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Session 68TS Communicating Financial Impact of New Products

Track: Product Development

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Summary: Profit measures such as profit margin, statutory return on investment (ROI), and return on equity (ROE) have been used to make decisions concerning new products. Does your CFO understand these measures? Are you able to explain them to your CFO or Chief Marketing Officer? What impact do these measures have on a company's financial statements?

The authors of the new SOA textbook, Life Insurance Products & Finance, provide answers to these questions and more during this teaching session.

MR. JAMES W. DALLAS: David Atkinson is executive vice president and chief operating officer of Reinsurance Group of America, RGA, and he also serves as chairman, president, and CEO of RGA Reinsurance Company, RGA's primary operating company. David is an FSA and has written several notes on pricing and more recently, co-authored with me, *Life Insurance Products and Finance, Charting the Core Course*, which is used on courses five and eight.

MR. DAVID B. ATKINSON: Let me introduce Jim Dallas to you. Jim is senior vice president of financial markets for RGA. He joined RGA in 1994 and held a variety of actuarial roles for us. His current position focuses on developing and marketing creative financially motivating reinsurance solutions for RGA's clients. Jim is also an FSA and has recently co-authored with me, the book *Life Insurance Products and Finance, Charting a Core Course*.

MR. DALLAS: We plan to act out a play in three acts. Each act is going to be a conversation between two key individuals at our make-believe company. In all, we

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will be role-playing the pricing actuary, the senior VP of investments, the chief actuary, and the chief financial officer.

Our illustrious company plans to demutualize soon and undergo an IPO at the beginning of 2002. All business in force as of the IPO date will be walled off in a closed block, and the profits of that business will not be available for the open block. After that point, our company is going to offer two products, a level-term plan and a single-premium deferred annuity (SPDA). These are two popular products in the United States. All of our projections reflect only the results of those products and the capital raised to support the writing of those products.

MR. ATKINSON: A little more about our make-believe company. We assume the company starts with \$250 million of capital raised through the IPO. This capital should be sufficient to support an initial level of \$40 million of level-term premiums and \$1 billion a year of SPDA deposits. As we work through these examples, you'll see that the company's going to need some additional capital down the road. We'd like to have some fun with our play and examples. We'll also cover a variety of products, statutory accounting, GAAP accounting, the effect of pricing on GAAP earnings, and also communicating with others within your company.

Before we get started, we want to thank one of our fellow RGA associates back home, Dustin Hetzler. He built the models and all the examples that this session was built on. He couldn't be here today, but we did want to pay a good thank you to him. Finally, I'd like to thank my wife, Brooke, who has graciously agreed to be our emcee and introduce the various acts and scenes.

MS. BROOKE ATKINSON: Act I is entitled Establishing a Common Language. In scene one, Dave, the pricing actuary, calls Jim, the senior VP of investments, on his cell phone to establish interest assumptions for a new SPDA product.

MR. ATKINSON: Gee, I'm running out of time here. I really need to get some interest rate assumptions for that new SPDA product. Where is that phone number for that guy at the investment center? Here it is. Okay. Let's see if his eminence, Jim, the senior VP of investments is actually in his office.

MR. DALLAS: (Enters the scene, with golf hat on, attempting a putt at the golf course, answering his cell phone.) This better be important. Hello.

MR. ATKINSON: Hi Jim, this is Dave, the pricing actuary. We were here at a meeting last week. I need to get some information from you. I'm working on interest rate assumptions for our new SPDA product.

MR. DALLAS: Well, I'm a little busy right now. Can I give you a call back in a few minutes?

MR. ATKINSON: Okay. While I've got a few minutes waiting for Jim's return call, I

wonder if we can kind of put our heads together and work out what kind of information we need to share with Jim about this new product. Audience, this is your role. What kind of information should we be talking about when Jim calls back? Go ahead.

Volume of deposits, maybe? What else? Interest rate guarantee. What else? Penalty-free withdrawal provisions. Okay, there you go. Credit risk. What else? I have room for one more. Bail out provisions. Okay. Let's go ahead and move on here. I'm back to the office. Hello, this is Dave, the pricing actuary.

MR. DALLAS: Jim here. What's this about a new SPDA product you have coming out?

MR. ATKINSON: Hi, Jim. I'm working on developing a new SPDA product, and we need to get some interest rate assumptions from you. I was just talking to a bunch of our actuaries, and we put together some background information that you'll need. How about if I e-mail that to you right away? But the main thing that we figured out is that we need to earn a spread of about 210 basis points.

MR. DALLAS: What? A spread of 210 basis points? Did I hear you correctly? There must be something wrong with my phone!

MR. ATKINSON: We need 210 basis points to cover expenses and make a fair profit.

MR. DALLAS: Are you crazy? We're only averaging 80 basis points on most of the current portfolio. There's absolutely no way we can earn that kind of spread without investing primarily in junk bonds or other high-risk investments.

