks it has taken on today and how to manage that risk process going forward? Then, in addition, how does the company look given its current business plan? The company is going to be making decisions, and is that business plan going to be improving its position and

what things might put it at risk? So, you're really talking about expanding the valuation actuary role to a required capital or RBC role.

The last idea on this is that the company is responsible for the risk-management measurement and control. You have to change the regulator role from one of chasing down and giving busy work to a company to one where the regulator says, "Tell me what this company is doing for risk management." More about this later, too.

Next, key steps. You need to specify risk distributions: means, variances. Then you need to find some standard, and, again, that's more of a regulator issue. By the way, an important distinction—to talk about a chance of failure or probability of ruin of 1% or 5% doesn't mean that out of 100 companies this year 5 of them will fail if I'm at the 95th percentile. What you're trying to do is say, what is a prudent level of assets that I should be holding to meet these risks that I'm required to hold? And at some point in time, that should be adequate a large amount of the time. The company will rarely need to use surplus. The probability-based standard is not "predicting" the likelihood of a company going down, but it is intended to create an early warning system, a trigger, and a flag. In a sense you've reduced the value of the put option of the company—it has to fail to close to zero. You're trying to allow the regulators to perform their function, which is to keep a healthy marketplace with companies that are in sound condition.

So, once you define individual risk distributions for mortality, morbidity, interest-rate risk, and expense risk, you then want to look at an aggregate risk distribution, and certainly the whole is less than the sum of its parts. Not every bad thing will happen at once, and so, for an individual product line, what's the worst that could happen? That it won't happen at the same time as the worst thing from another product line. So how do you resolve that issue and how do you determine what's an appropriate level? Additional considerations include possibilities of renewals on the in-force business, and the impact of new business. Plus we want to be broad enough and think from both the P&C and individual group health basis, where you think in yearly cycles, to the structured settlement process, where you make the purchase and you're committed over a 50-year horizon.

Now, the important thing, thinking about this as a principal-based alternative, is that we're not trying to get the perfect system in place. We're trying to find a more robust process. This is an improvement, not the final answer. So, there can be lots of criticisms. We don't quite have all the pieces nailed down, but this shouldn't prevent us from saying it's still the right thing to do. And the process should be tested by the question, does it motivate good behavior? If this is something that's in place, do we see the kinds of behaviors that we think we ought to see?

There's a story I've maybe shared with some of you before where someone is looking for a set of keys that they've lost and it's at night and it's dark. They're looking underneath a street lamp, and someone comes along and offers to help them, and they spend a good deal of time looking and they don't ever find them. So, the person who came in says, "Well, where did you last see them?" "Oh, I

think I lost them around the corner, is the response," but there's not any light there. So, what's the use in looking? I might as well look here." I think the current financial reporting process too often creates data that is dark, and it's not an efficient use of our time. You would like to feel as if your financial reporting process is creating efficient data, and I think often it really gets in the way and does not allow for a lot of illumination. You spend a lot of time addressing, why don't things balance? Working with the accountants and explaining why, for statutory income, sometimes going up is good news and other times bad news. So, you'd like to be able to more efficiently use your financial reporting data to reveal the true risk to the company. You're kind of measuring and assessing the risk process.

And it should also be clarifying, what does the company really believe about its business? I think the extent of carbon copy pricing that we have in the industry is dangerous. A company just says I'll go copy the policy form, the actuary scratches some things out, and they've done a pricing of the product. I'm not saying it's not mispriced, but the tragedy is that the management could come away not really having a belief about the marketplace. And you would expect that they need to really say, "If we're in this market to create value, we ought to feel like we have a knowledge niche and that we're acting on that, and we want to learn about what it is we believe about the process."

So, the forward-looking approach should help you then say we believe something. We're making a bet by being a company in this industry or with this product line. The process should be able to clarify how the company is winning or losing on underwriting and how valid are the guesses about underwriting, field-force behavior, ability to get a rate increase, and the behavior of my policyholders.

