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Session 100F Successful Communications with Investment Professionals

Track: Investment/Management and Personal Development

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Summary: Effective communication between specialists from different fields is always tricky. Actuaries and investment professionals must understand each other's needs if effective asset/liability management is to take place. Panel members discuss the ways that their organizations make communication work among actuaries and investment staff.

MR. DAVID INGRAM: When we met to plan this session, none of the speakers here today felt that they were necessarily experts, although we are all experienced in this topic. Today we plan to share some of that experience with you.

Our speakers are Josephine Marks, Adrian Hussey, and myself. Josephine Marks is vice president of investments at Sun Life. She is also an FSA, a fellow of the Canadian Institute of Actuaries (FCIA), and a chartered financial analyst (CFA). Her responsibilities include oversight of global portfolios and investment policy, investment risk-management, and performance measurement. She has also had previous experience in asset/liability modeling (ALM) and risk management of derivatives portfolios.

Adrian Hussey, not an actuary, is vice president of capital markets at Manulife Financial and is responsible for index fund management, new investment product development, and risk management. He is also a CFA and has an MBA.

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†Mr. Adrian Hussey, not a member of the sponsoring organizations, is vice president of capital markets at ManuLife Financial in Toronto, Ontario.

Note: The chart(s) referred to in the text can be found at the end of the manuscript.

Lastly, I am a consulting actuary with Milliman USA. I have had experience as a product actuary and as an ALM actuary.

To start our discussion, I will explain why we want to communicate. One of the reasons we are having this session is that I have repeatedly heard from clients and other consultants at Milliman that professionals and actuaries in a number of investment companies are in almost completely separate silos within the company. The organizational structure does not support the idea of communicating between actuaries and investment folks. Often, there's a long-standing tradition of either having no communication or poor communication, and in many cases, when sporadic communication takes place, there are sparks immediately.

There are different points of view. Sometimes there is trouble coming together regarding the terminology for the simplest things because of different training and experiences. In the end, one of the larger roadblocks is the fact that many people believe that real communication is "a process that results in everyone agreeing with my point of view."

One reason we should work on communicating is that investment professionals and actuaries are the financial people in an insurance company and are natural allies in strategic discussions. In companies where I've worked, battle lines are often drawn between non-financial management and financial management. If investment people and actuaries stake out different positions in that struggle, the financial point of view gets heavily dilute, and often totally ignored in decision-making. We can certainly be both more effective in doing our jobs and more effective for the whole company if we work together.

Next, I'll talk about the subjects on which we need to communicate. Product investment strategy, which one thinks of doing when developing a new product, is certainly something that needs to be communicated. What is the strategy going to be?

Investment markets, however, tend to change over time. The pace of those changes has been shortening recently. The markets tend to squeeze any profits out of static strategies that you decide to use. The idea of discussing product investment strategy is something that has to be repeated and revisited in a very rigorous manner and on a regular basis. Otherwise, whatever investment strategy is put in place upon product design won't produce the same amount of profits a couple years down the road because the money isn't going to be there. Updating the strategy takes the same kind of collaboration and coordination as designing the initial strategy.

Ongoing product pricing is another major area for communications. Almost 20 years ago, I remember sitting in on investment interest rate-setting sessions for a new universal life (UL) product. It took place in a room of with 20 or 25 people, and

quite a formal dance took place. I am sure that kind of thing goes on at some companies, while at the opposite extreme, for other companies it's a breeze.

The entire rate-setting process is a rote, formulaic process that happens without anyone really communicating. I suggest that a company is better off looking at neither of those extremes, and instead, examining an alternate situation. In this case, the pricing actuaries and the investment portfolio manager actually sit down and talk through the nuances of the real situation—the investment and rate choices—then work out the best strategy in collaboration.

Another important area for communication is performance analysis. Product performance analysis and investment performance analysis are listed as two separate items. I believe that performance analysis is most effective for the company when going beyond the way they look at things and really looking at the combined result. Performance analysis should focus on the product in total—both what happens on the liability side, with pricing experience and customer retention, and what happens on the asset side with new money, reinvestment rates, and capital gains and losses.

There isn't any real world way to separate those two types of analysis. They are interactive, so product performance should be viewed together and thought of by both the product people and the investment people as a joint result of their reactions to market changes.

The next significant area for communication is company planning. There was a situation in one company where the actuaries projected the liabilities and the investment folks projected the assets for the long-term corporate model, and, for the most part, did it independently of one another.

The actuaries would make their own judgment as to what changes in interest crediting would result from the basic interest rate assumptions without regard for the projected investment income. The investment folks did their own projection of insurance cash flows to determine reinvestment amounts. It took a couple years to get to the point where there was enough information being passed back and forth to do a joint projection. Those actuarial and investment silos were so tall and separated, and the communication was so brief and inconsequential, that getting the needed information from each other was not considered.

Setting required surplus targets for new investment types arises when a company wants to use best estimate surplus targets rather than relying on risk-based capital (RBC). When a new investment situation arises, either the RBC formula will not be defined, or the new investment will show up in a category that has nothing to do with the underlying risk characteristics.

The discussion between the financial area actuaries and the investment folks has to be very fruitful in order to get the appropriate required surplus targets. For those

targets to be fully effective, the pricing actuaries and the financial reporting folks must come up with realistic pricing and results analysis of the products using those investment types rather than temporarily taking advantage of anomalies or shortfalls in the RBC program.

Another productive area for communications is the evaluation of uses for new investment types. Wall Street is very imaginative in this area. As a product actuary, I found that every 6-12 months the portfolio manager had a new idea that somebody on Wall Street had shared with him. He wanted to know if there was a way to fit the new investment with this portfolio. That is certainly a very important and useful function, which requires a high degree of interaction and could allow a company to have a significant strategic advantage if the communications process is effective.

Finally I will address more traditional areas for communications to add to the list such as setting up hedging strategies and asset/liability management.

