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THE INVESTMENT LIAISON ROLE

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Historically, actuaries and investment advisors worked independently. In today's environment, a much closer relationship is essential. This panel will cover topics and methods for better coordination between actuaries and investment professionals. The session will concentrate on the coordination of pricing, crediting, and investment strategies.

MR. PETER D. TILLEY: Don King is from Hyperion Capital Management, and Scott Navin is from John Hancock. I'd like to give some opening remarks before I introduce the two speakers.

The liaison role between the product actuaries and the investment actuaries is a rather complicated one, and a fairly recent one, I think. My own history on this would go back with my company to the late 1970s, when we sold a portfolio single-premium deferred annuity (SPDA) product and invested in 20-year mortgages. Then came 1980, 1981, and 1982; interest rates went up into the high teens, and we had a major problem between the assets and liabilities, I think largely due to lack of communication. I think if the investment folks had really understood what the product design was and what the risks were, they would not have put SPDA money in 20-year mortgages. I think if the product folks had really understood what sorts of things the investment division was doing with the policyholder premiums when they came in, they might have changed the product design, subject to whatever regulatory constraints we were operating under at the time. Or perhaps they would have decided not to offer such a product. Although I suppose it was difficult to predict the kinds of interest rate events that we had in the early 1980s, I don't think a catastrophe scenario would have had to take interest rates up to 18% to show that this combination of product design and investment policy was a bad mix.

Starting then in the 1980s, at least in my company and I think in many companies, there was more communication between the asset areas and the liability areas. If your company is like mine, it focused mainly on term. Options were not really discussed and so, when we talked about an investment policy, it was typically, "let's put this much in five year and this much in seven or this much in three year and this much in five." But the discussion didn't get to the fact that on either side of the balance sheet these cash flows were somewhat unpredictable, or extremely unpredictable in some cases.

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Fast-forward to the late 1980s. The investment division, having been through some rather interesting times on the commercial mortgage credit side has now come full circle and has gone into triple-A credits, such as Fannie Mae, Ginnie Mae, Freddie Mac, pass-throughs, planned amortization class (PAC) bonds, or even Z bonds. Term was communicated as a single number, not a range. So if we said that we were investing in five-year term, the investment folks said, "OK, we have a five-year average-life asset here, let's communicate that as a five-year term." What they didn't communicate, or what the liability folks forgot to ask, or what asset/liability modeling (ALM) forgot to check with both sides on was that the five-year term could be six months or 15 years, depending on the kind of security that you had. So I think we've moved from just discussing term to discussing the products' options. The process is not a perfect one yet, but we've made great strides in the last ten years.

Don will talk about the interdependencies of the different functions of an insurance company and what can happen if these interdependencies aren't recognized as the fundamental linkages between the different parts of an insurance organization. Scott will follow up with his personal experiences at the Hancock, and I'll conclude with what the Great-West Life is doing. That may or may not be much different from what Scott has to say. There may be some differences between the mutual companies and stock companies; let's find out.

With that, let me just give you a little background on the speakers that Mike Kantor rounded up for this panel. Don King is a senior insurance advisor with Hyperion Capital and has been there since 1994. In this role, he supports the insurance investment management team on issues ranging from liability analysis to the development of investment guidelines. In addition to working for Hyperion, Mr. King is founder and president of GC&E Associates, a consulting business focused on improving linkages between the liability-underwriting side of the company and the asset-management side. Prior to this, he spent 20 years with the Equitable Life Assurance Society. I think those 20 years were probably exciting ones that you had at the Equitable, Don, so I look forward to hearing about them. While at the Equitable, he created the asset/liability department, headed the portfolio management department of Equitable Capital, and managed the Equitable's economic department. Mr. King also spent ten years at the Bureau of Economic Analysis of the U.S. Department of Commerce where he was chief of the current business analysis division. He holds a B.S. degree from Holy Cross College and a M.A. degree and a Ph.D. from Clark University.

Scott Navin is a senior associate investment policy officer in the investment policy and research department at John Hancock Mutual and will follow Don. Scott is currently responsible for the execution and administration of the company's financial futures hedging program as well as its pension equity hedging program. He also serves in an investment policy capacity for the company's individual retail annuities and property & casualty lines of business and is actively involved in ALM issues, option pricing, and investment research at the Hancock. He is a graduate of Babson College with a degree in accounting, has a master's degree in finance from Boston College, and he is a chartered financial analyst, a CPA, and a CLU. Scott is a member of the Boston Security Analysts Society and the Association for Investment Management Research.