MR. ATKINSON: That makes no sense. Our competitors have similar products, and I'm sure they're backed mainly by high-quality investments. I bet most of them are earning a spread of 200 basis points or better.

MR. DALLAS: That's impossible. Come on, Dave, the average ten-year corporate bond is currently earning a spread of only 100 basis points. There's no way you can stay in investment-grade securities and accomplish a spread of 200 basis points.

MR. ATKINSON: I have people waiting for me. I'll call you back in a couple minutes.

MR. DALLAS: (Calling out to his golfing partners.) Hey guys, you won't believe this guy! I was just talking to an actuary, and he wants me to design an investment-grade portfolio and earn a spread of 210 basis points. I don't think they pay me enough for this job!

MR. ATKINSON: Okay, audience. What are Jim and I talking about in terms of spreads? Does anyone have an idea what Jim's talking about?

Right. Jim's talking about spread over Treasury bonds. What am I talking about?

That's right. I'm talking about the earned rate spread over credited rate.

Those investment people just don't know much. Okay. So back to work. Hello Jim, take a guess. I think I figured out our spread problem. I think you were talking about spreads over Treasuries, right?

MR. DALLAS: Of course.

MR. ATKINSON: And I was talking about spreads over the crediting interest rate.

MR. DALLAS: That would explain it. Two hundred basis points would not be so unusual with that definition.

MR. ATKINSON: Well anyway, I just e-mailed that product information to you. Basically, if you can come up with a portfolio that yields around 7.10 percent and has a duration of five years, I think we'll be in good shape.

MR. DALLAS: I'll look for your e-mail, do the research, and get back to you in a couple of days. I have to go.

(Speaking to Audience.) Okay, David said that we're looking for a portfolio that earns 7.1 percent and has a duration of five years. Are there any other characteristics that Dave should have asked me to build into the portfolio?

Credit appetite? Yes. Portfolio restrictions. Liquidity and private versus public bonds. Other product design features.

I'll probably need to know the cash-flow features, such as how many people surrender at the end of five years on the SPDA products, right?

MS. ATKINSON: We now change scenes. Two days later, David is sitting at his desk. In scene two, Jim gets back to Dave with great news.

MR. ATKINSON: Hi, Jim.

MR. DALLAS: Hi, Dave.

MR. ATKINSON: Hey, how are you doing?

MR. DALLAS: I have another off-site, five-hour meeting this afternoon, so let's get this show on the road. At the top of page three is the investment strategy I'm going to propose. Basically, 60 percent of the portfolio is in high-quality issues with moderate yields, and 40 percent of the portfolio is in high-yield bonds. The portfolio yields 7.45 percent, with a duration of 5.2 years.

MR. ATKINSON: Wow, that's great news! That 7.45 percent yield is 35 basis points higher than I'd hoped for. Now, I get to make the happy decision of whether to increase profit margins, increase commissions, increase the guaranteed interest rate, or maybe some combination of all three.

MR. DALLAS: You know, Dave, somehow that doesn't sound right to me. There's no free lunch. Maybe we're not communicating fully. What adjustments do you usually make for the portfolio's gross yield before you use it for pricing purposes?

MR. ATKINSON: Well, this is my first time, what would you suggest? Now, wait a minute. I forgot that I loaded all five pounds of *Life Insurance Products and Finance* onto my Palm Pilot. I bet I can search that and find some helpful information. Okay, Jim, here are some questions for you. What is the expected cost of default for each category of assets?

MR. DALLAS: Well, the expected cost for the A-rated bonds is only 4 basis points, but the BB bonds are 116 basis points. I think it comes out to an average of 49 basis points.

MR. ATKINSON: And what are our investment expenses for these kinds of assets?

MR. DALLAS: We average investment expenses of 8 basis points for all of our bond portfolios.

MR. ATKINSON: Okay, good. Jim, are the yields nominal, based on semi-annual interest? If so, then the annual effective interest rate is 14 basis points higher than the nominal yield. Is that right?

MR. DALLAS: Well, you know we investment folks only talk in terms of bond equivalent yields; I guess a 14 basis point adjustment to convert to an annual effective yield sounds right. You're the actuary.

MR. ATKINSON: So does that mean 49 basis points for the cost of default, 8 basis points for investment expenses, and then adding 14 basis points to convert to an annual effective interest rate? That 7.45 percent gross yield translates to only 7.02 percent for pricing.

MR. DALLAS: Well, Dave, you're on the right track, but let's get to our distinguished group of actuaries to see if you're right on target.

MR. ATKINSON: What problems still remain with the suggested investment strategy?

Sixty percent A-rated and 40 percent BB-rated.

Does anybody else find any problems with what Jim has come up with?

So that's too much in BB? Does anybody here have a 40 percent BB rated portfolio?

Are there any problems with the duration? We have a five-year CD annuity as our product design. Does anybody see a problem with asset duration? It's a little low. Do you think the liability duration is going to be greater than five for that initial period? Is the duration too long? That about covers it. Jim, that's some good information. Let me just check my Palm Pilot one more time to see if *Products and Finance* has anything more to add. You know what? That's a pretty complete list.