So far, I have talked about why we should be communicating and some examples of what we could be communicating. Now I will talk about how to communicate. There are two main avenues for communications—listening and speaking.

Clearly, I think one of the two is more important than the other one. Yogi Berra once said, "You can hear a lot just by listening." Listening requires, first of all, paying attention. There is a trick to that because generally people speak about 125 words per minute on average, but people tend to think at about 500 words per minute. This is why it is completely natural for the listener's thoughts to get ahead of a speaker—to have spare thoughts bouncing around the listener's head as a person is speaking. It really takes a matter of will to get the brain to stop using that additional capacity and focus on the words that are coming in at close to one-fourth of the speed at which the human processor can run.

One of the things to avoid is filling up that time by continually trying to phrase their responses. When the person is talking and I find myself thinking about the perfect response, I generally tune out about halfway through what the other person is saying. Clearly, this gets in the way of hearing all of what is being said. Another thing that you need to do is give some response to the speaker.

It is good to try and concentrate, pay attention and not squirm or look away. However, if you are listening to somebody and are completely silent and immovable, they don't have the slightest idea whether you're raptly paying attention, daydreaming or falling asleep with your eyes open. This is why an important part of listening is to respond to the person you're listening to, even in the form of a simple nod, a word or a phrase.

Understanding what's being said is the second part of listening. This usually involves participating with the speaker by asking clarifying questions. This is not a matter of redirecting the speaker to talk about your topic choice rather than his or

hers. It is a matter of making sure you understand what they're saying by, in some instances, repeating it back to them in your words. The less said while you're trying to listen, the better. If you want them to illuminate their point better, do not try to emulate the lawyers on TV, who, in cross-examining, come up with a brilliant question that solves the whole case right there on the witness stand. That isn't the point here. The point is to let the speaker continue to talk about what it is they are trying to say and make sure that you really do understand it. Your response then, is the third part of the listening process.

The fourth important part of listening is remembering. One of the best ways to start off a second conversation with somebody with whom you're working with this way is by recalling to them things that they said, or points they made in a prior conversation. This will help both of you bring the communication back to where you left off. In addition, it shows them that what they were saying was important and interesting to you, and that you are really honoring them by remembering the conversation and bringing it back into the next one.

Now I will discuss speaking, the second half of communicating. I will deal mainly with situations in which to use caution. In the situations where the company has put up big silos between areas, you must realize that you're not going to get many chances to talk. You have to make sure that you don't say anything that makes future communication more difficult.

Remember that speaking is irreversible. Once you have said something, even if you say you want to take it back, it's out there, and the listener may remember it. So, be careful about what you do say.

Something to work around in communicating is limiting the use of jargon. We, as actuaries, have an awful lot of jargon, and investment professionals have their own jargon. Sometimes actuaries find themselves talking down to listeners within the insurance company who don't understand what we are doing. We need to work to avoid that in talking with investment professionals, as we can't presume that they're following what we're saying. It is a tricky balance to bring the person along with you without implying that there's something wrong with them for not being able to follow what you're saying. They are hearing, for the first time, something that you spent months and/or years learning. You have to strategize your speaking to build a long-term relationship rather than to win today's conversation.

I suggest that you spend plenty of time working with your investment folks trying to find out what's important to them. Learn their successes in the past week, month, quarter or year. This will reveal much about how to position your discussion by learning how they measure success. We've come up with some rather complicated and intricate actuarial methods of measuring success in our endeavors in an insurance company, and often those measures aren't even known to the investment professionals, let alone used by them. They use completely different measures. It

doesn't usually make for a very fruitful conversation to start by arguing and telling someone that the way they are measuring success is wrong.

Another caution in talking is that sometimes there will be compensation issues. One of the things you'll find when you communicate with investment professionals is that there are differences in orientation. I have found that investment people are generally transaction-oriented, whereas in most traditional actuarial work, there is almost no transaction orientation. A portfolio manager who has a great day because he managed to close a strong deal and bought a good security just doesn't compare to what most actuaries do.

We, however, push a button and the company commits a lot of cash right that minute to actually do something. The portfolio managers deal with cash for the most part, and with the example I gave about projections, one of the problems in getting the projection synchronized was getting the actuaries to think about cash flow. That was three-or-four levels of analysis away from what they were thinking. They were almost unwilling to admit that there was any significance to cash flow in their models. On the other hand, I never did try to get the investment folks to think about investing accruals.

The investment folks will be making many financial decisions each week, while an actuary may take weeks or months to make one financial decision. One of the biggest, most fundamental differences was that investment professionals will have incentive compensation that is related to their own personal performance. It took me a number of years to understand its consequences. That is something that very few actuaries ever experience. It makes a huge difference in your decision-making and in your outlook, and you just have to think about that and try to get into those shoes.

Lastly, most investment professionals have little to no insurance background. Similarities are quite extensive also. The financial, quantitative, and analytical orientation that actuaries and investment folks have is the driver for many possible connections that we can make. The most important similarity is that both actuaries and investment professionals want to be part of a successful organization. If you start your whole relationship from this point of view, you can build from there, rather than building the idea that we only want the actuarial department to be successful, or we only want the investment department to be successful, but instead—that we want the whole organization to be successful.

On the compensation side, the investments folks I worked with were not at all shy about describing the levers and knobs to their incentive compensation systems. There was some combination of constraints and triggers with spreads on new investment versus some market basket or cash balances and timeliness of purchases. They could have credit loss, but often they won't. They could be compensated based on trading gains, hedge effectiveness or cost of hedging programs. You may find a duration matching measure in compensation as well.

They'll be getting bonus dollars based on exact performance of their new purchases or their portfolio. This is vastly different from the standard actuarial bonuses that are tied to general company or business unit performance rather than specific dollar measurements of things actuaries have done.

