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## Session 131PD Using Value-Added Information in Practice

**Track:** Financial Reporting

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*Summary: Expert panelists look at how to maximize the usefulness of value-added methodology. Session topics focus on how to leverage value-added information and not on the actuarial issues of what value added is or how it is calculated.*

**Mr. David M. Brown:** To date, most of the sessions have focused on what an embedded value is and haven't really focused on how you use it internally in helping manage the business. The idea of today's session is to focus a bit more on using value-added techniques rather than what they are. Our first speaker is Karl Erhardt from A.M. Best. Karl will give us his view, or Best's view, on how value added should be used to help manage the company. Then I'm going to speak about my experiences when I was in the U.K. using embedded values. And, finally, Armand de Palo is going to speak about views of The Guardian, which is currently implementing embedded values and value added, and why the company is going through that process.

**Mr. R. Karl Erhardt:** I want to take a high-level approach toward value added, describing what we're seeing in the industry today when we talk to companies and then focusing on what value added means to me in practice, particularly in terms of how the actuaries are influencing value added.

The companies we see manage for both short-term and long-term needs of the organization. We'd like to take a long-term focus, as our ratings are focused on claims-paying ability. This means the companies would be there 20–40 years

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down the road to meet the obligations they are writing today. So we're looking for the companies to be creating value in their operations and their daily activity. That promotes financial strength, which is something that we base our ratings on in terms of our models, which are static and similar to risk-based capital (RBC). Obviously, those static models don't take into account the dynamic of real value that would be derived from a company. So, in terms of looking at financial strength, we're looking for the ability to sustain operating growth based on a company's market profile and where it will be 5, 10, and 20 years down the road.

We believe that value added is very important. It will tell us the difference between the companies that will just survive in the marketplace and those that will thrive, grow, and become the leaders of tomorrow.

Finally, value added allows us to compare the advantaged companies with those that are disadvantaged. When you look at the companies today that are advantaged in the marketplace, they look at value added as having a good risk management program, having a strategy toward growth in the future, and being able to realize cost efficiencies in their operations. In this regard, some companies are advantaged over others. Companies with a larger capital base and financial flexibility are much more able to move in and out of investment opportunities and create value for the future.

When I was asked to speak, I put together something that would show we are always talking value with the companies we meet with. And that came down to four different areas. Policyholder value always comes up. Shareholder value is probably the most talked about value-added topic in the industry today. And the others are distribution and the blocking and tackling of your operation.

Policyholder value is derived from offering the highest possible coverage for the lowest possible cost and knowing that the claim will be paid in the future. This is where we're focusing in terms of our rating.

Shareholder value is interesting because we speak to a lot of consulting firms and companies that say they are shareholder value-oriented. But what does that actually mean? That means increasing stock price. We hear a lot about economic value added (EVA) and market value adjusted (MVA), which is based on the premise of earning above what your cost of capital is on a given investment. We're also beginning to see management compensation, (other than the standard stock options) tied into EVA. And some companies are looking at market to book value.

In terms of distribution, we see a lot of value because growth in operations will lead to a strong financial future. We ask companies all the time how will they distribute their product, where are they distributing now, how much can they sell through that, and where are their biggest profits going to come from their distribution in the future? Companies that have built a distribution system are more advantaged than those that are struggling with their current high-cost distribution channels.

Finally, in terms of operations, we look at productivity and efficiency in the everyday operation. Sometimes this is overlooked in terms of value, where value is mainly focusing on senior management.

Let's step back to shareholder value, since it is the most discussed topic out there, and consider how wealth is created for the shareholder. There are some inherent contradictions in this because it's meeting an analyst's expectations, and analysts expect stable earnings growth and projected growth. So, the question then becomes, are we managing for the short-term three months out or making our decisions for the long term?

I'd like to focus on the difference between short-term and long-term management. When a company is truly focusing on value, it is looking toward the longer term, as opposed to meeting the short-term expectation of the analyst. "What am I going to do for the next quarter to meet my expectations? I can do acquisitions and the like." This has happened in the past. And recently, we've seen companies struggle and fall to the ground because of managing to expectations in the short term.

So, in light of that, we like to see companies managing for economic value-added. Economic value-added, to me, means real value added. When we talk about MVA and EVA, we tend to come to the market focused on the long term. And I try to think of it in terms of real value-added, meaning: What is my cost of my investment? What am I including in a risk piece? And what am I earning above that? This is opposed to going to the external marketplace to measure my performance.

Think of the tortoise and the hare. Obviously, the tortoise is the long-term company. A company called AIG has purchased Sun America. There are a lot of interesting things happening with that transaction in terms of how it is being recorded. For one, it's going to be a pooling of interest, which is an interesting value-added piece. Within that transaction, there is real economic goodwill occurring. In terms of the value of that transaction, you're at \$18 billion. And the company is now worth \$4 billion, so there's \$14 billion in terms. Although

there's an accounting difference between purchasing and pooling, some goodwill or real value was also acquired. They say the value they acquired is worldwide distribution. And they think that they will be able to make that go forward and realize all that value. Why that's important to me as an analyst thinking about real value is that, if I amortize that over a 30-year period, I actually wipe out more than the company is currently earning. So, obviously, they're projecting large growth going forward. I would certainly not question whether that's possible.

On the other hand, there are companies that go out and buy blocks of business and say, "We're going to earn a good ROE on this." They pay a lot of money for a block of business that ends up costing them a lot down the road. To me, that decision-making process did not take into account the real value or the risk associated with that business.