MR. DALLAS: Clearly, I need to do some work to refine the investment strategy, Dave. I'll get back to you in a couple of days. I have to run.

MS. ATKINSON: This is scene three, in which Jim and Dave settle on a more appropriate investment strategy.

MR. DALLAS: Morning, Dave.

MR. ATKINSON: Hi, Jim.

MR. DALLAS: All right, Dave, now that we're communicating so much better, I've been able to design an investment strategy that I think meets all the basics we discussed. I've laid out a revised investment strategy. The portfolio I now have in mind will be a little more diversified, higher quality. We have 10 percent allocations to two uncorrelated high-yield asset classes to boost overall yields a little, and then 80 percent allocated to a high-quality asset class. Investment cash flow is more closely matched to expected product cash flows. Unfortunately, the supportable guaranteed interest rate is quite a bit lower. Our average nominal yield is now 7.15 percent. If you add 13 basis points to the annual effective and deduct 20 basis points for default and 8 for investment expenses, we're down to a net interest rate of 7 percent.

MR. ATKINSON: You know, Jim, these results come much closer to meeting what I call a "smell test." We did expect the competition to be tough but rational. It looks like we're going to have to fine-tune the product impression to make it work with that interest rate of 7 percent and the spread of 200 basis points.

MR. DALLAS: Dave, you know you can't earn 200 over Treasuries!

MR. ATKINSON: I mean a spread of 200 basis points between what we earn and what we credit the policyholder.

MR. DALLAS: Right. Now we're communicating. You know, we've had our share of miscommunications. In fact, we could have really blown it. You could have mispriced the product, and I could have constructed the wrong investment strategy. For example, I assumed you knew all the steps to convert a yield rate to a net interest rate, and we had different meanings in mind when we talked about

spreads. I wonder how many other things go wrong with companies because of fundamental misunderstandings like we've had.

MR. ATKINSON: I can tell you; this is not the first time I've blown it communication-wise. I'm always making the mistake of assuming people know everything I know and use the same words I use. As a result, sometimes people misunderstand me.

MR. DALLAS: You actuaries are amazing. You think the whole world is a bunch of actuaries. Wake up. Learn to read your audience. You can't tell whether the person you're talking to is bored to tears, hopelessly lost, or perfectly in tune with you. Read some body language, and make some adjustments. Not everybody wants or needs to understand every detail of what you guys do. Give me a break.

MR. ATKINSON: Hey, what actuaries do is important! If more people understood it, much better decisions would be made.

MR. DALLAS: Maybe so, but be realistic. You're going to have to work harder to communicate and adjust your message to fit your audience. It's okay to simplify. It's okay to be brief. Many times, you'll have a much bigger impact if you do.

MR. ATKINSON: Well, maybe you have a point. You know, we have a company-wide actuarial meeting coming up, and we're always looking for good topics. How would you like to lead a discussion on this subject?

MR. DALLAS: I don't know. Can you guarantee my personal safety?

MR. ATKINSON: Oh, come on. They'll love you.

MS. ATKINSON: This is scene four, in which Jim leads a discussion of how to build a common language. We join them in progress.

MR. DALLAS: So to summarize, I think every profession needs to realize that its common terms and expressions are very much a foreign language to other professions. We need to work hard to remember this and even harder to instill the common language that will allow us to work effectively and work together.

MR. ATKINSON: Thanks, Jim. Let's give him a big round of applause.

MR. DALLAS: Okay, Dave, let's get some thoughts from our audience. I want everyone to take a minute to write down all the synonyms you can think of for each of the following words: earnings, required capital, and account value. Does anybody see where we're going with this? What are some synonyms for earnings that come to mind?

Income. Pretax income. Profit. Revenue. That's the one I find most confusing. A lot

of people use revenue when they mean earnings. Increase in surplus.

What about required capital? Investment in the product. GAAP equity. How about this: risk-based capital (RBC)?

Can anybody think of a synonym for account value or at least confusing terms for account value? Accumulation value. Fund value. Reserves. Does everybody get the point? I think we all use a lot of terms that others in different parts of our company would find confusing or would interpret differently whenever you use those terms.

Can anybody think of things that a company could do to help establish and reinforce the use of a common language within their own company? Make things simpler. That's a good idea. Make sure that all the parts of the company use the same template and that they know what the appearance of the financial statements is supposed to look like.

Create a glossary. That's a good idea. Put it on the Internet or the Intranet, where everybody has access to it. It means you have to communicate with the people who are publishing those pieces, right? I think that's good. Maybe we were a little harsh in the point we were trying to make, but what are some nonverbal cues that you can pick up on when you're communicating with others?

Phone calls is a good one. That's certainly nonverbal. Eyes glazing over. I try not to do that in this part of it. Yes, body language. How about in a positive sense? How can you tell when they're paying attention or getting it? Whether they're asking questions or a lack of questions provides a clue. Sometimes people fake it by nodding their heads. Can anybody think of ways in which you can adjust your communication style to better communicate with various types of people in today's situations?