The investment folks I worked with wanted me to talk about product pricing. They wanted to understand financial reporting, and wanted to know how it all works. How does what they do fit into making the company become financially successful? They saw me as the key to understanding that. They were very frustrated when I couldn't explain it the first day that I met them. Over time, though, we were able to build on, and use that, which was really the key thing we worked on together.

Lastly, you need to build a very long-term relationship. There is no need to tackle every problem today. I suggest that you develop a way of looking at concerns on a regular basis, spending at least half of your time talking about their worries and the other half on yours. When you set agendas, and when you're talking, remember "more is less." Quit while you're ahead. Finally, for you to say the right thing at the right time you need to stay quiet most of the time.

MS. JOSEPHINE ELIZABETH MARKS: One of the sessions yesterday was a panel discussion with non-actuaries who were asked their view of the actuarial profession. The session can be summarized in two main messages:

Their view was that (1) actuaries were extremely smart, and (2) that actuaries were very poor communicators. The other comment made was that communication can't be taught—that it's more of a state of mind. Perhaps it echoes David's comments today that we're not here to educate anyone now that we know it can't be taught. Instead, we are here to share experiences on this topic.

The presentation I put together is from the perspective of an ALM practitioner, which is traditionally a role that tries to straddle the investment and actuarial sides of an organization. I'll talk a little bit about the ALM process before really getting into the communication theme. What is asset/liability management? There are two perspectives in asset/liability management. The traditional view is that it's the process of linking asset portfolios with product liabilities. However, an emerging view of asset/liability management is that it's a broader macro perspective looking across the entire balance sheet. In terms of communicating with investment professionals, this is the former perspective.

Where does asset/liability management fit? It is very much an area that bridges the gap between the assets and the liability side of the equation (Chart 1). The A box—the asset box—is traditionally populated by portfolio managers—people with a CFA designation. Many of these people will be traditional asset class managers. Sometimes they'll have more of a trading or quantitative perspective. Occasionally, if you're lucky, you'll find a portfolio manager who is a generalist and looks across

the whole portfolio. In my experience, the asset class managers tend to be asset class focused. They're equity people. They're bond people. They do this with a passion and are very focused.

The actuaries are on the liability side, whether it is product design and pricing or sales and marketing. Between the two we have the asset/liability management function, which is typically a very small number of people. This is a situation where a large number of people are looking at assets, a large number of people are looking at liabilities, and a very small number of people are trying to bridge the gap.

Another perspective is looking at ALM in terms of where it belongs (Chart 2). Is it linked more to the investment function or to the finance function? I view the finance function more as the measurement and quantification side of ALM, but in terms of looking at ALM as a proactive role, I view it as fitting more on the investment side. One of the precepts of investments that's not always understood by the investment folks is that in an insurance company the assets are really there to support the liabilities. The liabilities come first. They're the independent variable, and the assets are there to support them. Sometimes the investment folks believe that the assets "belong" to them, and they can get quite annoyed with the insurance side because they're viewed as taking "our" money away from us to pay people. Each side has a different perspective, but the investment folks really should be there to match the assets to the liabilities. Someone commented that the ALM field had really been misnamed and that it really should be the liabilities/asset management area.

What is asset/liability management all about? In general terms, it's about aligning the asset portfolios with the product requirements, setting the asset mix, setting the risk parameters, measuring and managing, and, of course, as we know from our Investment 101 courses, the asset mix is the most important decision. If you look at it from this perspective, we should have alignment between the liability and the asset side.

This is because when looking at the original training of asset managers, the very first tenet of the CFA program, for instance, is that the most important objective of investment management is to understand your client and meet your client's needs. Thus, it would seem to be well-aligned, but in fact, both groups have very different agendas, and they often don't align at all.

Perhaps you've heard that the most important element of real estate is location, location, location (Chart 3). I've long-believed that the most important element of ALM is communication, communication, communication.

We have this ALM function that's positioned between the asset and liability sides of the enterprise. On the asset side, typically we have things split out by asset class, such as bonds, stock, mortgages and real estate, and maybe some specialty funds. On the liability side, we have the product design and pricing, valuation and finance, tax, legal, marketing and sales. Then there is an ALM person in the middle trying to

bring all these groups together and get them talking. The communication challenge is really formidable because there are so many players.

The irony is that one might assume that the communication path flows from the liability area to the ALM area, then over to the asset area. However, in my experience, the communication challenge ends up coming in from one area and back out to another function in the same area. For instance, even though the bond and mortgage groups might sit right next to each other, the ALM area might end up giving information about bond rates to the mortgage area, and vice versa.

Similarly, on the liability side, we were doing some ALM work with one of our product areas and an issue came up about product guarantees. The product design folks said, "We have to have these guarantees because we need them for marketing purposes," and then we had a discussion with the marketing people, who said "We don't need product guarantees. I don't know what those guys are talking about." So, communication really has multiple points of contact.

The other thing that struck me, particularly in ALM, is that it was uncanny to realize how new some of the ground was that was being covered. I recall a classic discussion with the head of real estate who was surprised to learn that we were using real estate to back liabilities. He assumed that real estate was a surplus investment and really hadn't thought any further.

Another classic story resulted from meeting with the people who were responsible for term-life pricing. We had a rather painful meeting at which we tried to come up with an investment strategy to match the term-life product. At the end of the meeting, we apologized that we hadn't made a lot of progress. We didn't come up with a really good investment strategy at the time. We were going to need some more meetings on this topic, but the product design actuary said it had been a great meeting. This was the first time he had spoken to anyone in the investment department. So, sometimes you have to appreciate the history of where you've come from to measure success.

Why do we have communication challenges between these two groups? Why do actuaries drive investment managers crazy? They drive the investment manager group crazy by running these models. They put all their effort into coming up with assumptions, methodologies and approaches, and at the end of it all, they believe that their models work. This trap is probably more typical for junior actuaries. Most people who have been around the circuit realize that the models are just a tool, and that typically, there is no right answer. Sometimes it's difficult to separate yourself from your work after you've put your heart and soul into trying to get the model as close as possible.