And it should provide a way to recognize changes in expectations as soon as they occur. I recall a comment by Dave Babbel about ten years ago. He'd been doing some consulting for a large mutual company who couldn't understand why their statutory earnings had declined over a ten-year period. He said, "Well, you made interest-rate bets ten years ago and you didn't know it, and you are just now learning that you did. The financial reporting process should have been able to clarify that early on exactly when that had happened."

So, that's the past. That's kind of where we've been. That's been the foundation of what we've been trying to accomplish. Well, this is all very nice and idealistic and sounds great, but there's a lot of detail work and additional things that we need to happen. So, what are we doing?

Well, there are three initiatives this year that we're focused on. One is a modeling seminar. We will be putting on a seminar in November linked to the investment actuaries symposium that will be a one-day seminar. The plan is to present a fictitious total company which has five to seven product lines. We've modeled the risks. We've aggregated the risks, and we can do a comparison of statutory process and the UVS process and show that information.

Second, while this is an Academy-initiated project, it's been very clear this is at the core of what the Society is about, too—that is, the study and assessment of risk. So over the last year we have been working with the different sections of the Society that have an interest in this and trying to coordinate and find a way that we can both be supporting each other. We want to get to the same place so that the Society can be thinking about, if this were to come to pass, its involvement with a whole new additional concept. A lot of the focus of the Society has been on the education and training process. Research is an important process, but it's often trying to bridge and coordinate an academic effort. The actuarial research conference last summer focused on building a bridge between academics and practice. They want to make that connection between mathematical and statistical insight and the company's process of better understanding its earnings and its risks. So we're trying to use this as one way to help further some of that discussion and that thinking.

Then the last concept is the idea of the viability analysis, or the risk-management responsibility in a larger context. Initially the idea was to just address with LHATF what it would mean to have a viability report. In the past, it might be called a Dynamic Financial Condition Analysis (DFCA) analysis. We're concerned about trying to make sure we communicate exactly what it is we're trying to say. How healthy is a company? And what are ways that you can go about understanding them?

So, back to the modeling approach. Again, you want to look at the quantification of risk and the required capital for a multiline company. These are the products we're looking at: a term product, a universal life (UL) product, a Variable Annuity Guaranteed Living Benefit product, group medical, disability income annuity, and income-pay-structured settlement.

We want to ensure we are not overly simplifying the example. Oftentimes both in the literature and at the meetings here, developed examples are very simple single premium deferred annuity products or simple GIC products. Well, if we're talking about using this in reality, let's make sure we've flushed this out ahead of time, and we've identified some of these issues. So, we want to make sure we can take on some of these pieces and do it appropriately.

To start, basically we want to be able to clarify, both to ourselves and to others, what we can do today. We're not going to wait six months or a year or two years for the next theoretical insight or the next programming breakthrough. How do you go about looking at a company using the best of what we can put together in current tools and techniques? You'd like to develop it in a way that allows this modeling sample company to say, well, somebody has an idea about a different set of input scenarios or a different way to aggregate risk or a different way to discount cash flows. Then we just apply that to the model and it becomes a question that can be answered maybe in a day as opposed to someone saying, "How will I ever re-create the total company again and go through all that initial work? We'd like it to be a platform for future discussions.

So, the project will determine A/L cash flows for a classically generated risk distribution of these individual product lines and create the total company summary on both a GAAP and a STAT basis for three balance sheets and two income statements. Then the results will show changes over time; compare them to a probability-based RBC approach.

Now, one bit of history is that about a year-and-a-half ago as we looked at the UVS that would comment on earnings performance, capital requirements, and the viability of the company, we said, "Boy, that's all pretty big stuff. Maybe we better start, step back, take a simple approach and just look at capital. We'll leave income for later." Well, on the first day of the year, Sam Gutterman calls to say that the International Actuarial Association (IAA) is really interested in fair value and it would be really nice if this presentation could do some fair-value demonstrations also. And, we'd like to get it this summer, but you know, that's OK if we have to wait until the end of the year." And so we're seeing if we can incorporate that also. The core of it is, once we've build a model that generates cash flows for RBC assessment, you just need to have a process to determine discount rates and/or adjust the cash flows.