In closing this meeting on building the common language, I'd just like to say thanks for inviting me to speak to this distinguished group of actuaries. I think you've come up with a number of good ideas that should help all of us communicate better.

MR. ATKINSON: Thank you, Jim.

MS. ATKINSON: This is Act II, Mapping Pricing Results to Financial Statements. In scene one, David, the pricing actuary, meets with his boss, James, the chief actuary.

MR. DALLAS: Hi, Dave. Let's sit down and get going. I've already read everything you've supplied about the products and our pricing structure, so there's no need to spend time presenting those to me. Just show me the results.

MR. ATKINSON: Audience, what type of information, other than the product

descriptions and pricing assumptions, should I be prepared in advance to show James, the chief actuary? Do you have any suggestions?

The competitor comparisons. Good. What else? Rationale behind product. Great. Profit measures. Sensitivity testing. What else? Asset / liability management issues. Okay. Got room for one more. Basis for the assumption. That gives you a sense of the credibility. Great. Thank you.

MR. DALLAS: Well, Dave, I'm new to the company, but I'm familiar with the pricing software that we use. I'd like to take some extra time today to understand the pricing output and how well it's reproducing the effect of new products on our financial statements.

MR. ATKINSON: Well, James, most of the pricing output maps directly to our statutory financial statements. For example, the pricing and statutory income statements use pretty much the same names for premium, investment income, death benefits, annuity benefits, surrender benefits, reserve increases, commissions, and federal income tax (FIT). That leaves only the following. Audience, can I get your help? How about acquisition expenses—anyone?

Federal insurance taxes. Okay. How about maintenance expenses? Same. Premium tax. What's it called? Insurance taxes, licenses, and fees. How about pretax statutory earnings? What does that do? Gain from operations. Okay. Before FIT. How about after tax? Where does that go?

MR. DALLAS: Net income.

MR. ATKINSON: Net income. It didn't always used to be called net income. How about investment income on target surplus, what does that mean? That goes under net investment income. Great, and how about FIT on investment income on target surplus? So we have kind of a one-line asset side of the balance sheet. How about reserves, where do those get mapped? Reserves for life policies. How about target surplus? Target surplus is matched where? Total surplus. Okay. There's our elaborate pricing balance sheet. Okay, good.

MR. DALLAS: I guess statutory mapping is pretty simple. Your pricing software doesn't exactly match the statutory income statement, but it's easy enough to figure out. Is GAAP just as simple?

MR. ATKINSON: GAAP is trickier. Let's start with the term product, in which mapping to the GAAP statement is a little simpler. Every company's GAAP financial statements are a little different in terms of how much detail they show, what lines they have, and so forth.

MR. DALLAS: These formats are different from what I used in my old company, but not too different.

MR. ATKINSON: For the term product, some of the results are the same for GAAP and statutory, mainly premiums, investment income, and death benefits. After that it's not so straightforward.

MR. DALLAS: You said investment income was the same for GAAP and statutory. It sure doesn't look like it to me.

MR. ATKINSON: How can we reconcile GAAP and statutory investment income? Let's do statutory on one side, and we'll do GAAP on the other. What are the pieces of statutory investment income? You start with investment income for statutory and GAAP—that's off the top of the pricing—and add to that the investment income on target surplus for statutory.

MR. DALLAS: Right. That's typically shown under the effect of target surplus.

MR. ATKINSON: It totals out to 700 on the statutory basis. On a GAAP basis, this is interest on GAAP reserves. Is that basically right?

MR. DALLAS: Right.

MR. ATKINSON: Typically, you run assets on your own investment income and your net assets. When your net assets are on a GAAP basis, it's different than if it were on a statutory basis. Typically, net is off the back, so there's an adjustment—usually negative in the early years—to get to a negative investment income on your net GAAP assets.

MR. DALLAS: This would be interest on the difference between GAAP and statutory reserve?

MR. ATKINSON: Right.

MR. DALLAS: Then you have to make it up by having interest on your GAAP equity. So it does come out to the same answer, which is good.

MR. ATKINSON: Before you do an investment income on the GAAP, this is sort of above the line, and then it's below the line after you take the effect of GAAP equity and target surplus into account. The first two lines on the GAAP are basically on your net GAAP reserves.

MR. DALLAS: Think of your assets being composed of reserves and target surplus, so you have interest on your reserves, interest on your target surplus. Here you have interest on statutory reserves. By adding to it interest on the difference between statutory and GAAP reserves, we end up with interest on GAAP reserves. The last item is interest on GAAP equity or GAAP surplus.

MR. ATKINSON: The point is that you have the same assets backing the products,

whether statutory or GAAP. In both cases, assets should equal statutory reserves plus target surplus allocated to the product. You should get the same investment income if you add up all the different lines in the two presentations.

MR. DALLAS: What are the GAAP pricing output components of policy acquisition costs and other insurance expenses?