So, to me, the difference between the tortoise and the hare is actually a company considering its reasonable risk-adjusted returns versus what the market expects it to do. In acquisitions, the tortoise would be the company that goes out and makes a good purchase and the hare would be the company that makes a purchase to increase earnings in the short term.

We see value added occurring in two places. We see senior managers talking about it in annual reports, 10Ks, and the like, because that's part of their job. Part of their job is to provide strategic vision to the company and put together a business plan that moves the company forward. Their compensation is going to be based on their success. When we look at compensation that really is tied to performance of the company, it generally comes in two parts: stock options and deferred compensation. And usually that's tied into the market return, which inherently provides a little bit of short-term/long-term management indecision. There are companies that are looking at a longer-term value-added approach to compensation, but it's not widely practiced.

The part that gets overlooked most when we talk value-added to our companies is coming up with performance measures and drivers of business functions and processes that can be improved and actually add value to the organization. My biggest example of this is a company whose stock price dropped recently from \$40 to about \$1.50. It was a major acquirer, and senior management actually had been replaced at this point. The managers talked the short-term talk. They were able to accrue earnings through acquisitions and hide their underlying operations. Yet, they never focused on improving their functions, such as getting the best technology to produce strong management reporting data essential to

making value-added decisions. And they had very little synergy occurring among all the companies they added.

Value added starts with reliable and accurate information that can enable strong decision making. That comes in two parts. It comes from management performance information and a strong risk-management program. The companies that we see adding value in their decisions can show that to us very readily because they have the information available. Many companies do an acquisition and yet have no information on the company. So, in terms of looking at management performance information, companies are going through their businesses and coming up with key performance drivers that they can measure that business with and then allocating capital based on performance. The information should be timely and accurate, not six months after the fact, the company should be proactive instead of reactive.

The other piece is risk management. I would say those companies that we see with the best financial reporting are in the process of developing a good financial risk-management program. What I mean by financial risk is going through your interest-rate risk, market risk, and credit risk from an overall enterprise basis and then looking at what I would call insurance risk for the products that they're involved in. They also look at the drivers of where they would like their business to be in terms of a spread of risk and developing a risk appetite. The companies doing this are going through the process of identifying what their risks are, defining those risks, taking action to manage to those risks, and then following through with financial reporting.

Other companies are adding, on top of that, identification of their business risks, which is a hard topic to discuss because it varies from company to company. But it's looking at running the daily operations and how the company expected results will occur.

The next thing I'd like to touch on then is the actuarial involvement in the organization and where it's adding value. The main areas are: the pricing, which is forward-looking; the productivity of the company, everyday operations meeting and exceeding the assumptions of the company; being involved in the capital management process; and then focusing on the holding company.

In terms of pricing, it starts with better information. And I think my counterparts are going to address that. But, what I wanted to talk about is the difference between statutory, GAAP, and economic reporting. I want to identify what we most commonly look at and have to analyze in terms of real value. The main difference is in the methods of accounting that we end up focusing on: the

realized ability and accuracy or treatment of any deferred acquisition cost (DAC) or value of insurance acquired.

With respect to pooling versus purchase accounting, it's very difficult to look at companies on an even keel because they are accounting for their major acquisitions in different ways. I can look at two different companies with two totally separate sets of balance sheets. They may actually be identical companies, but look so much different. From our standpoint, how do we look at the company that's truly adding value? When do we start to discount that amount of goodwill, that amount of DAC that was acquired in an acquisition, compared with the company that doesn't have it on its books? Obviously, value-added reporting can help that.

We look at income from continuing operations versus a total return. How much credit do we actually give for real life gains within an operation? Obviously, real life gains are part of our pricing, but not entirely, especially in spread businesses. So how do we normalize that amongst companies we look at?

The final thing we examine is FASB 115 adjustments. They're the major pieces that show a difference between statutory and GAAP and the true value added in a company.

Companies doing the best pricing are using the best technology available. I'm not here to advertise for those companies, but it always comes back to several different actuarial systems that companies are using. From my standpoint, these systems give them better information for their reporting process. I look at a lot of actuarial memoranda from companies, and it's very easy to see companies that are using the latest and greatest software to determine their liabilities. They are actually strengthening reserves. Then we put that next to companies whose actuarial memoranda look 10 years old. They're talking about, "We might need to strengthen," or what have you, but they really don't have the information available to know the exact liability. To me, there is value added to the external community in knowing what that liability is, booking it, and moving forward.

In terms of meeting and exceeding productivity assumptions, the companies that are doing the best job of coordinated reporting are those with the best decision making. They are combining their actuarial needs with the management reporting and coordinating that all within the operations and investment management areas. That's a big circle of knowledge. Everyone knows what is necessary and management then can make its best decisions.

That's important because value added is a better method for making decisions than, say, ROE at times. ROE and return on assets are two of the most commonly used methods. But in determining my value added, I have to come up with my cost of capital. My cost of capital for the company is, say, 11%. Most of the companies in the public domain are probably between 10–12% under the current economic environment. A lot of companies are only earning 7–8% on their life businesses. If they can write more business at 9% on a ROE basis, they're going to do that. On a value-added basis, however, their cost of capital is 12%. Therefore, they're not adding value to the enterprise. They are actually taking away value in the long run. In contrast, they could be earning 20% on a business and not invest in something that did 15% because they do not want to reduce their ROE. Yet, it's something that would add value to the company.