Finally, I have been with Great-West Life for 15 years now, the first 9 in the individual financial management area looking at pricing and financial results and financial

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projections, for all the individual products: life insurance, individual annuities, and all sorts of different distribution systems, specifically in the U.S. operations. I should preface any remarks about Great-West Life by saying that I'm in Denver and the operations in Winnipeg on the Canadian side are very different, with a very different organizational structure, a very different market, and very different ALM needs and philosophies. So I speak from the U.S. perspective. After my nine-year stint on the individual side, I spent two years in group pension product development, the 457, 403(b), and 401(k) markets. For the last five years, I've headed up the ALM functions of Great-West in Denver, consulting with product pricers on the product development side—the interface and communication of pricing rates and the management of portfolios, once the business has been sold.

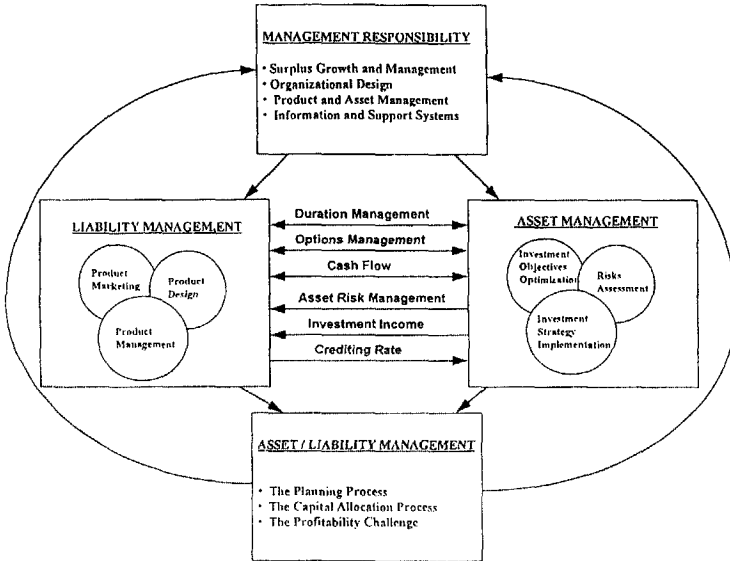
MR. DONALD A. KING: I would like to do two things and one is to talk about what I think the functional interdependencies and the dynamics of a life company are. I know I do this at the risk of carrying coals to Newcastle, but I run that risk because I think we've been struggling with the obvious for too long, and we haven't gotten the asset/liability relationship in its proper perspective. We're getting there. We're certainly much further than we were five years ago, and some companies are doing it quite well. But I'd like to review some of these interrelationships, and then I'd like to just ask you some questions about asset/liability management. I guess the first question is, What is it?

I liken it to spaghetti sauce—everyone has his or her own recipe for it. There's no one-size-fits-all, and that's the way it should be. All companies are different. They're snowflakes and have different heritages. They're big or small, they're single line or multiline, they're interest-sensitive or not interest-sensitive. We have asset/liability practice at the micro level, but some things are much the same everywhere.

Let me quickly run down Chart 1 by starting at the top because it all has to start there. Senior management has to make it work. Senior management's main responsibility is to put in place an organization and organizational structure that's capable of delivering earnings and an earnings growth program for the future. To do this, management has to have a clear definition and articulation of strategies and goals. Management has to establish constancy of purpose, which is one of the hardest things life companies seem to have to overcome. Management must force the relationship between liability management and asset management because there's no natural propensity to see the dependencies that one side has on the other. Management must deliver information and support systems that will facilitate the implementation of asset/liability management.

I put three circles at the liability management side of things and they're all interdependent. Product marketing people are the people on the firing line. They know what's out there. They know what the competitors are doing. They know what the market wants, and they have to bring that and articulate it to the product designer. The product designer is the person responsible for putting together the options that will be offered in the product and also for measuring those options. After all, when you write an option in a product, you're giving the policyholder economic value and you have to have an underwriting of that economic value so you can translate that to product management. In product management someone is responsible for the profitability of the product or the line.