MR. ATKINSON: Let's look at the GAAP output for the term product compared to a company's typical output pages for their actual financial statements. How do we get the policy acquisition costs and other insurance expenses? Do you think commissions are in that number? There's no explicit line for commissions, so they must be in there, don't you think? What else would be in policy acquisition costs? Acquisition expenses, right. That's added to commission costs. Premium tax. Right. The point is, on the GAAP output, you typically don't output all three of those different items. Acquisition expenses, premium tax, and maintenance expenses are all lumped into the same item. One more is a subtraction. Change in DAC, right. Can anybody else think of any other differences between the GAAP and statutory income statements?

Then there's going to be a difference in the way income taxes are accounted for between statutory and GAAP. The statutory is going to be actual tax. GAAP is going to be a provision for income taxes, typically. Can anybody think of major differences between the GAAP and statutory balance sheets? And you're going to use benefit reserves rather than statutory reserves, right?

Market value versus book value difference, yes.

MR. DALLAS: Okay, Dave, now it's time to take the gloves off.

MR. ATKINSON: What do you mean?

MR. DALLAS: What kind of a price map do you have to do with FAS 97, and how do you map it to the financial statements? Which items are removed and which items are inserted when making FAS 97 adjustments?

MR. ATKINSON: Premiums.

MR. DALLAS: Are those removed or inserted?

MR. ATKINSON: Removed.

MR. DALLAS: Okay, remember that—premium to remove.

MR. ATKINSON: Benefit reserve increase.

MR. DALLAS: What else was removed?

MR. ATKINSON: Benefits.

MR. DALLAS: No premiums, no benefits on FAS 97. What were the items that were inserted?

MR. ATKINSON: Surrender charges, interest credited.

MR. DALLAS: Then items changed.

MR. ATKINSON: Three investment income items are collapsing to interest earned.

MR. DALLAS: The point is, your pricing output has to make sure that you capture all those items that you think feed it over to your financial income before you can communicate one-on-one with them as far as what your pricing output has versus how they're used to seeing it.

I think we've exhausted the mapping issue. Now, let's take a look at the pricing results. I've had a chance to review this and frankly, I think you have some explaining to do. Let's start with the discount rates. You show profit margins and returns on assets (ROAs) based on discount rates of 4.55 percent and 7 percent. Why did you pick those discount rates?

MR. ATKINSON: Well, audience, I need your help. Why would you use a discount rate of 7 percent or 4.55 percent, which is 7 percent after tax? Yes, 7 percent would represent a portfolio earned rate. So what does the 4.55 percent represent?

MR. ATKINSON: I can't fathom why someone would discount results using an after-tax investment grade yield like 4.55 percent! When I was doing mergers and acquisitions and worked for companies trying to sell blocks of business, we used to just discount results at 8 percent, 10 percent, and 12 percent. The buyers always ignored the 8 percent results and usually wound up discounting at a rate between 10 percent and 12 percent, even when returns between 10 percent and 12 percent were lower than they were willing to accept. Competition has a way of forcing down the price. I've done some research into embedded values. It seems that most companies use a discount rate or hurdle rate of between 10 percent and 12 percent to calculate embedded values. I just don't understand why you would discount using a before-tax or after-tax earned rate! Investing in life insurance is much different. Usually it's much riskier than bond investments.

MR. DALLAS: You have some good points here, but we only use these low discount rates for profit margins and ROAs. These are simple measures that let us compare one product to another product, and if we use a very high discount rate, the present value of profits would be close to zero and you'd end up with a measure that's less useful to compare prices.

MR. ATKINSON: How about if I poll a panel of distinguished actuaries to see what

they think. What discount rates would you guys use for profit margins? What discount rates do you use? Would you use a rate less than 8 percent, typically, or 7 percent on investments? How many would do that? About ten. Would you discount using a rate more between 8 percent and 12 percent? It might be approaching the rate your investors are looking for. It's probably on the low side. How many would do that? That's more, maybe 15. And how many of you would discount at a rate higher than 12 percent, maybe matching what your investors are looking for? About five.

MR. DALLAS: I think part of the answer would depend on whether you're calculating your profits with or without your distributable earnings or with or without tax, right?

MR. ATKINSON: Right.

MR. DALLAS: So Dave, all the profit measures shown on your computer are using after-tax results?

MR. ATKINSON: Of course. I wouldn't want to ignore taxes, because they have a huge effect on results. Let's talk about distributable earnings. How do you define them?

MR. DALLAS: Well, we assume that we need to maintain required capital or required surplus equal to 200 percent of RBC. This means our initial investment on new business is both surplus strain plus the 200 percent of RBC. Distributable earnings are equal to those after-tax statutory earnings adjusted for the change in required capital or target surplus, plus after-tax interest rate capital.

MR. ATKINSON: Have you thought about which of these profit measures is most appropriate for our soon-to-be-public company?

MR. DALLAS: We have a company that's about to go public. It's formerly a mutual company. Now it's going public and demutualizing. What do you think would be appropriate for this company for profit measures?