In terms of capital management, I like companies that are allocating their capital based on their liabilities and surplus. They look at strong asset/liability modeling (ALM) against the insurance liability and then identify what the required surplus is to manage those liabilities. Then they identify excess surplus. What you tend to see then are investment policies that say: assets to match are limited to fixed income, "A" or better investments; then they take on a little more risk with the required surplus—maybe BBB, a small junk portfolio and some mortgage loans; and in the end, in the excess surplus they take on higher risk investments.

The only caution in this is the difference between insolvency capital and economic capital—the capital required to move this business going forward in a stable earnings stream. So this is probably one of the best ways that we see for companies to combine their capital management program, and, through that, to allocate their capital effectively.

It's interesting when we look at ALM. Many companies tell us they do it only for the regulatory reporting requirements. Then we talk to a little better company, where managers say they coordinate ALM with their investment management. Better yet are those who integrate it with their financial risk management and those where it's part of their decision-making process. In some it's part of their strategic planning process, where the actuarial department is highly involved in the long-term strategic planning of the company. Obviously, the best practice in the industry includes all of the above. But there are companies that focus at all different levels on that. It's our opinion that ALM is a very important part of capital allocation.

From the high-level standpoint, understanding the business mix of the company is also important to adding value to the company. I'd hate to say that companies

cannot invest in their life insurance operations because they produce a lower ROE or create less value. We have to understand the puzzle that the company is, put it all together, and understand why we're investing all of that. So maybe the best value added to the company is actually not investing in what is the best value-added investment option based on the overall enterprise. Then, it's considering the enterprise risk and what is in there. And that really comes into our cost of capital calculations in terms of analyzing or giving the risk component of capital.

Finally, we think that value added is a long-term process. Obviously, you have to balance your short-term and long-term objectives. But history shows us that focusing on the short term limits our options going forward and in the end, probably destroys value. So short-term companies tend to focus just on short-term growth and increasing market value, not on economic value. They tend to do deals to please the investor community, e.g., cut out \$15 million or \$20 million of expenses in December to add two cents per share earnings.

Companies that focus on the long term build their fundamentals and prove their operations have very strong internal pricing and compensation systems. They have a focus also on the policyholder. In the end, we believe that highly rated companies will have a strong value-added incentive within their organizations. With that, I'd like to turn it over to Dave.

**Mr. Brown:** I'd like to talk about what I see as the main strength of value added and then show how that can be used to help set and validate the strategic direction of the company. It can then be used to help manage performance on a day-to-day basis. By integrating those two—the strategic direction of the company and the day-to-day management—you can ensure that your management efforts are being aligned with where you want to go in the long term.

Let me just quickly identify what an embedded value is, because it's the main value-added tool that tends to be used in life insurance. An embedded value is: the present value of distributable profits from the in-force business; plus adjusted free assets. The value of the in-force business risk is allowed for in that calculation by discounting at the risk-adjusted discount rates. And the projections are done on best-estimate assumptions.

There's nothing magical about this methodology. It's the same methodology used in pricing—that any business school person would use in a capital project appraisal. It's a tried and trusted methodology. What's interesting about embedded values is that, when you look at the change in embedded value from

year to year, you can break it down into four components. There's the unwinding of the risk discount rate or the cost of capital on the opening embedded value. There is the value of new business written in the period. And then there's a piece of variance on the in-force business, which management inherits from the prior period. If that variance is a large number, it's indicating weakness in the model.

Because the same profits rise on all three measures—statutory, GAAP, and embedded values—the important thing to understand is that, when the last policy goes off the books, the accumulated earnings are the same under all three methods. The difference between the three methods comes in when you recognize the profits. Under embedded values and value added, when you write your business, you immediately recognize the full economic worth of that new business. At the other end of the spectrum is statutory reporting where it's 30 or 40 years before you effectively recognize that writing new business was an economically sensible thing to do. And then you have GAAP somewhere in between. If you're using GAAP or statutory, then that means you're not recognizing the full consequences of writing new business in the period today. This means that the performance of future periods is going to be influenced by the actions you're taking today. Another way of looking at it is that your performance today is essentially being impacted by events and actions that were taken over the last 5, 10, and 15 years.

If you then consider the environment we're in, which is rapidly changing, and much harder to price on a cost-plus basis, it's more market-driven. We're making bigger infrastructure investments. And it's much easier to make investments if you are given an adequate return. So if we use an accounting process that tells us how we were doing 5, 10, or 15 years ago, it's totally inadequate. The strength of value added is the fact that it tells us fully the consequences of actions and events that are happening today.

Let me give you a quick example of how value added might differ from GAAP. The two main pieces of information that managers are interested in is the value added on new business and the value added on in-force business. So, you could provide a high-level summary by the different lines of business of the performance over a period of time. If you just focus on annuities, for one company, the annuity line of business destroyed value to the order of \$35 million; \$33 million was lost from the value of in force and \$2 million was lost on the value of new business written in the period.

The company that we were doing this work with had previously been looking at this business on a GAAP basis. On the GAAP basis, there was GAAP equity of

\$500 million. Company managers had a benchmark of 13.5%, so they wanted to achieve profits of \$67.5 million. They had operating profits of \$68 million, and as far as this company was concerned, on a GAAP basis, everything was fine with the annuity line of business.

When we looked at this on an embedded value basis, there had been an increase of value of only \$38 million. The benchmark was \$73 million, so there was value destroyed of \$35 million. The management of this company had a completely different perspective on this line of business.