Of course, the other thing actuaries tend to do is mistake precision for accuracy. I once worked with an actuary who was developing a model to do some option pricing. He said he was not sure the model was going to cut it. He compared his

model results to the actual pricing on the market, and they were only within .000001. After talking to the head of the bond desk, he did conclude that something was being done to the work, and that we could, in fact, use it.

What are the communication challenges between investment managers and actuaries? David talked about the functional silos—many organizations, separate departments, ghettos of people, buzzwords and secret handshakes. Again, picking up on some of the themes that David referred to, the investment folks are very performance focused, often asset-class specific and heavily driven by their incentive compensation, focusing on real-time trading and their status in the market. One very simple observation in dealing with anyone on a trading desk is, for Heaven's sake, don't try to talk to them in the morning. Wait until the afternoon. You know, that busiest time of day for a lot of the trading—especially the bond trading, which is in the morning. If you catch them at the right time of day, they're in a much better frame of mind. On the other side, there is perhaps more of a long-term, strategic, intellectual focus—a product or client perspective, coming at it from very different backgrounds.

General comments—trying to build a common picture, shared vision, win-win negotiation, wearing the other hat, putting yourself in the other person's shoes—are all ways to communicate. A particular presentation suggested something called the "know-feel-do" rule. It's general advice. When you're communicating with someone, and trying to pass on information to them, ask three questions at the end of the communication: What do you want them to know? How do you want them to feel? What do you want them to actually do?

In regards to training for actuarial students, we wondered if we could train them to feign empathy. All you have to do is ask, "How are you doing?" You don't really have to wait for the answer, but just make it look like you're sincere. If you really care about the answer, that's a bonus. Lastly, validate the transmission. Has your message been heard? "I don't know what you thought you heard, but it wasn't what I thought I said."

MR. ADRIAN HUSSEY: I'm going to adopt the framework of differences that David started out with, talk about it, then try to apply it briefly to the guaranteed equity example that we worked on with some products in Canada. I know there are similar products in the U.S.

Investment professionals and actuaries are separated by differences in traditions, training, and organizational structures that they're familiar with, or by separations created from the organizational structure overall. They draw from different experiences, and, I think as a result of the previous four, they have very different viewpoints on matters that they sometimes have to share.

Table 1

Different Viewpoints
Guaranteed Equity Products

	Actuaries	Investment People
Tradition	<ul style="list-style-type: none"> • Pricing Actuaries 	<ul style="list-style-type: none"> • Financial Engineers
Training	<ul style="list-style-type: none"> • Actuarial valuation • Provider of risk capital 	<ul style="list-style-type: none"> • Risk neutral option valuation • Risk hedging
Structure	<ul style="list-style-type: none"> • Combined pricing/risk assessment • Local risk assessment 	<ul style="list-style-type: none"> • Separation of risk management and pricing • Institutional level risk monitoring
Experience		<ul style="list-style-type: none"> • BIS regulations • U.K. minimum rate guarantees • Derivaphobia
Initial Viewpoints	<ul style="list-style-type: none"> • Attractive risk 	<ul style="list-style-type: none"> • Under-priced • Unmanaged risk

There are three traditions that we have to worry about rather than two. I think a split is emerging in the investment community. I come from one part of that split, which played a part in the guaranteed equity issue. The first of the three traditions is the traditional investment management, which is based on financial statement analysis of some sort, whether from the point of view of valuation or credit risk. There is always the element of economic divination. In the end, it's ultimately a subjective and a judgment-based decision-making process.

These people may look at all sorts of data and see quantitative inputs, but within the traditional investment community, the ultimate black box is the investor's head. You never really know what's going on in there. You cannot back test what's going on in there, and you don't know how it's going to behave in the future.

A new tradition evolving in the finance area is really followed from the options theory and the portfolio theory. It has 50 years of theory behind it, it has become very prominent in the investment-banking world, and it is the basis of much of investment banking activity. It hasn't really penetrated the insurance side of the world or the investment world as much as it has investment banking, or even the corporate world. That is the tradition from which I will speak.

Finally, there is the actuarial tradition, which I don't know a great deal about. I did the same thing as David. I quickly phoned some people to see what they thought. What I understand is that the actuarial tradition is more statistical and more predictive in its orientation than financial engineering, and the legal content may also be more prominent.

I will take a little closer look at that. You have a common heritage in the actuarial profession, which is identified as a specific profession in the way that financial engineering is not. Training and orientation comes with it. This may be different, however, in the U.K. It may be more pragmatic and statistical in Europe, more legal in North America, and the statistical content may be somewhere in between the U.K. and Europe in North America.

There are different traditions around the world. I think financial engineering is growing up in a more globalized environment from its outset because it's really only 20 years old. The first swaps were done in the early '80s, and they were back-to-back. They weren't even intermediated.

The financial engineering profession has really grown up relatively quickly. It has tended to be fairly entrepreneurial in that the banking industry attracted the people who had quantitative backgrounds—particularly stochastic sorts—from areas such as physics, math, electrical engineering, etc.

If you look at a desk like our own with people within a 20-year age span, there are engineers, who were the first people in, and now people are coming out of programs at a master's level, specifically oriented to mathematical finance.

Your own profession is something like a Mandarin sort of a culture. An element of an entrepreneurial and cowboy culture exists in financial engineering and the traditional investment world. Also, because of different heritage, there's an individual canon in each case. In some cases it's surprising that it would be as different as it is. There is a lot of room for financial engineering and actuarial worlds to come together. They can do it relatively easily and I think it's underway.

In terms of the financial engineering canon, there is risk-neutral pricing. That's what underlies the whole options pricing world resting on efficient market theory and arbitrage-free assumption. The focus is on common measures. They understand things like total return and volatility, and by nature, they're risk hedgers. They are people who don't like risk. They figure out how to get rid of risk. What they want to take is spread. Or, they're traders who are making a market, but even then, hedging that trade is a big part of what they do.