In addition, you'd like to be able to say, we're going to fill in the blank in some places. Maybe there's a theoretically correct way to think about the initial scenarios, but we're going to do it this way and just fill in the blank. Someone could suggest a better way, but you also want to be able to add in at some point how credible the data is. If I'm making everything up, that's different from saying, "Oh, I've actually had 10 years of experience or I have an in-force of \$50 million and we really know what we're doing." You'd like to be able to add that piece in.

You'd like to be able to look at the credibility of covariance issues. Are some covariance issues just straining at a gnat? Maybe they really don't matter. Maybe they're very material. Well, we'd like to be able to find a way to understand that.

Some other questions incidentally, not part of the modeling project but that we've discussed, include how much is insurance a financial instrument? There are two key elements that we're struggling with on how to do better evaluations resulting from the nonguaranteed features of insurance. Since my liability performance is also a function of the assets that I'm using, I must have a way to untangle that piece of it. In addition, because of an insurable interest, you may not be able to create a secondary market in mortality. If someone can buy up a set of policies where they win by a bunch of people dying, this introduces a moral hazard issue we would prefer not to have.

At this point I'll turn the time over to Donna Novak, who is a Senior Manager at Deloitte & Touche and the person who's been managing and leading the modeling seminar project.

Ms. Donna C. Novak: I'm Vice President of the Financial Reporting Council at the Academy. While watching the UVS project for a number of years develop, there was a lot of feedback that we were given that, essentially, the industry wasn't

ready. The actuarial science wasn't ready to do this. I think a lot of us didn't believe that we were ready and had the tools, myself included. And so we came up with the idea to create a model that could prove that UVS can be done.

And that's what this project is all about: proving that UVS is practical enough that it can be implemented, and not just from a regulatory perspective. It started as a regulatory issue, but I've always seen it more as this is what the industry should be doing to manage and evaluate its risks.

The most important goal of this project is to make sure that the modeling matched the real world. We structured the modeling and the modeling approach around the way companies would normally do business. And it's also going to be used as the platform for fair-value modeling and tinkering. When Dave and I first started talking about this, it sounded like a good idea. You're trying to build a model, primarily using volunteers, that is flexible enough that it can handle anything that Sam Gutterman and a lot of other people might recommend for fair value. And if any of you have been following any of the storm of e-mails on fair value, you know that there are a lot of creative ways, not only in this country, but internationally, that actuaries are looking at on how to calculate fair value of liabilities. We have narrowed this platform a little bit, and, as Dave said, what we are going to be creating is a series of cash flows and some flexibility in discount rates.

The real world is that normally a company has a number of divisions. Each division potentially has their own actuaries for each line of business (LOB), and each one has their favorite model, be that TAS or a homegrown model, in the company to do pricing and financial forecasting. So, if we're going to create a platform that was going to duplicate the real world, we felt we could not simplify it or create one model fits all, because that's not the way the world works right now. So we have a volunteer for each LOB who's using the platform that they're most familiar with, and in order to do this, we've created a common input to each one of the LOBs and then an output model that will pull all of the output from each LOB together into the company view. We felt that this will reflect reality and what companies would have to do if they were going to implement a dynamic financial analysis (DFA)-type approach to financial forecasting and financial risk management within their company.

We also are asking for volunteers from industry to help us make sure that this does reflect reality. There are some simplifications that will be made, but we don't want to end up at the end of this effort and have people say, again, that you simplified it so much that it doesn't reflect what would have to be done in a company.

The inputs are being coordinated through what we call "the worldview." The worldview generates the same financial inputs for each one of the LOB models, and then there's a company model that will take all of the output from the LOB models and bring it all together in the income statements and balance sheets that Dave mentioned.