Here are the reasons behind these two different results. The annuity line of business was becoming more complex and the company had to invest to service the business. GAAP was only bringing into account the extra maintenance expenses in the current period, whereas value added is saying, "These extra expenses are going to occur in all future periods. Are you taking into account that much higher cost?"

The company was having problems with sales halfway through the year, so it introduced a higher commission rate to encourage sales. Under GAAP, this higher commission is spread over all future years and has very little impact on the current period. With value added, you're taking into account the full impact of that commission now to show when new business is impossible.

And then surrenders were increasing. Surrenders were giving surrender profits in the current period, which improved the GAAP results. Embedded value takes the current improved statutory earnings, but offsets this against the lost margins in the future to show that the surrenders are an economically bad occurrence.

Once you have an embedded value model up and running, there are two ways of using it. One is that you set a value at a particular point in time and run the model on the different scenarios. Management is thinking about course of action A or course of action B. You can then use the embedded value model to come up with a value on those two different scenarios and identify which is the better option to take.

The other way of using embedded values is to look at performance over a period of time. You have a value at the start and end of the period. You then analyze what caused that change in performance, which helps management understand the external and internal events that are impacting the company. It then allows managers to react and better manage their company.

In the U.K., there were lots of new companies sprouting up about three or four years ago. So some of the banks were setting up a lot of subsidiaries. The banks and the subsidiaries didn't want to show a series of losses and wanted to have an accounting system that fairly reflected where they were. They decided to use value added. The managers wanted a process and a way of looking at the business that focused all their thoughts around managing to create value. The basic idea is that senior managers think in terms of the long term about where they want to be and in which direction they want the company to go. They then think of the capabilities and the characteristics of the company that will succeed in that future environment. Then they develop a plan to change the organization from where it is today to where it needs to be in the future. Finally, they need a way of monitoring whether the plans implemented are successful.

You monitor that through key performance indicators. The idea behind key performance indicators is, if you're managing to create value, then ultimately some of your economic value drivers must change. If your economic value drivers were things like lapses, expenses, and mortality, to create value, ultimately they must change. However, if you think of mortality and lapses, sometimes it's two, three, or four years before your experience comes through and you can identify whether the management actions have actually had the intended benefit. Key performance indicators are a softer way to identify that our plans are having the success we want without having to wait years to measure the hard financial statistics.

Value creation should be underlying the way management thinks in terms of developing the strategy. You should then be running the models to validate that the long-term strategic direction is correct and viable. You should be using value added at the ends to measure and check that the value you intended to create is actually being created. If it's not, it allows you to take corrective action, thereby using embedded values with a strategic direction.

When you start running scenarios, forcing somebody to think through all the assumptions to ensure that everything makes sense, adds a much higher level of discipline to the whole process. When senior managers have discussions, having hard numbers in front of them about the benefits and the costs involved leads to much better decision making. It moves the discussion from being idealistic and subjective to being much more objective. And if people object to the proposed scenario, because they have the assumptions and beliefs laid down in front of them, it's much easier for them to be informed and to criticize or agree with the proposed strategy. The numbers that have been used are much more rigorously calculated. Many people will use simple spreadsheets or back-of-the-envelope calculations. Clearly, these can be wrong or incomplete. Doing

the calculations creates an effectively laid out plan for how the benefits are going to arise. This allows managers to have much better accountability and the ability to recognize when things are going wrong, which allows them to take corrective action.

This is how value added can be used to help set the strategic direction of the company. It also helps managers understand their current performance. Understanding current performance allows management to react to it and to make decisions to correct poor performance. So the classical way of using an embedded value is, each period, you monitor your current experience in terms of lapses, expenses, and mortality. Through monitoring the experience, you then update your assumptions to get your best-estimate view of the future. Then, at the end of the period, recalculate the value of the company and analyze the reasons for the change in the value of the company. Some of you have actuaries pricing the products who are claiming that they are pricing the products to achieve 12–15% rates of return, or whatever. If they're achieving that, then it's validated by the process. If it's not, it forces them to come out with a business reason to explain to senior management why they're not getting what they said they were aiming to achieve.

Although some people view embedded values as a tool that's just for actuaries, I would argue that it more brings actuaries out into the business arena. Because value-added information, as we saw before when we were looking at the value added by different lines of business, is very simple. If it's a negative number, it forces the business people to ask questions about why profitable new business isn't being written. It's better than finding out that we're pricing to achieve new business profits of 12% using expense allowances but, unfortunately, the costs in our company have changed and the expense allowances are no longer correct. Three or four years ago they were correct and we just haven't bothered to change them. That sort of thinking is brought out into the open. And senior management has a much better understanding of the practices that are going on in the company.

Similarly, you should be integrating the planning process within this procedure. If management is spending lots of time taking actions to try and improve lapses, the fact that no value has been added by the change in lapses over the year is equally important. It's good for managers to realize that all their effort is leading to no improvement. This can then allow corrective action.

So the way to provide information that management can use is to go back to the definition of the change in embedded value I used at the start. There are four pieces: the unwinding of the discount rate, the value of new business, the value

added on the in-force business, and the variance on the in-force business. The variance on the in-force business consists of two pieces. One is modeling error. Life insurance is a complex business and the models we build can't always fully capture the dynamics of the real world. The other is where you may have a long-term assumption for mortality that's a good assumption, but year after year, clearly, you're going to have fluctuations in your mortality experience. If your mortality is lower than your long-term assumption, that leads to higher profits in the year, which boosts your free assets and leads to an increase in value. What tends to happen is you have a deadline for providing the embedded value numbers, so a team of people works hard to get the numbers out. You mechanically work out what the value of new business is. That's easy. You work out the value added on the in-force business. That's reasonably easy because you had an ultimate lapse of 10% a year ago and now have an ultimate lapse of 9% for this year. It's pretty easy to work out the value added by that change in the ultimate lapse rate.