Now, my understanding of the actuarial world is that it is more predictive in its nature. In terms of pricing, there's a whole set of measures in cost-of-capital, real-world pricing, and real outcomes, which, to investment professionals like myself, are completely alien. Things like statutory yields and reserving are not picked up in our training and sometimes they don't make any sense at all, even if we do start to understand them. Amortization is an example.

Finally, while this may be more important when we start to talk about the guaranteed equity world, the actuarial professionals are diversifiers. They're

providers of risk capital for some residual risk. While the derivatives world has risk capital and has to have some against their residual risk, their orientation is not to take naked risk. They're people who fundamentally think in terms of hedging.

Looking at some of the different experiences of the financial engineering world, most of it has come out of the derivative-based industry—more recently, hedge funds. Earlier, some people were saying that efficient markets are gone—that there's no such thing—and yet, I'm including them in here in a profession that I say rests on efficient market theory.

I'll talk more about some of the cultural elements. If you look at the hedge funds and the focus on risk management in the hedge fund world compared to the focus on risk management in traditional investing, you'll find a very different perspective. I think that risk management orientation is something that's come out of the financial engineering world and barely exists in the traditional investment world. In that sense, the hedge fund and the financial engineering worlds actually share quite a bit.

As already indicated, this has been a highly entrepreneurial development. It wasn't that long ago when someone came in, did a model for something, ran it in a spreadsheet and traded off it. If someone offered them a better deal, they put it on disk and went across the street.

There is already very intense modeling in this area, particularly in the investment-banking world where it led to the compression of spreads. That has certainly happened in all of the derivative worlds. In the plain vanilla world of interest rate swaps or currency swaps, winning a deal was the difference of a basis point. Therefore, how you modeled the front end of a yield curve meant a great deal in terms of your ability to win business. This is why there has been an area of intense competition in that regard.

Even more importantly, there has been a series of debacles that people know about. This includes Orange County, Gibson Greeting Card and Barings Bank, and most recently, Long-Term Capital Management. They've been significant enough, or at least they looked significant enough that there has been a fairly strong institutional response in the banking and regulatory worlds.

In the case of bank regulation, it's been a global regulatory response from the bank of international settlements. That has turned out to be some of the background and experience arising from the derivative world, which was very important when we entered in the guaranteed equity discussion that took place within Manulife.

The way the culture in the derivatives world evolved from this series of losses and the legal cases with the global risk management response, created a number of things that helped reinforce differences between actuaries and financial engineers. This is because it really reinforced aversion to naked risk.

It reinforced focus on hedging and the measurement of how good your hedges are and also the notion of looking at risk avoidance and limitation and looking at that on an organizational basis. Looking at how the risk in one element of your business combines with the risk in another element of your business, and how you look at that for an organization as a whole.

Except for the focus on benchmarking, there hasn't been as much evolution in the traditional investment area. As you start to get the focus on benchmarking, start to really take a look at the question of performance and what you can really expect—the question of whether you think performance actually exists and whether you really want to pay for it. Surprisingly, that has not evolved nearly as much one might imagine inside insurance companies, at the retail market or even the pension market.

Now, looking at some of the different experiences, one is that the two professions are comfortable with very different risks. My sense is the actuaries are very comfortable with the diversification of the insurance risks with which they're familiar. We see it in assessing, mortality, accidents, lapses, etc. They are very comfortable looking at a set of risks, and because of the familiarity, that increases their level of comfort. Financial engineers are familiar with the concept of diversification. It's fundamental to portfolio theory, but from a financial engineering point of view, the more exciting part of life has been the derivatives for the first 20 years. Asset allocation has only returned recently. If you're a bright, young, academic, you don't study derivatives anymore. Asset allocation is actually becoming a subject of interest again.

One of the things that the background of financial engineering leaves is a fear of systematic risk, which becomes very important when you start looking at something like guaranteed equity. From the financial engineer's point of view, that's systematic risk. You had better hedge it away. Whereas, from the actuary's point-of-view, the need to hedge is not a natural response.

One of the other elements due to systematic risk is whether time diversification really exists or whether it can be counted on. And, finally, there's mark-to-market culture, which Josephine has already referred to.

Investment people think of their risk as something they live with—profit and loss (P&L) today, P&L this month, or P&L this quarter or this year. That gives them a different hedge base than when taking good or bad experience and amortizing it over a long period of time. The ability to control your income—your income measures—through amortization, is not available to most investment professionals. Therefore, they're very aware of the short-term risk. I think that has less to do with theory than it has to do with the cultural environment in which they operate.

One of the things that arose from the derivatives market, in terms of organizational difference, is that within the banking world and within the regulatory world there

has been a clear separation between the pricing or trading of risk and the measuring and monitoring of risk. There has also been an evolution. For example, in the last 10 years or so, mid-office audits have been used as a separate function.

In some respects, I think an ALM function plays those roles, but it hasn't grown up in the same culture. To some extent, the insurance industry is still evolving the notion of overall organizational risk that the banking industry has gone through.

One of the things that leads to is the measurement and limitation of cross-business unit and cross-product risks is fairly prominent in the banking world. It's also fairly prominent in the financial engineering world and gives a different perspective on the subject. It's also really been, at this point, well-enforced by the regulators, and in many respects, kicked off by them.

Looking at guaranteed equity products, there are different traditions with the pricing actuaries and the financial engineers. In the training, there is the actuarial valuation. Then, there is a provider of risk capital and a real, or a predicted discount rate, and real growth rates for the growth in the assets.

In the investment world there was risk-neutral option valuation. We say not to worry about your growth rate. Your discount rate is always risk-free. The actuaries say, what are you talking about? How can that possibly be the case? In reality they're going to grow at the real rate. There was a disconnect between the two valuation methodologies and a mutual misunderstanding of those two valuation methodologies.