CHART 1
ORGANIZATIONAL STRUCTURE FOR EARNING GROWTH



The designer is responsible for putting in options that the marketing person can sell. The marketing person says, "The more options, the better off I'm going to be, and the better the sales volume will be." The product designer has to make it profitable for the product manager or at least have values in those options, which can be covered in the marketplace on the asset side so that a spread can be earned; that's what we're trying to do. The product marketing person and the product manager have a very tight relationship. The product manager is responsible for new pricing and renewal pricing. The product marketing person wants the best blue chip product out there at the highest crediting rate possible, and there's a natural tension between the two. The marketing person is interested in sales volume, and the product manager is responsible for profitability.

If you look on the asset side, the first thing that must happen is to have an articulated investment policy statement. Many places underestimate the importance of the investment policy statement, but it's typically the one place where a company will try and articulate its return/risk tradeoff. But it's more than that. It is the map for the asset manager to follow, and it is the tool of control of senior management over asset management. So there are a lot of dynamics there, but until there is an articulated investment policy statement, it's unreasonable to expect that the asset manager will be able to make sensible allocation decisions, establish strategies, and implement portfolio management.

If you look at the relationship between the liability management and the asset management, there are just a couple things to point out. Duration management begins with liability management. The actuary must tell the asset manager what he or she thinks the duration of the product is because that is what the asset manager is investing behind. In many respects, the asset manager is driven by the liability manager; liabilities drive this business. There is options management. You put options in your products, and you try and put options in your assets that offset the options in your products so that when interest

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rates change, everything doesn't go north or south at the same time. You try to balance the options when you know them in the product and you try to find the assets that both match the duration and complement the product's options.

That goes both ways and cash flow goes both ways. The asset manager needs to know how much he or she will have available for investing. The better he or she knows that, the better he or she is able to plan. Also, the cash flow off the portfolio has to go over to the product side so that the product managers will know what kind of cash flow is coming from the other side of the balance sheet.

Asset risk management is very much product management's problem. Investment income is driven off the portfolio. The crediting rate goes the other way. The crediting rate is really the responsibility of the product manager or the profit manager and is given to the asset manager. It should be reasonably driven so that the targets can be met in the marketplace.

If you take the liability management and the asset management down one step, senior management sets its goals, its targets, its strategies, and its assumptions. Given that management of the two sides of the balance sheet have to go off and determine how their work will contribute to the achievement of those goals. They're very involved in the planning process. They have to explain to senior management what will happen under different interest rate environments with the different risks in the planning process. The planning process really leads to the capital allocation question. You start with asset/liability management on a microlevel, and you soon see differences in terms of the internal rate of return or the return on equity (ROE) on various lines and various products. That gets translated back up to senior management, and senior management decides where it will allocate its marginal investment dollars. When you're doing this, in an asset/liability sense, then you are meeting the profitability challenge that is before senior management. When you're doing that, you're making important contributions to stronger surplus positions, safer balance sheets, and higher ratings for your company. That's a statement that helped me at one time understand who was responsible for what and it helped me design strategies that attempted to link authority, responsibility, and accountability.

I have a couple of questions I want to ask. The first is a series of questions as to the role of asset/liability management. In my judgment, management is good in terms of judging the risks it is willing to take if it understands the nature of those risks. The question is, How well do we, as technicians, articulate those risks? Do we successfully demonstrate the value added in managing interest rate risk that we communicated to senior management? Do we make things more complicated than they need be by presenting issues instead of solutions? If we're going to talk about Monte Carlo simulations and mean reversion and reengineering derivatives, believe me, at the senior level, eyes are going to glaze over. Asset/liability management will be viewed by senior management as an arcane exercise practiced by actuaries as they develop and price products. My assumption is that it's much bigger than that.

The second series of questions I want to ask is, Do we present in our companies asset/liability management as an end in itself? Or is it part of a planning process and part of the capital allocation process and part of the profitability challenge? After all, that's where senior management lives.

If management is going to have an effective profit plan, it must clearly state its objectives. It must identify targets and identify how well they will be measured and over what time span. Management has to understand the risks that are inherent in that plan. My question is, Is there a role for asset/liability management in that process?