It's our intention to run 1,000 iterations, that is 1,000 samples through the models projecting out 30 years. We do have a group medical model that will only project out 5 years and then keep that terminal value steady for the following 30 years, which is similar to the way health blocks of business or health companies are appraised.

We're going to start with the end of 1989. The reason we went back so far is that then we could have periods of time where we knew what actually happened, and, again, try to look at how well the modeling can predict.

We're going to run three series of iterations. After the first 1,000 are run, we will have 1,000 income statements and balance sheets. The question is which one do we use for the next series of runs, because we're not going to run 1,000 off of each one of those 1,000? So, we are going to choose at least 2 of the outputs from those 1,000 to then use as our basis for the next series of runs, which will go another 3 years ending in 1995.

The worldview, as I said, is Mark Tenney's. Mark Tenney is responsible for building that model if anyone wants to talk to him afterward, and I think he has it pretty well built at this point. And it will produce these 1,000 inputs for the LOB models that will have interest rates, the T-bills inflation, and a number of other elements that are needed by each one of the individual LOB models. Treasury yields, corporate bond yields, default rates, total return equity index (S&P), inflation, unemployment, mortgage prepayment, mortality shocks, and the short-term borrowing and lending rate are among the items that are going to be produced by the worldview so that each one of the individual LOBs is working with the same input and the same assumptions.

In addition to the worldview input, each model may generate its own LOB inputs. If it has an element, for instance, in group medical maybe the medical trends is inflation, which is not being used by any of the other models, the group medical would generate that LOB itself. And there will also be assumptions that weren't necessarily being generated by each one of the individual models. In the case of group medical, for instance, the Incurred But Not Reported (IBNR) as the percentage of incurred claims might just be an assumption that's made.

In an actual company you start with balance sheets, blocks of business, and assets. You look at last year's financials to determine what you're premium base is and how many policies you've written. We're going to have to make that up for each one of the LOBs. We're going to have to make up a starting profile for a company. We're going to have to determine what the premium volume is for each one of these LOBs, what the policy types are, what size they are, and the demographic mix for each one of the LOBs.

Each one of the LOBs then outputs its assets at both book and market value because again we're looking at a fair-value platform going forward. The liabilities at the end of the period of time, as well as the cash flows, and, for instance, also where you have a liability such as the IBNR for group medical and you would have a

cash flow on how that runs out, because if we're looking at fair value of liabilities, we have to associate the exact cash flow associated with each one of those liabilities. And that's possibly going to mean some modification to some of the current models that are being used.

The company model then will take all of the outputs, the assets at the end of the time period and the cash flows, and it will add company-level information, overhead, capital investments, free surplus, and what happens to the free surplus and the assets behind that free surplus. So, the company model is actually very complex because it's not only just adding up all of the LOBs, but it's adding some modeling of its own on some of these elements that are done company-wide.

Just a few very brief comments on fair value. I think there have been some sessions on fair value and certainly we're not going to go into that in depth, but the company model will take the liability cash flows from the LOB. It'll have the flexibility to increase those cash flows for conservatism or add margins to the cash flows. Again, these are different techniques that are being discussed on how to do fair value of liabilities. Substitute market values for book values of the assets. Use varying discount rates.

Again, I think we've talked a lot about S-curves. At varying points on the S-curve are your different RBC levels. Based upon what percentage target you have, you hit a different point on your S-curve.

There are some S-curves that came out of some of the original modeling that was done in UVS, and it's interesting that some of them are really quite flat. We'll be interested to find out how our S-curves from a company level with all of the LOBs add up. Dave mentioned the covariance. Under some scenarios with multiple LOBs, do you have the offsetting covariance that we instinctively think is there?

The theoretically correct approach to do the S-curve is to literally run each one of the scenarios until you've determined an initial capital that keeps you solvent for all 30 years. There are some of us who are a little concerned just about running 1,000 scenarios, much less running iterations of each one of them. So, in order to solve that problem what we're going to do is discount all the quarterly surpluses to the beginning assets, determine what the minimum amount is, which could be negative, and then determine what the beginning assets should have been based upon that minimum. It's not 100% theoretically correct, but it will allow us to sleep a lot more.