The hard part for the actuaries who are doing the work is understanding the variance on the in-force business. You're trying to identify any weaknesses in your model and correct them before you present the numbers to senior management. Unfortunately, you've just come through this process and spent all your time focusing on the variance on the in force. What often happens is that the information you present is what you've been spending the most time on, which is the variance on the in force. But that's of the least relevance to senior management. What you need to do is focus on the value of new business, the value added on the in force, and explain to management what external and internal forces are acting to either create or destroy value. You need to think of how is real value created. Things happen in the real world. Competitors change the way that they're competing. The economic environment changes. New regulations are introduced that lead to extra expenses within the company. Consumers change the way they behave. And in company management, you implement various plans that are going to change the way the company behaves. So the external and internal actions and environments change the operations. For example, if competitors are increasing their commission rates, that can impact your agent retention. Or if consumers prefer investment products, you start seeing a shift away from life sales to mutual funds and annuities. This leads to new volumes and expenses, etc., which leads to economic value being created or destroyed.

Then your analysis goes back the other way. You do your analysis at the end of the year, which tells you how much economic value is being created or destroyed. You then identify where that's being created—in new business, expenses, mortality, or surrenders. Typically, the various analyses that I've seen

tend to stop there. They analyze value being created in terms of either expenses, mortality, or surrenders. And that's as far as they go. I think you need to go back further to identify the operational drivers that have changed. Keep on breaking down the sources of profit or loss until you get to a level management can react to. You need to get to a level where you can make somebody within the organization accountable for the underperformance or the overperformance. You then need to identify the external influences that are impacting the company, which then allows management to react to those drivers.

An example of the difference can be seen when you present value being created. Your variance analysis may say you've lost money because of your in-force product structure. You've reduced your spread on your in-force business. Expenses are higher, so you've lost value on higher expenses. But surrenders have improved, so you've made money because of the improved surrenders. That would be the way that a typical variance analysis would be presented.

The opposite way is to say, "Our competitors have all been coming out with much more competitive credited rates. We have no choice but to reduce our spread to stay in the market. We're trying to differentiate ourselves by having extra service and introducing technology to differentiate our service to our customers, which has clearly led to higher expenses. But then that's been offset by improved lapses, so our analysis of the market and our actions were validated." Instead of looking at each discrete piece, we've brought them all together and given management a much better feel for what's actually happening. And that's where I'm going to end.

**Mr. Armand M. de Palo:** I'm really the practical person, because I'm the one who is actually in the process of implementing an EVA system in The Guardian. I want to start out by saying Guardian is a mutual company. This is not a method just for stock companies. In fact, being a mutual company, there may actually be more of a reason to do EVA than for a stock company because I don't have a stock price outside the company to validate whether the company is increasing or whether somebody perceives the company increasing in value. The Guardian has looked into this method and we're doing it for two reasons. One reason is that, in today's world, we want to link part of senior management's compensation to the increasing value of the company, so we needed a viable way to measure it. We looked at the accounting systems that exist and found that they don't do a very good job. The other answer is to get closure on the pricing of products so that managers get information from the actuaries that lets them know what assumptions are being realized and if there is total integrity to the pricing. You're going to find out that the gain and loss analysis is probably one of the most valuable tools in this whole thing. It's

overlooked by most people because they don't appreciate that the analysis tells you whether you are achieving your pricing assumptions or not. And it also gives you information as to when you should be changing your pricing assumptions.

First, we had to sell management on the idea. It's not cheap to implement EVA. It's another accounting system. So the first process we went through was having to address the following question: "If you already have statutory, tax, and GAAP, why do you want another accounting system?" We spent a lot of time on that subject and we concluded that none of the existing systems gave us information about whether we were increasing the real value of the company.

Here are a couple of quick examples. Statutory reporting uses conservative assumptions. It really doesn't give you any information on the economic value of the company. The simple way to view it is that you write new business; new business looks like a large loss to the company. Maybe, for some companies, new business is a loss. But if the business is profitable, it's adding to the economic value of the company. And the reason you know that is that you could turn around and sell a block of business to the reinsurers and make a little bit of money off of it.

Tax, which is another accounting system that runs parallel to statutory, still works on relatively conservative assumptions, even though some aspects of it are less conservative than statutory. It has a deferred acquisition cost (DAC), which has nothing to do with the real value of the product. It's just in there to generate tax revenue to the government. Once again, new business looks like a loss on this system. And it still doesn't tell you anything about the real economic value of the company.

Some people are misinformed about GAAP; they think it is telling you something about the value of the company. While it uses more realistic assumptions, GAAP is trying to get at a different answer than the economic value of a company. It's trying to determine consistency between companies and is driven by accounting methods that are set by nonactuaries independent of the pricing of a product. It makes no attempt to be consistent with pricing. The one advantage you have with economic value is that you can set the assumptions so that they are consistent with how you're pricing your products and with the assumptions that go into those products. That's a very informative feature because GAAP doesn't do that for you.