If the private plan is to be successful, then the organization must be dynamic, and it must be prepared to adapt quickly on the basis of experience or changing opportunities. This means regular monitoring and modifying strategies that are critical to success. Is there a role for asset/liability management there?

The third question that it all comes down to is, If we fail to make the value added by asset/liability management apparent to senior management, how do we convince senior management to allocate resources to this endeavor?

MR. SCOTT NAVIN: I thought I'd begin with an overview of the environment we operate in, and I think we'd all agree that insurance is not the sleepy industry that it used to be. Over the last 10 or 15 years, we've seen a real evolution toward more of a financial service industry as opposed to an insurance industry. That has brought about many dynamic changes. We're operating in an environment of dynamic assets and liabilities. It used to be more so, I think, on the asset side, but as competition has increased, with banks and mutual funds and things of that nature, we've had to get out there and really bone up on our products and—as Don mentioned—try to add many options to entice people to buy our products. In addition, another big change has been the knowledge of the customers. They have much higher expectations than I think they had 20 years ago. We're also facing more regulations. We have to deal with risk-based capital (RBC) constraints, *Financial Accounting Standard (FAS) 107* and *FAS 115*, and all sorts of NAIC proposals. This is all creating a great deal of change. The way I perceive it is that it has caused the professionals within the company to become much more interdependent on one another. What the actuary's doing on one side of the building is really impacting what the investment professional is trying to do on the other.

I think that communication in the insurance company is more critical now than it has ever been. Poor communication is detrimental to company operations. It's sort of benign, but I think it's deep because if you think about it, if an actuary is designing a product, he or she thinks it's the greatest thing in the world. The options look great, it is priced perfectly, but then it turns out that the investment side of the house can't really invest for this product. There can be a poor asset/liability fit. The product, in all likelihood, will fail or, potentially even worse, the company will sell so much of it that it will lock in losses for ten years down the road; you have to be careful about that. In addition, there is the psychological problem of spending a large amount of time working on products that all fail; I think that is a real morale issue. So you have to be cognizant of that. You want to avoid all these types of problems, and I think you can do that fairly easily. The obvious solution is that you need to communicate. I think what is less obvious is that you need to formalize the channels of communication in a company.

You can't rely on an ad hoc process; it's just not going to get the job done. People have concerns and they're not going to be focused enough. You need to put together some type of vehicle in which you can promote understanding among professions and give them an opportunity to meet on a regular basis and share ideas and concerns and work through solutions. By doing this, you should be able to avert potential problems before they create

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headaches for the company. In addition, it's very important that you leverage the knowledge and the skill base that you have inside the company. Allow people who know what's going on to spread their wealth of knowledge.

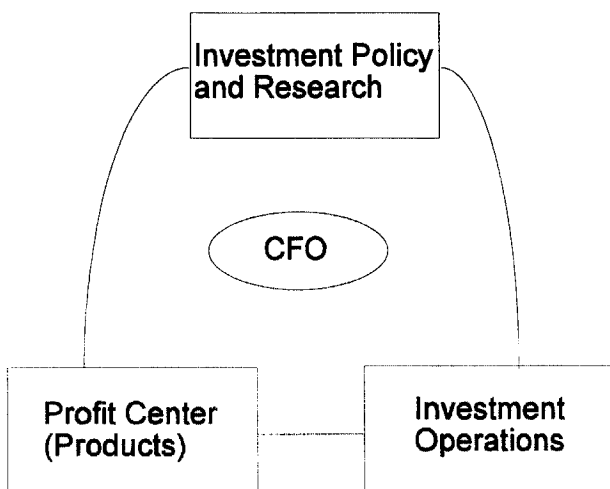
If you agree with that, the obvious question is where to start. At the Hancock, I think it all started in the early 1980s and, at that time, management decided that we had a big general account that was a mishmash of products. They didn't really know what was profitable, so they made the commitment to segment the general account. All of a sudden, after a great deal of effort on the part of the systems people and accounting personnel, they now had an idea of where the profit lied, versus the weaker products, and that got the ball rolling. Given that we now had segmented a general account, a year or so later management recognized the need for dedicating resources to promoting communication throughout the company, and this involved expenditures on personnel, technology, and what I call portfolio specialists; essentially, the investment liaison that we're talking about. The final step was to come up with a vehicle to promote this communication, and management called it the working group. It brought responsibility and authority down to a lower level.