In structural terms, I think that risk assessment and pricing tends to be combined within the actuarial profession. I think of it as being local risk assessment in that the risk related to the product is what you're pricing rather than across business units or global risk. In the investment world, what has evolved is more of a separation of the risk management in pricing. It's necessary to focus on risk management at the organizational level. Even though some of them are local, the focus has grown to be increasingly organizational. View the risk experience in an organization as a whole.

In terms of experience I've left a blank there for the actuaries. On the investment side, the BIS regulations were critical. This really institutionalized value-at-risk as a measure. Value-at-risk is something that people have to focus on, which is probably one of the most active areas still in terms of developing methodology in the finance area.

One of the things that was most interesting to me as the guaranteed equity debate went on was that people didn't seem to take much notice of what had gone on in the United Kingdom with respect to minimum rate guarantees. What happened was the regulator came in and forced action and, at one point, the whole insurance industry was stampeding into the market to buy puts. Also, a couple of academics

in Toronto that had been involved were consulting the regulators here, and were amazed that no one was worried about what happens when everybody stampedes to the door at once if they get forced to hedge.

The experience with other derivatives markets didn't seem to be part of the actuarial experience, and it didn't seem to be a concern. I think about the whole "derivaphobia" thing—that anyone who's grown up in the derivatives market is used to everybody treating it like some sort of bomb that's ready to blow up. That's really gone alongside this whole development of risk management orientation. At the end of the day there were quite different initial viewpoints. On one hand, there was the actuarial side of saying this is a very attractive risk to have, and on the other hand, the investment people said it was under-priced and unmanaged, so they started in different places.

Matters were complicated because, in some respects, it looked like the same languages being spoken. But there may be quite different meanings. Determine the possible states of the future. Sign some probabilities to the states. Determine the cash flows in each state, then wait and do some discounting.

It sounds like we're basically going to do the same thing. The only problem is that the financial engineers got a price that was two to five times as high as the actuaries got. It looked like the same problem—essentially the same language—but at the end of the day, it wasn't the same at all. You can imagine this engendered a long and vigorous debate about pricing. Also, people on each side saw different regulatory responses occurring in the future.

The question of actuarial pricing versus risk-neutral option pricing is the nub. The key thing is that it uses this risk-free growth rate. I think this concept was offensive to people who weren't familiar with it or hadn't worked with it before. This is why that appeared completely inappropriate to a number of the people who had priced it from an actuarial perspective.

The other thing that didn't become a center of controversy, but really was something we started to think about more frequently on the investment side, was that an option price is based on the expectation. I think a lot of the actuarial pricing is based on the assessment of the tails, and at some point, we were working with a blend of the two. I think we started to realize that it just doesn't make sense. The tail doesn't really mean anything once you're into an options pricing mode, so I don't think it's the right way to look at reserves. We went through a resolution process that was just debate and more debate, and initially there had been actuarial modeling.

Then there was a round of modeling that had been done within the capital markets group. That eventually evolved to a point where a fair bit of joint modeling was done—where models developed in the capital markets group were inherited by the pricing actuaries in the product areas. They started to ramp up their own financial

engineering capability by starting to hire people from outside the actuarial profession to do some of this work.

To me, this is a rational response and they were growing capability very much the way the banking industry had grown its own capability. This was to get anybody from anywhere who happened to have the skills that could help. I think that the modeling capability was brought close to the product development, which is probably the right way to go. Nonetheless, there was still more debate through that process. There was regulatory participation and more debate related to it and the expected outcome.

What sort of resolution did we arrive at? I think the tentative resolution is not a fragile situation by any means, but it's not complete either. We've arrived at a situation where we say that risk-neutral valuation is appropriate for option pricing. What I mean is that some day you might want to hedge or a regulator might make you hedge. If you have to do that, you may consider going into the business knowing what it's going to cost you at the time. This is because if you have to go to a capital market to get the hedge, you need to know how they price it. You should do that piece of the activity at the outset to know what it looks like.

For setting reserves, the conclusion is that the appropriate actuarial approach to achieve real growth rates is by using a discount rate. One of the things that evolved from Manulife was establishing equity risk limits at the corporate level in the sense that equity risk is sitting in surplus in all of the segments.

In making this assessment, you should ask the following questions: What does the overall equity risk for the corporation look like from a variety of measures? Are you comfortable with that limit? How are you going to allocate that limit between the businesses? These are things that you need to look at.

We also introduced a bank-like mid-office audit of the valuation and reserving models. In other words, some of the capital market assumptions are now always being reviewed at this office, and the modeling changes within the business unit are also done through our mid-office. This is standard practice.

In a trading room of an investment bank, if you develop a model, it will inevitably be reviewed somewhere else in the firm for all the technical elements of the modeling and the assumptions. Also, in the meantime, the regulator has introduced some higher capital requirements, which have affected the types of investments that get offered under the guarantees because the capital charges are related to the volatility of those investments.

I will close with just a couple of other thoughts. Some differences still remain in the two views, although I'm not sure that a real theoretical reconciliation exists at this point in time, even though I don't think there are huge pragmatic obstacles.

I suggest, though, that the reinsurance market really backed away to some extent. There are not fully evolved capital markets for long-term risks, equity market risks or other market risks. It really begs for the creation of such a market, and I don't think people are really going to know the right way to value these things until an active market in risk transfer emerges in this area.

The other thing to mention is that the financial engineering profession has matured a great deal. At this point, if you're a smart, young, academic, you don't do options pricing anymore. You might go into risk management or look at a variety of other areas.

In terms of risks like these, I think it's relatively easy for the actuarial profession to catch up to the necessary extent. That leap is not very hard in the sense that it's almost all quantitatively driven, and you don't go into another head space in the way you would go to traditional asset management.