Speaking of even running 1,000 scenarios, we've calculated this out, and some of the LOB models may run as long as a couple of days, and if you've ever tried to keep your computer up running the same thing for even a couple of hours, there's a little bit of concern that it might not be practical to run all 1,000. So, again, Mark Tenney has been helping us determine a more efficient way to run the models. What we're going to be looking at is some techniques used by Columbia University called "low-discrepancy sequences" in order to choose a minimum number of iterations that would have to be run in order to get convergence of our results. If

you want to know anything more about that, you'll have to talk to Mark. He's arranging with Columbia to be able to use their technology to do this. It's also an area where the academics may be able to help us once we've completed this process. At the symposium that Dave mentioned, we are going to invite a number of academics to present papers on our process or any suggestions they may have for improving it going forward.

The project plan is being revised. We want to keep a pretty aggressive plan to give us some room to handle the surprises that we know are going to come up when working with new models, new software, and a number of different platforms, and running, if not 1,000, a lot of scenarios. We're going to try to keep a pretty aggressive schedule so that we make sure that we've completed our assignment by the symposium.

Dave is going to take over again and talk about viability analysis.

Mr. Sandberg: In June at the NAIC meetings, the Academy presented a report to the LHATF. It's not intended as a definitive report. It's more of a brainstorming kind of memo saying, here are some key concepts that are important. When we talk about risk-management viability, what is it we really mean? The paper is meant to set up a way to structure what would be involved in that. In addition, we wanted to illustrate, as the modeling project is doing, what companies can and are doing today. Is this something that you'd have to wait three years before anybody can do it or is it really a process and a way of thinking that you can identify as already being done and you just want to be able to focus more on that kind of a process?

So, again, going back to the issue of who's responsible for it, you're really saying the companies need to do a self-analysis of their ability to identify and evaluate manager risks. And in the same way that an internal audit team says, "What risk do we have and how well do we monitor the controls in the company?" you're trying to use that same kind of concept for companies to think about how to manage and evaluate their risk-assessment process. It would be a report that would be presented to the board of directors. It should be available if there is some control level that's missed. In Canada when they instituted their dynamic capital adequacy testing (DCAT) within a year or two there was a company that fell into this control level where they should have been seized by the regulators, but they had a viability plan. They shared it with the regulators. The regulator saw they were right on track. They saw the direction of the company through their plan, and they said the company should continue to manage itself. The company was able to recover and get back on track. You'd like to have this available so that if a company does get into trouble, someone can evaluate and see what the key assumptions are behind the company.

But it should also be confidential, and that's a current roadblock. The GAAP disclosure issues mean that if the board knows of a risk, it's supposed to disclose it. How should we handle that issue? Well, we need to identify the issue and point out that for this to succeed there needs to be language allowing confidentiality.

The risk-management process itself is fairly straightforward. In one of the sessions yesterday, a risk-management process was described in terms almost identical to that suggested by the Academy. It is basically: identify the risks, analyze and measure them, understand what the key parameters are, and evaluate and establish some kind of loss exposure. If there are any recommended changes that need to occur, then they can be done; and there should be some kind of report that comes out of that.

The Academy report also includes some examples of what's currently going on. There is a large mutual company and their projections over a three- or five-year plan.

Next, there is a fraternal organization. They believe they need to be doing this kind of analysis to add to and manage the value of their company.

Then there is a small stock company. Their current approach is a list of questions on how they were doing on their risk-management process and what things they thought they needed to be looking at.

A criticism of this effort has been that company management doesn't want to know the risk, because then they're responsible for them or they have to disclose them. Well, it's also true that you're just as much exposed if you don't do something. In Germany there is a law called KONTRAG. It holds the board of directors liable for the risk management of their companies. If they are found to be negligent in the process they are disallowed from sitting on any board in Germany.