I'd like to take a couple of minutes to describe working groups. I'm sure many of you have them or have heard of them. Essentially, they have a very broad-based membership. They include all the key players from investment, the pricing side of the business, finance, risk management, marketing, sales, and people of that nature. Their objectives are to get people together on a regular basis to officially manage a segment or a block of business. I guess that would involve, as Don mentioned, stabilizing earnings, creating additional growth, and reducing risks inherent in the operation of that line of business. Also, I think it's important that, as a side benefit, working groups create this constructive tension in which people are coming in from different perspectives. They have different priorities, and the important issues deserve to be debated and discussed before decisions are made. That tends to happen in a working group. The technique is really just getting together on a regular basis and forcing people to come together and talk through their problems and resolutions of those problems.

Regarding how the structure works (Chart 2), I'm involved in the investment policy and research area. The portfolio coordinator chairs the working group and deals with people from the profit center who might be actuaries or finance-type people. Investment operations are the bond or mortgage areas. This is just a free flow of information on a regular basis. Any decision you reach affects the chief financial officer (CFO). Bear in mind that the CFO has his own objectives, and those might be that he doesn't want to impact RBC ratios or financial ratios, or he wants to provide stable earnings, and things of that nature.

How would you go about implementing the working group? You first need to get senior management to buy into the process. You have to get them convinced to spend the money. Again, I'm harping on this, but Don mentioned this point as well. I think a good way to start would be to show senior management examples of some of the inefficiencies in the current operations and propose what you would do about it, such as what kind of benefits you would anticipate being able to further. It might be improved financial results or it might be more stable earnings. At least at the Hancock, senior management is very big on stable earnings, as long as they're growing. The idea here is that you want to get some financial commitment because you're going to need that commitment to marshal the resources necessary on step two to get this process working.

CHART 2
WORKING GROUP DYNAMICS



At the Hancock, we created the investment policy and research area just for this purpose. They initially brought together probably a dozen or so people, probably an even mix of actuaries and investment-finance-type professionals who, over the years, have become well versed in asset/liability management theory and applications. Currently, we're about 18 individuals and are still about evenly split between actuaries and investment professionals.

Most of the actuaries are in-house. A number of them came through the actuarial development program, and others migrated from other areas within the company. You also need to recognize that there has to be the need for technology and you have to provide for this need. When we're talking about asset/liability management, you have to market-value all sorts of assets and liabilities. You have to be able to do asset/liability management recording, and you have to be able to hedge your products. That's all sort of buried in this department. Finally, you need to develop this position that's called "portfolio coordinator," which is the investment liaison. His or her responsibility is to understand the assets and liabilities well enough to bring people together and talk through issues. They're responsible for setting the agenda and priorities of the working group.

Once you have the money, the third step is to set up a system. You need to work through how you're going to make this an efficient operation. Probably a good place to begin is to develop a good investment policy and operating guidelines. These tend to give focus to the members of the group. People know their responsibilities, and they can work toward them. You want to try as best you can to develop goals that are mutually dependent. If sales are doing well, and investments aren't, it's not a good fit. You want a matrix-type approach in which they both have to be working in unison. Wherever possible, you want to instill incentives such that you promote these goals.

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These are examples of typical working group topics that we would see over the course of any given year, as a minimum. Working group topics include: investment policy development, product development, asset allocation, cash management, risk management, investment and product markets, and portfolio performance.

I don't need to say much about investment policy. I think the working groups have learned a great deal about product development in recent years, and we're getting better at product development. We talk about what the market is looking for and what we think we can do, given the strength from the company to fill that market void. We're doing better job there.

Regarding asset allocation, obviously you want to make sure that you have the best product mix possible to fund your liability. Cash management is trying to reduce downtime, time that money is in cash as opposed to being invested in some permanent asset.

There's much discussion on risk management. Actuaries build in these options and then they prefer that we don't price for them. We argue that we have to because we're risk-averse.

Regarding investment markets, there's a great deal of talk on a weekly or monthly basis as to how the bond department is doing. Are spreads tightening or widening? Are we putting our money out, is four years hotter than ten years, are mortgages looking good?