Return on GAAP equity, right. Any others? Some companies want to know just the absolute dollar amount in GAAP income. Would you always price an ROE? Would you start with maybe a statutory ROI? Statutory is still important, even though it's a public company, right? Strain is still important, right? Everybody has to worry about strain, right? What your RBC ratios are and all that, right?

MS. ATKINSON: This is Act III, Communicating with Senior Management, scene one, in which James, the chief actuary, meets with David, the CFO, to develop pro forma financial statements needed for the IPO.

MR. DALLAS: Hi, David.

MR. ATKINSON: Hi, James. It's good to see you.

MR. DALLAS: Did you receive the package of material I sent you about pricing results for our two new products?

MR. ATKINSON: Yes, I got your package and I sifted through it, but I didn't really find what I was looking for. Here's what I really want to see. I want to see some pro forma financial statements showing projected revenue and profits for the next three years, with particular emphasis on growth and earnings per share. I need to see how long it's going to take us to deploy that \$250 million of capital, and then how much additional capital we might need in the next three years.

MR. DALLAS: What do you mean by pro forma financial statements? That's not an expression I use.

MR. ATKINSON: By pro forma, I mean financial statements containing numbers that illustrate how results would have been, how we have done under a certain business proposal in the past, or how results are likely to be based on this same business proposal. For example, when a company does an IPO, like we're about to, it's common to show test results as if we'd done an IPO a year ago. What would the results have been in the last year?

Also, we're going to want to have some internal numbers that we might share only with some analysts showing how the company is likely to perform in the next two years, especially on an earnings-per-share basis. That's really important. So, I need you to pull together three years of results for these two new products, assuming \$250 million of freshly raised capital, and of course, \$10 million of annual fixed costs, and illustrate what our future financial statements will look like. That's what I mean by pro forma.

MR. DALLAS: Well, to tell you the truth, I came prepared to talk about profit measures for our two products. I'm not prepared to show pro forma financial statements or answer your other questions. For now, how about if we just discuss the profit measures for each product, and I'll get back to you as soon as possible with the answers to your questions?

MR. ATKINSON: Okay.

MR. DALLAS: Let's start with the term product. You'll see that the profit margin is 8.33 percent.

MR. ATKINSON: James, you know I came from a banking background. What is a profit margin, and why are there four different profit margins?

MR. DALLAS: Well, 8.33 percent is quite good. It's better than our last couple of term products. In the interest of time, let's not get into the other profit margins.

There's no consensus among actuaries of which is the right one anyway, so I like to see several. Moving on, the ROI is 11.73 percent, which is also pretty good. ROE is more of a concern, though. It starts at 6.6 percent in 2002, and it grows to 17 percent in 2011.

MR. ATKINSON: Why does the ROE vary so much? What can you do to fix it? I think you know the company's ROE would start out low anyway, because we won't be able to immediately deploy all of our capital. This kind of ROE pattern will only make our results worse.

MR. DALLAS: Audience, what causes the ROE to be lower in the early years and higher in the later years? Is there anything we can do to flatten out the results? Remember, we're just looking at the term product results, not the overall company results.

Non-deferrable expenses. Anything else? Anything that can be done to flatten out the pattern? Reinsurance. That's a good answer. Maybe you would reduce the pay if you can justify it. Make provisions for adverse deviation.

MR. ATKINSON: What about lack of interest on the deferred tax liability? That will change FAS 96. That's easy.

MR. DALLAS: Okay.

MR. ATKINSON: When I worked for the bank, one measure we always looked at was the ROA. What is the ROA for this product?

MR. DALLAS: Well David, term products don't really generate much in the way of assets.

MR. ATKINSON: Really? It doesn't look that way to me. I see \$58 million of assets, compared to \$105 million of cumulative premiums after three years. I think that's significant. I'd like to see the ROA for this product. I'm very interested in the pattern of earnings. Why is there such a huge GAAP profit in 2012?

MR. DALLAS: Well, the product actually continues well beyond ten years, but with steeply increasing premiums past that point. To be a little conservative, we assumed all the policies lapsed after ten years, and this released all the built-up GAAP reserves.

MR. ATKINSON: Well, that sounds like a schizophrenic approach to me. Either the policies last more than ten years, or they don't. Let's do it one way or the other and be consistent.

MR. DALLAS: No problem. We'll run out our pricing model over a longer period of time. That should take care of the excess GAAP profits in 2012 and spread them

over a number of future years.

MR. ATKINSON: Am I reading this right? If we use \$45 million of capital to write \$40 million of term premium, that's 114 percent of premium. I need to understand why. What can be done to reduce the capital needed?

MR. DALLAS: Audience, why do you think this product uses up so much capital? Who has the number one answer? Acquisition expenses, right. Primarily what? Commissions. Can you think of anything else that would contribute to a high first-year cost other than acquisition expenses?

High first-year capital. Risk based capital requirements, too: it's not just acquisition costs. You have the capital commitment for your risk-based capital. Do you have any suggestions on how to reduce your capital need?