As I understand it, I think the bank laws also have similar kind of provision, that if the bank management is found to be negligent in risk management, they cannot sit on a bank board in the future. So, people are coming to grips with the realization that someone needs to be looking at this.

The Web site for the report that was given to the LHATF is on the Academy Web site. That's www.actuary.org. You have to drill down. There's a finance section, there's a public policy section, and there's a public statement. It's under financial reporting 2000, and it will say, I think, "June Report to the NAIC on Viability Analysis," if you want to see additional information on that.

It's been an interesting process for me to think about what is influencing change. And there's no question that we're facing a lot of change here in the next couple of years. They're coming from a variety of different directions. One just very immediate one that we've already seen occur is that the determination of C3 risk will be improved for this year. This year's statement basically says, take a look at the risks. Do an analysis of it, and that should be a factor in setting your capital. You could actually end up with cash-flow testing actually contributing useful financial information beyond just kind of a "thumbs-up" or "thumbs-down".

Here are some of the factors internally that are influencing this direction. Companies want to know, do I have enough capital to cushion surprises? How

much capital should I allocate to each product line? How does this impact the product pricing and performance measurement process? Is there too little or too much reinsurance being used? And, are there other financial market alternatives?

Now, within the context of the traditional U.S. company, these questions have always been there, but I think there's another external factor which is the increasing internationalization of our companies. For example, my company, Life USA, started 13 years ago with 5 people, a roll of quarters, and \$10 million of borrowed money that was backed by Transamerica. They were the huge reinsurer.

Starting from that perspective, I thought how could we ever get any bigger than Transamerica? Then a few years ago, Transamerica was bought by Aegon and are a subsidiary of this international company. Our company, in turn, recently was bought by Allianz, which is, I think, the second largest insurance organization in the world. And, as part of an international organization, that prior list of questions about capital allocation and performance measurement has become extremely important.

In addition, the increased awareness of surprises, increased product complexity, and particularly the Gramm-Leach-Bliley financial services reform bill is going to have a major impact on how we view ourselves and what we're doing. A year-and-a-half ago, I would have said in the UVS committee, it's five, ten years out and is going to take a long time.

While these issues can be complex, if we decide we're not going to get there very fast cannot more adequately describe and present some of this information, decisions will be made that I think will not be good in the long run.

Just so you are aware of the international level, one of the UVS subgroups did a summary of what's happening internationally. This is a report done actually two years ago. Even then it was clear that the trend was to actuarial judgment away from formulas to determine capital adequacy. Explicit margins were important, too.

What's also happening on the international level is the regulatory questions. There are groups trying to recommend how to standardize insurance required capital across countries. In addition, not only is it part of just insurance, it's financial markets in general, and I think there are several (I'm not as familiar as some of you maybe) different organizations trying to say, how do you go about providing some kind of standard for required capital?

Allianz Germany, my parent company, owns 700-plus companies in 60 different countries, and they are both life and P&C. And so, for the first time, I think life and P&C actuaries are starting to say, well, what's our risk? How do we compare ourselves to each other? And in addition, the life practice area is increasingly getting a lot of what I would call end-tail distribution of financial risk that needs to be better understood. And so, the use of analytical techniques to describe what's

happening for high-impact, low-frequency events needs to be thought through on the life side.

Fair value directions. It's clear that both the FASB and the international community have a strong interest in fair value. To do it correctly, you need an evaluation of risk. The International Accounting Standards Committee is even recommending that fair value should be tied and linked to the process you use to determine your required capital.

The UVS process should contribute to better supporting the risk and solvency issues and the fair-value framework, and be able to look at required capital across product lines, countries, and financial institutions.

We need to continue organizing the linkage of the research in practice with the Society.

Of course, one of the outstanding issues is the framework. How this will occur, right now, is totally up in the air. Between federal, state, international, what kind of framework is going to be there is anybody's guess.

Timing of the process. In some ways there's this tension on fair value or market value. The intent is to know what's the value today? Yet much of the techniques we currently use might lengthen the current reporting process. So, if three months later I'm reporting the market value for something three months ago, are people clear on the differences and the expectations and understanding of what's going on there?