There's also quite a bit of discussion of the portfolio performance; the working group tries to give regular updates on the portfolio. Is investment income up to par with what we've priced into our products? If it isn't, what are we going to do about it? Do we cut dividends? Do we cut our guaranteed rate, or do we look for better assets?

Here are what I see for the achievements that have resulted from the working group process. These include: reliable communication channels, enhanced asset/ liability management, dynamic product development, superior "bottom-up" planning, improved profitability management, and systematic due diligence efforts. Reliable communication channels is a simple, but important, point. It's nice to be able to pick up the phone and know who you're going to ask your question of and get a response. Regarding enhanced asset/liability management, basically I think we have a much better understanding of the assets and liabilities. We can do a better job of pricing them out and working with the technology available for asset/liability management.

I talked about product development. The notion of superior bottom-up planning is that if the individual segments are doing well and they're well planned, the general company, as a whole, is going to do well, and that has been the case over the years.

Profitability management, again, gets back to the issue of being able to tell senior management that this is what your expectation is for this line of products. You hope it works out so that everybody is happy.

There's also the nice benefit of due diligence because you're meeting on a regular basis and everybody needs to contribute. You have to stay on top of your job and things don't get away from everybody.

It's not a panacea. In a typical working group, you're going to have natural tensions; people are coming to the party with competing interests and concerns. There is the actuary versus the investment person and the financial person versus the investment person. There's a great deal of tension there, but I think it's good. In my experience, some of the more hotly debated issues concern investment policy. Somebody always wants to go longer than somebody else, especially if the yield curve is steep.

Risk management decisions are always a battle. As I mentioned earlier, often you've written an option that has a large amount of value and people are sometimes reluctant to allow you to price for that. Then there is the issue of designing a product that you can actually invest for or that people want to buy; that occasionally occurs.

In summary, I would say we're now operating in very dynamic markets. Because of this dynamic nature, all professions need to coordinate very closely with one another. At the Hancock, we felt that the working group format is a good means of doing that. We've had many good results with the working group. Finally, I'd just say that our experience has been that the actuary can and has played a significant role in this process. Like I said, half of our department is actuaries, and they're some of the strongest people there.

MR. TILLEY: In listening to Scott talk, I was hoping that there would be some differences between the way his company does things and the way my company does things, and I came up with two key differences that I want to expand on.

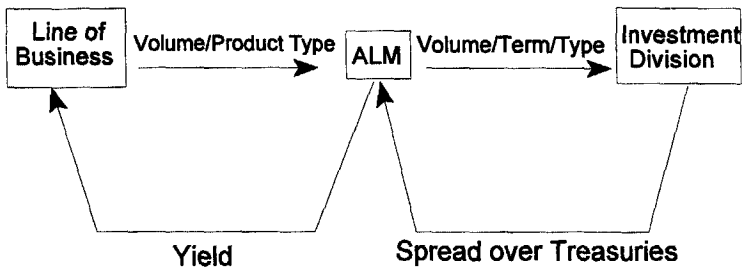
The first is that Scott calls them *working groups* and I call them *portfolio committees*. The second is that in our company, the CFO, who is my boss, would not want his position shown on any organizational chart, unless it was on the top. The CFO is right up there with the chief investment officer (CIO) and the heads of the lines of business. But I'd like to let you see another approach to the way an insurance company might handle this issue of communication between the asset lines and liability lines. Chart 3 is labeled initial pricing. Let me just talk for a second about product development before we get to the pricing of the product, this setting of the rates on new cash that's coming in, whether you change them quarterly, weekly, annually, or whatever your practices are.

In the initial product development phase, you have to have that communication, because the way the world has changed, there are just too many links between the way a product is designed and the kinds of profit that it requires, as a result of RBC considerations which are a function of both product features and the investment policy. We must also use the ability of a solid investment team to suggest alternatives. There are much more interesting things out there than noncallable corporate bonds.

As actuaries, we tend in our pricing models to put in an interest rate and have that rate go forward for 40 years. At least, that is how I used to do things many, many years ago. I would hope that with the advent of all the pricing software and the ALM software that's available commercially out there now, that we've moved past that point, but I think we're still from a pricing perspective, looking at a particular rate or a particular simplistic investment policy.