When we were looking at tying compensation into it, one of the things that came up was, if we use GAAP, how will we use it? And the conclusion we had from

consulting was that if you used GAAP, you'd have to go to the real marketplace and find out what multiple of GAAP you'd assign to economic value. If you've ever looked at stock values, they are normally some percentage of GAAP equity: 120% or 150%. But it really became obvious that, if you were grossing up GAAP equity like that, you were trying to get to a realistic value because GAAP wasn't doing it.

Value added does this for you. With this method, we can set the hurdle rates that are consistent with the cost of capital. I will admit that, in a mutual company, cost of capital is a different animal than in a stock company. A lot of your capital is internally generated. And you're probably going to have a lower rate than if you had to go outside for capital. However, if you have to go outside for capital, you cannot on those blocks of business continue to say you have internally generated capital. So you have to make sure you're consistent on that.

Also, in a mutual company, there's a lot more thought given to after-tax earnings and accumulation of surplus. Economic value is a consistent method which has statutory, after-tax, and accumulation of surplus. It's just discounting it. So in many respects, it's a very natural method for a mutual company to assume.

We've been working on this for over 12 months. We've had little models running, but we're planning to have a full implementation of the system by December 31, 1998.

Many people view it as a tool of the actuaries. That's going to be your largest problem. When you're first out of the box, the question is, "Why does the actuary want this?" The accountants are not going to give you a lot of support because it's not under their control. And the accountants will try telling management, "We have GAAP already. Why do you want to spend an extra amount of money to do all this? We don't support it because the FASB tells you that these are the standards, so why do you want to go in this other direction?"

You have to be communicative with management. If you don't show the merits of the method, you're not going to get the funding. And the funding is fairly substantial on this. You have to have an actuary working on each product line for about 60 days a year once you establish the method. And they really can't find the time to work on it until they close out the annual statements.

We're going to do it once a year after the close of the financial statutory and tax statement. We're going to produce the economic value pretty much in the March time frame. But the gain and loss analysis is a longer-term process. There's a summer deliverable on it. You've got to tell management all this up

front. If you say, "Oh, it's another tool. It's not going to cost you very much," and the bills start coming in, they're going to close you down.

It's also important to recognize that you have to reconcile with statutory. That's a very important feature of this, that there's reality tied into this model. You can start out with an assumption, but once a year you're going back to a real in force. You're going back to a real amount of cash value. And you're showing the gains and losses that are going on. It's important to realize that if you only are looking at the yearly swing, you don't want this method. This method swings much more on a year-to-year basis than any other method you'll look into.

You're really trying to communicate to managers the long-term trend of the growth and economic value. If you say, "One year the value went up \$100 million, and the next year it went down \$80 million," they might not see the fact that what you really have is a change of \$20 million a year. On a trend basis, that gyration could cause them problems that they don't understand. The reason that the values gyrate is experience doesn't come in smoothly each year. Some years your lapses are going to be better than others. Some years your mortality is going to be better than others. And all those are going to run through your model as yearly gains and losses. You have to look at the yearly gains and losses and decide when a variation becomes a trend. When a variation becomes a trend, you have to change an assumption. That causes an even bigger swing because, once you change an assumption, the whole present value of that stream is affected by that change in assumption. You have to explain this to management up front.

What does it cost to do a system? Guardian has lots of tools already in place. We own most of the software that's in the marketplace to value products because we're in the assumption reinsurance business. So we basically own any system that most other companies are using. We can run PTS, TAS, and PriceWaterhouseCoopers' software. I'm not sure a lot of other companies have as many packages. This is unique to The Guardian because of our reinsurance operation.

If you don't have existing software packages and have to build from scratch, it's going to be more costly. The up-front cost on this was several hundred thousand dollars. And it probably costs a couple of hundred thousand dollars a year to do the work each year. It's not free. If you're going to use it like we plan to use it for compensation, you probably want your external auditors to review the method each year for consistency. It's not GAAP and they won't give you an opinion that this is consistent with GAAP. But you do want them to do the analysis showing what you did one year is the same as you did another year, and

that any changes you made in either method or assumptions were adequately reported to management.

You then get into the gain or loss. I'm going to go back to the gain and loss because some things need to be broken out separately. If you use the model to create a compensation system, like we are, you can change your model. One year, you may have a small model. Guardian's experience with modeling is that you start out with a small model, a couple of thousand policies, and the models tend to grow on you. As they grow, they get more exact, so you haven't really changed the economic value of the company because you've come out with a better model. Whenever you change your model, though, you have to run it on the old system and the new system, and calculate the Delta. And since we're keeping track of units, you have to increase or decrease the units any time you change the model so that the value per unit doesn't change.

This was a very important decision for The Guardian, because if you're going to tie compensation to economic value and someone changes the model so value goes up or down, you'd have a problem. In essence, compensation would change even though value, in reality, hadn't changed.

You also have to make a decision on whether a change in future assumptions is something that you want to break out separately. We decided that it would drive the value of the company, so we want to communicate that in a separate item from gain and loss. If you change your mortality assumption, the whole present value comes through, or the change in lapse assumption all comes through. But you have to make that very clear to management. And that's when you want to link it to the yearly gain and loss. If you're seeing a trend, you have to have an ongoing discussion about when the trend requires a change in method.

When calculating the gains and losses, we decided that we did not want to bring new sales into our EVA method. This is probably not a decision that a stock company would make. Our EVA method is an in-force method, and new business comes in as a separate item. We will report a gain and loss in value each year that is a result of new sales. If you included sales in your EVA model directly, you would have a future sales assumption that went out into the hereafter that said "This company is going to sell this amount of business in each future year" and you would value it. And if you sold more or less business than your model said you would in the future, your economic value would be increased or decreased because of a variance from your expected sales assumption.