Then, in addition, there is just developing additional tools. Developing standards of practice, and additional training that need to go on both internally as actuaries, but with management and within a regulatory structure.

Interested parties. It's clear an increasing number of people are going to have an interest in this.

Who's responsible for risk management? We talked about this a little bit earlier. I think it's an important idea of thinking through what happens if the company's responsible for risk management. It was enlightening to me when we had a chance to talk to the Federal Reserve Board earlier this year.

A few of us had a chance to just discuss current capital regulations in the insurance industry and where we're going. They shared the lessons that they learned in the early 1990s to develop the system as they currently work it. They go in. The company reports on its risk-management process. The company is then evaluated or best practices. They're compared to best practices in the industry, and they're told, you're in the top, in the middle, or in the bottom of the best practices. The accountability of the management for making sure that they are doing a responsible risk-management process means they're very interested in staying up-to-date with current best practices. I asked if they had banks that don't want to do

this. No. If they are in the bottom tenth percentile of risk management, they recognize they're liable if something blows up. And they want to make sure that they're staying up-to-speed with what the current practices are.

I think it's a very different awareness of who's responsible, because now the regulator doesn't have to say, "Well, the company has just answered my five questions, and they say, we're done." You can't do anything. You have to find some little rule before you can come in and do anything else.

Again, confidentiality is key to this. Confidentiality allows the banks to be much more open with the examiners, and in addition they're getting evaluated on how they're doing.

Perspective on the change process. We're in the middle of change, and some change occurs incrementally. You change your tactics, such as our time line for the modeling seminar. Originally we weren't sure if we were going to do it around the valuation symposium or later in the year. Now we know where we're at.

In contrast there is the decision to change a strategy.

Within the financial reporting community at what point do you jump off the current boat and get in the next boat? And is the other boat all ready to go? Does it just need a little bit of cleanup work, or are there still some fundamental things that need to be addressed? Let's make sure though that once they're done though, we're ready to step in. It's very difficult to think about the new boat in the current system.

I have spent almost three years with this, and I still encounter times when I think, "Oh, we can't do this". Well, that's because I can only change one step at a time, but if I'm just in a whole different situation, it takes a little extra effort to think back and say "maybe that will work out."

One way to think about this is that I know that all of us have our criticism of cash-flow testing and how it could be better, but how would we feel if as an industry we didn't do cash-flow testing? Maybe a few companies did it because they had the technology, but we were talking to the Fed or to the banking industry. I think we'd say, "No, we're not, that's not where we should be. We should be in a different place." I think we're glad that we said, "Yes, we should have that technology. Yes, it could always be better. It could be done more efficiently." There are improvements that could be done, but that is the key way to think about what it is we're trying to talk about here. As a whole, are we going to be better off with this bottom-up change? What are some of the sources influencing that? Obviously company developments in research, whether at the national or international level, academic research to society, various academy committees, and the academy's standards of practice.

Top-down change is coming from the NAIC level, LHATF, A committees, E committees, the FASB, the Federal Reserve Board, holding company regulation, international accounting and solvency standards, and international corporations.

Mr. David C. Jesionowski: I have a question regarding the model. Will the model for the UL products reflect the fact that the insurance companies can change and respond very quickly in response to decreasing interest rates? For example, interest rates decrease and we can reduce the interest rate credited to policies.

Ms. Novak: They have not specifically talked about that. Most of the models will not have reactive-type scenarios built into them. We have not specifically talked about UL.

Mr. Sandberg: On the other hand, they will have dynamic strategies. An individual line model has an investment strategy. You will be able to model your investment or reinvestment strategy in the same way that you would today. The specifics will depend on the individual modelers

From the Floor: Are you going to have different models for policies prior to XXX and those issued after XXX?

Mr. Sandberg: I hadn't thought about that piece of it. We'll have to see. That's a statutory reserving piece we may have to take a look at.