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CHART 3
INITIAL PRICING



The investment division has many interesting suggestions for us that can shape a product design or even, in fact, create a new product. An example would be the existence of equity-linked notes, that is a bond, but that has characteristics that would allow it to participate in the performance of the stock market. If the product pricers are designing their products in a vacuum, they may not be aware of the existence of such asset types that would allow them to create what may be an interesting product for perhaps a 401(k) market or even for individual investors. I wanted to mention that this kind of communication goes both ways as well. It's not just the product people talking to the investment people about what they're designing and what you are going to invest in. There are possibilities in the other direction.

Once we've designed a product, though, and it comes time to bring the cash in and decide what sort of rate we're going to credit, this is where we get to the structure on the chart. The line of business communicates, through centrally located asset/liability management, a volume and product type. We will sell \$50 million of product *X* in the second quarter, and we will bring in another \$30 million in product *Y* and another \$20 million in product *Z*.

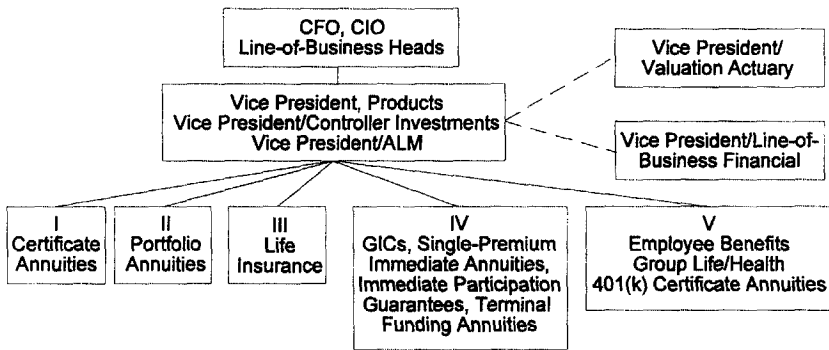
The ALM area then takes this information and communicates the same kind of dollar amounts and term after changing the semantics somewhat—there's sort of a product/investment, investment/product dictionary that we have to work our way through—to the investment division. The investment division then communicates back to the ALM department, based on those requirements, what spread over Treasuries it expects to be able to achieve, and we turn to the product area and convert that to a yield. Again, there's this translation of information back to the familiar terms of the product area. When I first went into the product development area on the pension side, and all the investment people kept talking about "spread over T," it took me a little while to get used to thinking that way, because I always liked to get a yield that I could put into my pricing model, not a spread. That's an adjustment that people in pricing have to make as well. We help them along by communicating a yield first, but also some spread information that goes with it, just so they can see whether spreads are narrower or are widening since the last time that we went through this exercise.

There's a daily monitoring of the hedge requirements. Based on the sorts of assets that we need for pricing, do we have the right kinds of either long futures or short futures positions

in place, depending on whether we're at the moment in an excess liability or excess asset position? And we need to keep on top of, in particular, the window products. If a product has a certain rate that's guaranteed for all deposits that come in during the second quarter, you can't just pick an estimate sometime in March, communicate that as the premium that will come in between April and June, and then look at it in July and see how you did. There has to be a very frequent update of that information and readjustment of the hedge position, recommunication, so there's a real circular flow of information that goes back and forth here.

Chart 4 shows the portfolio committees. The CFO's name is listed first. The main work, of course, is done down at the bottom as it is in every organization. We have five separate portfolio committees. A great deal of planning went into deciding how to structure these committees when we set them up about a year and a half ago. We wanted committees that had a fairly homogeneous liability type, so we didn't want to be putting, for example, GICs in with universal life. We wanted committees that were large enough to stand on their own. If a particular product had \$50 million of liabilities and we're about an \$11 billion organization now, it didn't make much sense to have a separate committee that would manage a block that would have perhaps five assets in it. Size was a critical factor, as well.

CHART 4
PORTFOLIO MANAGEMENT — ONE APPROACH



Then there were line-of-business considerations. That's why we have committee V over on the right-hand side. In Denver the financial services area is quite separate from the employee benefits area. The employee benefits area sells a product, the 401(k) certificate, that looks almost exactly like the certificate annuities over in portfolio I. For line-of-business reasons we keep those separate.