If you were going to sell a company, you would probably put the sales assumption in. We rejected this because, once again, we were going to tie it into a compensation system. It was too tempting for someone to say, "The EVA is not high enough. We're good salespeople. Let's crank up that sales assumption a little bit more so the EVA will go up." We felt that it was much more reasonable to let the management see the gains and losses on new sales.

We also think that was an important feature. If salespeople write new business, they are going to see the present value of profits on that new business because that's not in the EVA. So you have to value the gain and loss in the calendar year itself. It will tell them they wrote a piece of business that's going to produce a profit for them. This was important to The Guardian because we have multiple lines of business that are quite different from those of many other mutual companies. We are in the reinsurance business. It's not widely known that The Guardian is in the reinsurance business because we don't sell facultative and we don't sell automatic. It's basically block reinsurance that we do for other companies. But we have about 60 reinsurance treaties out there, and the question always comes up: "Are you making any money on these treaties?" The EVA system is an ideal method for us to keep track of each of the reinsurance blocks to see if it repays the investment we made.

The reason I bring that up is that we have different hurdle rates for different products because we're risk adjusting the business. We're starting with the same basic earned interest-rate. Guardian right now has an internally generated capital source, so we're not looking at outside indexes for capital. We're using an internally generated cost of capital. But participating business is basically where we start. Guardian will do some reinsurance for window dressing of our own surplus levels. These are very, very low risk corporate decisions to manage the amount of surplus that we have. We use a slightly lower earnings-on-surplus type of ROI to ensure that these agreements repay the surplus they entered into.

In the par business, we assume there's a small amount of risk, but the dividend itself lowers the risk aspect. And the non-par lines we have are mostly variable life and variable annuity lines, so we use a higher rate. We've agreed on what the spreads should be. So if we change one rate, the spreads stay constant and we just scale them all up. But we do have three different hurdle rates we're using in the model based on the risk profiles of the business.

We also needed to look at the question of including target surplus or not. The first guess on that was to just go with some multiple of RBC as the target surplus. But we had multiple lines, and there's a square root function in the RBC formulas. How did you set it so that it's stable by line? So we decided to do

something else. In free surplus, you want to keep track of the statutory minimum amount of RBC and, depending on your convention, that's either the 125% or the 250% level that you don't want to fall below. We're assigning surplus by line of business on a fixed formula method that's less than 250% of the RBC. We think that's the more realistic surplus for our company. And the excess not assigned to the profit centers is subtracted from the free surplus of the company.

When you look at all EVA, you have the economic value of each existing block. You also have retained surplus. One of the questions that comes up is how much retained surplus is really available for new investments. And you really don't have the amount that has to be held for economic purposes and for RBC purposes available to invest in another line unless you go to outside financing.

We also are a dividend-paying company, where capital gains enter into the calculation of dividends. If there are capital gains, you would see an increase in value of the company on both a statutory basis and a GAAP basis, especially in common stock. But if it's your practice to pay your capital gains out to policyholders, whatever percentage of the assets belong to the par lines of business, those capital gains will be paid out in the future. Therefore, they don't increase the value using an EVA method. In effect, a large share of the capital gains that we have don't increase the economic value, but increase the future dividend that will be paid, and that's recognized in the EVA model.

On variable products, you have to make a decision about what the underlying funds are going to earn. We decided that the answer can't be derived from what we've seen in the last year or two. We have to look at what we believe will be the 20-year return on those types of assets and report the yearly variation when the stock market either goes up or down by a large amount.

Even though the method is not fully implemented, each line has run a small model. And all the actuaries are now building a bigger model. The question is, "What size model should they implement?" I believe it will take three years before we are completely finished with the implementation. While we'll be operational, we'll still be tweaking the model for probably the next three years.

Some of the early information that came out of it would probably have occurred to people if they had thought about it, but the model made it clear. We have two products in the equity line, a variable annuity and a mutual fund. If you talk to the marketing people, a dollar of sales in variable annuities looks very much to them like a dollar sale of a mutual fund. But when you do the EVA on it, you get a very different answer. The mutual fund has much lower profit margins and the funds are less sticky and have much higher turnover. The funds in a variable

annuity have a mortality and expense charge and some underlying fund charges. So the effect of after-expense profit on the variable annuity is substantially higher and the lapse rate on the variable annuity is substantially lower.

We found from real experience that a dollar of variable annuity has four times the value of a dollar of mutual funds. This tells that, in order to get the same critical mass in a variable annuity line of business, you only need one-fourth the assets you would need in a mutual fund business. So if you start with the assumption that you can't be viable in mutual funds with less than \$10 billion of assets, you may be viable as a company with \$3 billion worth of variable annuities. This wouldn't be immediately obvious to people because the salespeople will say they brought in the same amount of money. This was an important issue.

There's other early information that we're getting. The board has gotten the message. Managers are very interested in the gain and loss analysis because it reveals whether you really achieved your assumptions. Did managers spend the budgeted amount of expenses they said or go over? I have a hunch this model is going to give us a real good handle on pricing for expenses. And, even though we have asset shares and the actuaries know we're covering all expenses, there's no good tool to communicate it to management. This really will be a solid tool to do it.