There you go. You guys are good. Well, David, this is just the nature of individual life insurance. Compared to some other term products I've seen, 114 percent of premium is high, but not unusually high, and term products have relatively more required capital as a percentage of premium. It's just the nature of the beast. To reduce the capital needed for this product, I think we should take a hard look at reinsurance. However, we probably won't want to start reinsuring until we have deployed most of our capital.

MR. ATKINSON: Okay, let's move this along. How about a quicker rundown on the SPDA product?

MR. DALLAS: Well, the SPDA product is showing an ROI of 11.33 percent. Capital required as a percentage of premium is 6.7 percent.

MR. ATKINSON: That sounds much more reasonable. That's closer to what I used to see at the bank.

MR. DALLAS: Okay. And the ROE ranges from 8 percent in the first year to 14 percent in the third year.

MR. ATKINSON: I guess that's consistent with the term product, but I still don't like it. We need to work on improving these early ROEs.

MR. DALLAS: Lastly, the ROA is 38 basis points.

MR. ATKINSON: Now, that doesn't sound very good. At the bank, we used to earn ROAs of 130 basis points all the time.

MR. DALLAS: We can't double our returns and remain competitive. We're talking about a very interest-sensitive product here. If you cut the interest rate too much, your sales will drop like a rock. Well, that's all I have today. I'll get back to you as

soon as possible with the pro formas. Okay?

MR. ATKINSON: Okay. Be sure to assume a \$25 initial share price and 10 million shares issued, and that will raise the \$250 million of capital. That should do it.

MR. DALLAS: Okay.

MS. ATKINSON: This is scene two, in which James returns with the pro forma financial statements.

MR. DALLAS: I'm back.

MR. ATKINSON: That was fast. I just got your pro formas. I think you hit the nail right on the head. Those are exactly the formats I was looking for. I like the revenue and earnings patterns. We're showing some impressive growth rates, but of course, we're starting from zero. You know, James, there is often some correlation between a company's growth rate and its price/earnings (P/E) multiple. What earnings growth rates are we showing here?

MR. DALLAS: From 2002 to 2003, if you look at the net income line, we're growing earnings by 64 percent. From 2003 to 2004, we're growing earnings by 43 percent.

MR. ATKINSON: You're not suggesting that we can have a P/E ratio in the 40s, are you? The public life insurance companies I track have P/E ratios in the 10 to 15 range, if you exclude American International Group (AIG).

MR. DALLAS: You have a point there. Life insurance P/E ratios tend to be a little lower than the whole industry, but I think what I'm talking about and what you're talking about applies more to mature companies. Our company is essentially a startup with a high growth rate for years to come. I would expect a high P/E ratio in the early years. Let's see, to get earnings per share (EPS), we divide net income by 10 million shares.

MR. ATKINSON: You'll find EPS at the bottom of the page.

MR. DALLAS: Oh, good. So let's round the 2003/2004 growth rates down to 40 percent and assume a P/E multiple of 40. Now, if we multiply 2003 earnings of 1.51 per share and a P/E ratio of 40, what do we get? Wow, we get a stock price of around \$60 per share only two years out from the IPO.

MR. ATKINSON: This is quite a growth story for us, a mutual company. Maybe our stock price at \$25 is too low.

MR. DALLAS: Yes, but on the other hand, if we look at the ROEs, David, our results are not so good. The \$10 million of annual fixed costs that we have to put in really puts a dent into our earnings in the early years.

MR. ATKINSON: How do we start out with our ROE so low, at 3.63 percent, 5.67 percent? They're even less than the pathetic first-year ROEs you showed me the last time.

MR. DALLAS: Audience, I need your help again. We have a product price that's earning more than 3.63 or 5.67. Both of our products are earning ROEs more than that in the early years. What's creating the drag when we go to the overall company's performance? Fixed costs, the \$10 million. The free surplus. Okay. So what's creating the drag?

The excess capital and investment income earned on excess capital are creating the drag. How do we compute the 2002 ROE? If we assume that our \$250 million of capital earned 7 percent, and it incurs \$10 million of fixed costs at a tax rate of 35 percent, how do we calculate the 2002 ROE if we don't write any new business? Investment income on \$250 million of capital at 7 percent is \$17.5 million. Subtract the \$10 million of annual fixed costs and we're down to \$7.5 million of pretax earnings. Multiply that by one minus the tax rate and the result is \$4.875 million of after-tax earnings. Our average equity is \$250 million plus half of after-tax earnings, or \$252.4 million. If you divide after-tax earnings by average equity, the result is a 1.93 percent ROE. Clearly, the \$10 million of fixed costs is a big drag on our earnings and ROEs. On top of that, we're only earning a marginal after-tax rate of 4.5 percent on the undeployed capital.

MR. ATKINSON: You have to do better than that. We need some creative ideas to help us boost our ROEs.