Another point is that we use interns from a local master's degree program in mathematical finance, and this year the majority of the students actually turned out to be from actuarial science, whereas there had been almost none in the earlier years of the program. The evolution of people from your own profession are going to be coming equipped with both sets of skills readily available. There shouldn't be any problem in getting fully up-to-speed in this area. In fact, the whole history of this is that anybody who had the required talent and the background got in. There shouldn't really be any obstacles, as there isn't a formal designation for people who end up in the financial engineering area.

FROM THE FLOOR: I'm looking for some guidance. How would you go about getting investment folks interested in a new type of investment, even a simple derivative that, you as an actuary, feel would improve the asset/liability relationship of a particular block of business?

MS. MARKS: When you're working with the investment folks you want them to take ownership of the issue and the problem and to somehow jointly work with you to get a solution. If you've already worked out all of the answers, it makes it a little more difficult.

I don't know if you can still ask for their advice and input, even if you don't need it. I know when we went over to the U.K., I was one of the people involved in hedging our guaranteed annuity risk. When we went to meet our investment folks, they said, "We've got this problem and we need to hedge it. What do you want us to do?" We said, "We didn't have a clue. We want you to help us figure it out."

The best way to position it is to appeal to their market knowledge in order to help you take it from the theoretical research stage, or whatever stage it was in, to the applied stage. Then you say that you have an idea and ask how you can actually implement it?

MR. INGRAM: My reaction is to ask more questions of you. What process does your company or investment department have to evaluate new opportunities in general? Find out how to get this on the list of things to be evaluated.

At some companies, this process is not really worked out or formalized, and the last new idea we examined was years ago, which wasn't any good. If that's the situation, then somehow or another, you should help champion the idea of implementing a process like that in general. First you can have new investments and second, you need to have a process for evaluating them and figuring out who needs to be involved in that process and how it fits into your existing portfolio strategy setting. Also, see how it fits in process, and again, whether or not your portfolio strategy is something that was written down many years ago.

You then have to figure out a way to get around that kind of attitude, which some companies certainly have. That's the way we've always done it. The people who worked that out knew what they were doing and we're going to keep doing that because it's what we do well.

There are an awful lot of hurdles to overcome if that's what the problem is, but I would approach it as a generic way of saying that the world keeps changing. We need to have this general process of bringing in new things. Don't just think of it in terms of the one alternative that you think is a great idea for this, but go to one of them and ask what the three or four things are that they would like to see you look into. Come up with a list of things including your ideas, the criteria, and the process for evaluating, accepting, or rejecting them. This can be applied to your suggestion as well.

I also suggest that you make sure when you're setting up the evaluation process that it involves people beyond the investment department as well—that somebody from the ALM area, the actuarial area, or the product development area is involved in that process. If it doesn't exist, then it needs to be set up.

MR. HUSSEY: You can always outsource it. We face the same problem you do. Traditional asset managers want to live in their traditional zone. If they like bonds, they like bonds, and that's all they like. If they like equities, they feel the same way about equities, and if you suggest to them, "Why don't we take one of these and convert it into one of those?," you should forget it.

If we look at the response of the pricing group in relation to guaranteed equities, their response, in a sense, is to build that capability in themselves over time and regain ownership of it. I think that's an appropriate response in a lot of ways. If you outsource something, that wakes people up because then they have to adapt. If you don't, they can stay in their own world forever. If you've got that capability, it's worth doing, and I'm sure a lot of people would be happy to solve your problem. All the investment people would argue that the competitive market is the right way to go. So, go access a competitive market.

MR. INGRAM: One story that might relate to this is the thought of translating the aspects of this situation you're trying to put forward into the terms of the bond manager or the mortgage manager, and the experience I had goes way back. My first job as an actuarial student was to take cash flows that I was given from the investment area who was generating these non-traditional joint venture investments, and use those cash flows to calculate a bond-equivalent yield and a mortgage interest rate equivalent, because the bond people and the mortgage people didn't talk to each other. The mortgage people didn't think that a bond coupon was the right way to think of yield, and vice versa. The people who were championing these investments at that time realized they should just get somebody who can generate a translation of this investment into the terms of those people. They could sit there, set it up, and they could ask, "What's better, this joint venture or that bond you bought last week or this joint venture or that mortgage you're presenting?"

MR. HUSSEY: One of the advantages of going to people if you don't have a financial engineering group following that route is that the profession grew up crossing asset classes. They didn't grow up thinking about equity derivatives or interest rate derivatives. They really started saying, "If we can use it here, let's use it there, and let's use it there." That's been a big part of how the industry evolved, so those people don't tend to have asset class loyalties. They tend to have methodology loyalties.

One of the things that is also coming along in that market is most of the fancy derivatives never get used. After a period of time, they realize that fancy derivatives are not going to create any business for us, and all the plain vanilla derivatives have margins that are thin. What they've started to do is combine it with regulatory arbitrage. It's all structures related with simple derivatives. There are also some real benefits there. That's one of the advantages of going that route. You start to get back into an area of looking at things from a tax point of view, and from an income point of view, etc., with the structure in a simple derivative. It probably fits fairly well with your needs in other regards as well.

FROM THE FLOOR: This is coming back to the compensation issue. I am thinking of some hypothetical examples. You go to your fixed income account manager and say that you want to shorten things relative to the liabilities, but they want to make more spread because that's where their compensation is. In general, how are those things handled, or what is a good resolution to those types of things?

MS. MARKS: I think you have to be able to manage it within the context of tolerance limits that you've set as an organization and that they have to manage within. On the other hand, I heard a horror story from one company a few years ago, in which their actuaries came in at the end of the year and said they had recalculated all the durations. You've got to take the portfolio short. They took the portfolio short just as the rates fell the next year. At this time, their actuaries came

back and said they made some mistakes and did it wrong. It's actually a longer portfolio, and they rebalanced their portfolio long just heading into the next year.