Each committee has one person from the ALM area. I think that may be another difference between mutual companies and stock companies. If I had 18 people, Scott, I think I could probably put three or four people on each of these committees, but being a stock company, the reality is that we have one person on each committee from the ALM area. We also have one person from investment management, and I don't mean someone in investments who happens to be a manager in our titling structure. What I mean is that we

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have an area called investment management that is in charge of the tracking of cash flows, the allocation of investment income, taking the asset segmentation information that we passed along and maintaining the asset segmentation system. The income allocation person actually is the same person who sits on all five committees. There's a real commonality in these committees to ensure that we're not allocating more investment income than we have in total.

We also have from one to three people from the line of business, depending on the particular committee. We have product managers, typically actuaries, and one or two people from the asset acquisition side from various specialties. One person might have a corporate bond background and another person might have a securitized asset background. These people get together, on average, about every six weeks to review things. The kinds of reports that they put out on a quarterly basis deal with, for their particular committee, the asset mix, how much they have in public bonds versus private placements or commercial mortgages.

We report the asset/liability cash flows if it's portfolio I, IV, or the certificate part of V because those are the portfolios in which we take a very strong viewpoint on cash-flow matching as opposed to something that is more of a duration match. Where we have GICs or SPIAs or certificate products, we want a very close cash-flow match, so we report for those particular product lines.

Interest margins make a very interesting report, particularly for senior management. What is the difference between what we're earning and what we're crediting? How has that changed since last time and why? It could be on either side of the balance sheet. Most likely it is on both sides of the balance sheet, due to various changes that have interactions. What sorts of spreads have we been getting on recent asset purchases over the comparable term of Treasuries? We want a track record of whether spreads seem to be narrowing or widening, as a particular variance explanation for some other things that may be emerging in the earnings. We want to know the actual/projected sources of cash to invest so that we have a game plan and we know whether we have \$50 million to put out next week or \$100 million to put out over the next particular quarter in a particular committee.

So this is the sort of information that we make sure gets up to, in particular, the top level. (See Chart 4.) The bottom level reports to the middle: the vice president of a particular product area, the vice president/controller of investments, a gentleman with an accounting background who is also in charge of the income allocations function, and the vice president of the ALM area. If anything is controversial, if we think that senior management really needs to know something in a big hurry, we report up to that next group, the CFO, the CIO and the heads of that particular line of business. We try not to involve the president if we can avoid it. So far we've been lucky; we haven't had any particular crisis situations. This is a system that has worked well at my company. One of the things that helped it to get a good start was that when we formed these committees, we had an education process that went between the product actuaries and the investment professionals in both directions. My bias, being an actuary, is to try to educate the investment folks as much as I can. I'll just leave you with a couple thoughts on that.

There are a couple places where the investment folks can get some education. Unfortunately, it's not as readily available as investment information seems to be for the product people. However, I would recommend the reading lists that the Society puts out on

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Actuaries Online. I think the latest issue of *The Actuary* mentioned how to send for those reading lists. There's a reading list on individual annuities that the investment folks may find quite interesting, just to get a feel for some of the product designs. Also, there are the study notes—there's a study note service and you can actually look at the list of available study notes. They usually have descriptive titles. "Individual Annuity Pricing," for example, would be one that you might look at and say, OK, I think I'll pay the nominal fee and I'll pass that on to the investment people just so they can get a feel for the sorts of issues that actuaries deal with.

I'm a member of the National Association of Life Underwriters (NALU), and I suppose you would be, too, Scott, as a CLU. It has a magazine called *The Life Association News*, and that gives an agent's interesting perspective on things. I like to circulate that around my company. What I find the most entertaining part of that magazine are the ads. You see the 10.25% SPDAs with 10% commissions. I like to rip those out and send them around to people so that they can get a feel for the sorts of things that our product people have to deal with in the marketplace.

Are there any questions? I would like to ask Scott, just from his perspective on the investment side, in particular, what he found to be most helpful in learning about the liability side of the business.

MR. NAVIN: Probably the number one reason was just working with the people in the working groups. The second, actual reason I got my CLU was I was trying to learn more about the product; it wasn't because I wanted to be an underwriter. That was a good and helpful overview.