MR. DALLAS: Let's run it by our distinguished panel of actuaries again. Anything else? Assuming that the GAAP assumptions are already using minimal paths, what else can we have done to the ROEs in the early years? Is there anything we can do to boost the yield on that undeployed capital?

Maybe we should look at a portion of capital and equity with more aggressive investments. You need a careful capital plan in place before you do that. You want to make sure that capital is not going to be used for a long time. Also, maybe you should look at some of your statements and see if you can shift some of your expenses off to deferrable expenses.

MR. ATKINSON: That could be. Part of that \$10 million in fixed costs really is sales and marketing related.

Good answers, James. I'm impressed. Now, let's take a look at our capital uses. How long does it take us to burn through that initial \$250 million, and how much more do we need to get us through 2004?

MR. DALLAS: In the first two years, you can see free surplus, which is our undeployed capital, dropped quickly by \$115 million in 2002 and by \$108 million in

2003. I assumed an infusion of \$100 million of additional capital at the beginning of 2004, which left us with a little free surplus at the end of 2004.

MR. ATKINSON: Very good. Now, we don't want to set it too close. I'd rather have a little too much capital at any point than not enough. You talked about using reinsurance when our initial capital started to run out. How does reinsurance compare to debt? What are the present terms?

MR. DALLAS: Can anybody think of reasons to use reinsurance versus debt? You want to create the right delicate balance between statutory equity and reinsurance to make the rating agencies happy, right? Can you get debt at any kind of instrument? Can you get a \$5 million debt offering? It's probably difficult. That usually has some kind of minimum size requirement, such as \$100 million. Reinsurance has a little more flexibility; \$5 million and \$10 million deals probably aren't too small to think about for reinsurance.

Issuance costs for the debt, right. You have to pay the investment banker an underwriting fee. Does debt help you get rid of RBC risk and capital requirements? Usually not. Reinsurance can shift some of that RBC requirement off of your balance sheet, so you see some extra benefit of reinsurance that you don't always get with debt.

MR. ATKINSON: How about cost?

MR. DALLAS: You can often issue debt at an interest rate that's not much higher than what you're earning. The point is, with reinsurance, debt, and equity, you have to balance all three, and you have to take all the costs into account when you're analyzing which of the three to use.

MR. ATKINSON: Well thanks, Jim. Reinsurance sure sounds like a wonderful planning tool. It reminds me of the way banks securitize pools and mortgages and resell them, only reinsurance is a lot simpler and more straightforward. No need to break the business into numerous and complex tranches, and no need to involve investment bankers. That has to save a lot of pitching costs.

MR. DALLAS: I'll look into reinsurance when the time comes. You'll see in the long-term debt line that I assumed we issued \$100 million of debt on January 1, 2004. I assumed the debt would yield 7.25 percent, while we invested the proceeds to earn 7 percent, for a net pretax cost of 25 basis points.

MR. ATKINSON: Wow, you read my mind. That's exactly what I was going to ask you to illustrate, even the 25 basis points net cost. Let's see, the debt will cost us 25 basis points on \$100 million, or \$250,000 pretax. After tax, that's only \$163,000. On the other hand, \$100 million in debt divided by a total debt and equity of about \$400 million puts us at a 25 percent debt-to-total-capital ratio. That's probably a maximum debt we can use without jeopardizing our ratings. In

fact, I'd rather not go that far. So reinsurance sounds better all the time.

MR. DALLAS: What if we assumed only \$80 million in debt?

MR. ATKINSON: Wall Street's not often that flexible. They'll push us hard to round it up to \$100 million. In fact, it's hard to get some firms interested if you're issuing less than \$100 million.

MR. DALLAS: So where do we go from here?

MR. ATKINSON: Go ahead and leave debt in your pro formas. That's easy to explain. Get to work on improving your ROEs, though. If we can get the early year ROEs up at least a couple of percentage points, I think we'll have a plan that will fly with our investors, potential investors, the CEO, and our board of directors.

MS. ATKINSON: This concludes our play. Thank you very much, and the instructors will field questions if you have any.

MR. ATKINSON: Discounting extra capital makes a lot of sense if you're using ROI as your profit goal, maybe ROE. But if you're using a profit margin, you're often just trying to measure your profits over time compared to premiums over time. If you discount your profits, that's the ROI, let's say. You get zero over something, which is pretty useless in terms of a comparison tool. I think that's why a lot of people do discount it because of the interest rate earned on investments or maybe after taxes.

When you look at investment sources out there, the riskier the investment is, the higher the yield. Certainly insurance has risks, and a lot of it is the risk that we know is there in the assumptions.

MR. ATKINSON: It should be a lower-risk product if you're charging higher premiums and refunding all the excess.

MR. DALLAS: An important question is one that Dave and I raised in our textbook: What's the right discount rate to apply to distributable earnings? We think some kind of weighted average cost of capital is often the most appropriate rate to use for discounting, but there are many differing opinions.

That's about all the time we have. On behalf of David and myself, I want to thank everyone. I really appreciate your participation today, as does David.