There is a little sympathy for the investment people in terms of having to rebalance, but at the end of the day, you've got to have the process in place. What David was referring to within your organization—whereby they have to operate within a disciplined mismatch situation, GAAP or whatever—and they can make their calls within that range, but they just have to operate within that range. Otherwise, I don't think you're going to win that one.

MR. INGRAM: Let me just relate a couple experiences I've had. You never convince somebody to give themselves a lower bonus this year without bringing in an awful lot of force from outside.

Often, the compensation agreement gets negotiated as part of the deal. One example, and this goes back to sometime in the '80s, is that the compensation of the portfolio managers at the company I was with were completely based on spreads. That was all they were measured on. Here's what you bought. Here were the spreads of the things compared to a market basket spread for the same kind of investments. What the portfolio managers wound up doing one year was sitting in cash the entire year waiting for the spreads to widen. That led to a rule for the next year where there was a limit in their compensation scheme as to how much cash they were allowed to hold. Basically, this said that they were going to calculate the numbers as if they received them. Any excess cash they held above that limit was going to be factored into their spreads and invested in treasuries, which would eliminate their bonus.

MS. MARKS: Just as an aside on this same topic, we did some very simple calculations in our company because, as you know, investment managers will all have views on spreads and they often have a desire to stay out of the spread market because they think spreads are going to widen. It's interesting to look at the products across our insurance portfolio. You'd work out the break-evens very easily. You could mathematically work out how much spreads would have to widen and how quickly they would have to widen for this to work out over the life term of a five-year GIC or a 15-year annuity. The numbers were actually staggering, and we put that back in front of the investment people.

Your view is saying that you expect spreads are going to go up 100 basis points within three months for this to work out from a performance perspective. It was a real eye-opener for them in terms of understanding what position they were taking, because there's always the short-term view that spreads are going to widen. We don't want to do it, but then when you relate it to the product side, it really sharpens the focus.

MR. INGRAM: One of the other things we did in that regard at the company I was with was shortened the measurement period that started re-measuring how the

spreads were done weekly or by some other frequency. Bringing that into a shorter period also made it more effective. Regarding the question that you specifically raised about durational issues, I agree completely with what Josephine said—that it has to be worked into the compensation structure as well, is some kind of way targeting how your ALM is done.

You have to do it in such a way as to avoid the situation that Josephine described as the "whipsaw effect." I know of at least one other company that had exactly the same experience. They managed to sell and buy at exactly the wrong times because of differences in ALM opinions. My reaction to the problem of modeling and relying on that one number for the duration and betting so much money on measuring it right is probably a dangerous thing to do. You have to think of a broader way of looking at your ALM problem. This will give you some more complicated answers rather than just a single number.

MR. GREG SCHNEIDER: (Deloitte & Touche) I think that communication is certainly facilitated by having people interact with other professionals more often. I'm wondering if any companies have experimented with putting investment professionals in the product strategic business units (SBUs). Many of the larger companies have, for example, valuation actuaries out in the product SBUs, and I think if we can send actuaries out into the real world, we might be able to do the same with investment personnel. Do you have any thoughts on that?

MS. MARKS: It sounds like a good idea. I know quite a few actuaries have managed to get into the investment side. Some of them have even managed to make their way to the trading desks, but I haven't heard of any situation where investment people going the other way. That's interesting.

MR. HUSSEY: I think this might pose a compensation issue and that very few investment people would actually fit into the compensation structure of an insurance company business unit.

MS. MARKS: In our case, our investment people have compensated themselves within the insurance structure so it could have worked. I think part of it is that they are so passionate about being investment managers. I think they know, just within our ALM group that was part of the investment operation, that there was always this sort of stigma from the investment side. I know the head of investments was surprised. We had a summer student come in and rotate through the different areas. At the end he would say which area he wanted to go to, and the first year the student said, "I want to go to equities," and everyone nodded sagely.

The second year the student came in and said he wanted to go to ALM. The investment people were just staggered. It was a real shock that he would want to do that. He could be on a trading desk. Why would he want to do that? I don't know.

MR. INGRAM: What little movement I have seen on that is that it goes the other way—to aggregate the investment functions in a more intense way rather than diffusing it into business units. There is certainly something to be said for the investment managers taking about and concentrating on broader roles.

I know at least one company that has completely undone its segmentation and manages its entire general account as one big portfolio, which is backed up by an extremely complicated and intense asset/liability regime. This ensures that the whole portfolio then matches up with the needs of all the different products it's backing. However, in that case, it's gotten to the point where there isn't even a relationship between a universal life portfolio manager and a universal life actuary, but all the portfolios for all the products are managed together.

Chart 1

Where Does ALM Fit?

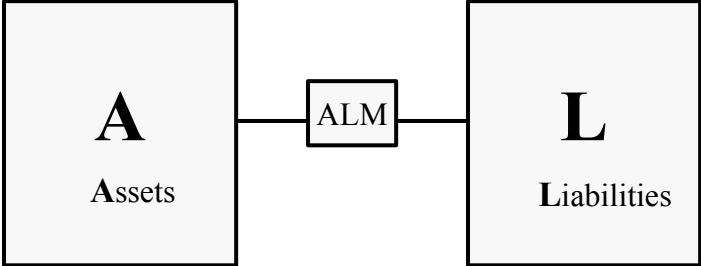


Chart 2

Where Does ALM Belong?

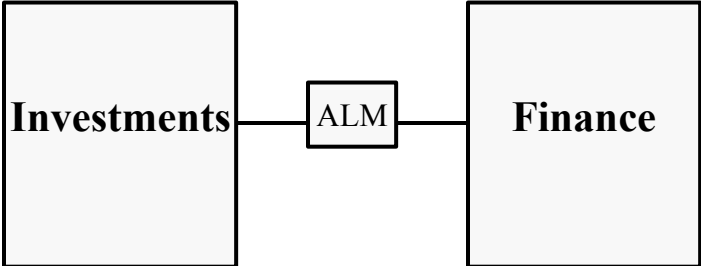


Chart 3

Communication