Even though from an actuarial point of view, this is the tool I've always needed for gain and loss analysis and information, if it was not tied into the need to do something on compensation, I probably couldn't have gotten enough support from the rest of management and the actuaries in each of the different profit centers to get this model in.

**Mr. Isadore Jermyn:** I have a number of questions for the panel as a whole, but I'm particularly interested in Armand's response to them. First, Armand, you mentioned that sales were excluded. It wasn't totally clear to me. I assume you mean future year's sales. I assume the current year's sales are included.

**Mr. de Palo:** That's correct. There are two ways to do EVA. The quantity we're using is EVA at each point in time. So if you're in year T and move to year T + 1, obviously you have one more year's worth of sales. So the EVA at the next year has the sales. What's coming out of the model is more useful than if you included sales. If you included future sales in your model in EVA, you'd be reporting the gain and loss because of the variance in new sales. But what we're reporting on is the gain and loss: Did the new sales add to or subtract from the

value of the company? And, for our structure, that's an important piece of information.

**Mr. Jermyn:** My next question is in regard to the policyholder dividends. Decisions can be, and sometimes are, made about changing policyholder dividends independent of obvious changes in experience. How would that be factored into the determination of the value, particularly as it affects incentive compensation?

**Mr. de Palo:** If you lowered the profit margins, it would lower the EVA of the product, and the EV of the company would come down. One actuary in my company grumbled for quite some time that if you tie an EVA system to compensation, you could drive the company to do the wrong thing for the policyholder. That has to do with the integrity of the company. If you weren't doing the right thing in the first place, this system will not make you do the right thing or the wrong thing. But it's clear that if we made the decision to lower profit margins, the EVA would come down in our system.

**Mr. Jermyn:** I have two more questions. Who exactly determines when there is a change in assumption? Is it you, the chief actuary? Is it someone else? Clearly, that's going to have tremendous implications in terms of incentive compensation.

**Mr. de Palo:** A lot of this has to do with how you tie EVA into compensation. The way we're setting up the incentive compensation desensitizes that to some extent because it's based on the long-term trend. We've created these units that pay out over a long period of time, so that a one-year change up or down doesn't affect it. We didn't want to create a system that paid out at a single point in time. That way, a CEO nearing retirement could drive the assumptions to increase his value to get a payout just before he retires. The way this system is being set up for compensation, it's actually spread over ten years. So if you tried to force up the assumption to increase EVA, but it proved not to be true, it removes a lot of the incentive.

The actuary is looking at yearly changes in gains or losses, recommending the change in assumptions, and explaining to management why it's good. It's going to be a very visible event when this happens, so the actuary better have his or her facts when making that change.

**Mr. Jermyn:** What I'm hearing is that, at least for The Guardian, this is for long-term incentive compensation as opposed to current-year incentive compensation.

**Mr. de Palo:** That is correct.

**Mr. Brown:** In terms of assumptions, when you first set up an embedded value, you have to go to set all these assumptions and then do it the next year and the next year. What evolves over a period of time is the actuary defines a methodology to set assumptions. And once you define a methodology, then different actuaries are more likely to come up with the same set of assumptions. Then the changes in assumptions reflect real changes in the real underlying world, as opposed to actuaries interpreting the same data differently.

**Mr. Jermyn:** My final question is practical. To what levels within the company do you think it makes sense to apply value added? Particularly if you look at the distribution channel, do companies apply it to distribution channel A versus B or to a career agent channel versus a general agency?

**Mr. de Palo:** In The Guardian, we do it by profit center. I want to add one other comment on it as practical experience. We have a new line of business. We entered a group 401(k) line of business. This will show where statutory, GAAP, and value added differ so much. On a statutory basis, because it's only a three-year-old line of business, the 401(k) is losing a substantial amount of money from new business strain and not yet at critical mass. On a GAAP basis, it's losing a lesser amount of money. On a value-added basis, all the new business is profitable and we've covered initial expenses much earlier than either a statutory or GAAP basis would show.

If you're starting new lines of business, I think EVA methods give management much more assurance that they're on target with the viability of that line. If you're not on target, it's also going to tell you that bad things are happening and that maybe you're never going to get to critical mass. But it gives you useful information.

**From the Floor:** This is a very interesting presentation. Armand, I had one question on the modeling part of this. A lot of companies, and certainly our company, have built all sorts of models for ALM work. Is that the basic platform that you work from? Or are these completely separate models that we have to develop?

**Mr. de Palo:** We're using the tools we used for ALM. But, for EVA, we're making different decisions. Our reinsurance profit center uses the TAS. They're using the same model as for cash-flow testing. The life model is actually using the same tools, but it is valuing a smaller subset of policies. Our cash-flow testing uses a very large model. At this point in time, we haven't built this model

the same size. I think, as time goes on, these models will become as robust as the cash flow models. I think, if you ever read Jim Reiskytl's *Financial Dynamic Surplus Management*, you can be glad you have this model. It will let you produce the future statutory view that Jim has been talking about for the last 10 years.

**Mr. Mark A. Milton:** We implemented value added about three years ago on a formal basis. The primary objective is for management compensation. I have one question related to the change in assumption. One assumption that seems to be annoying is the interest yield that you actually earn. Our current process is to leave the discount rate set at what we see as cost of capital, and we have not changed that through the years. We set our interest-rate on January 1 of each year based on the current yield curve in effect at that time and then grade over a three-year period to a long-term historic set of yields. And each year a variance has to be done. I used the word "annoying" a while ago. It's just something that has to be done. I'm just wondering if anyone else is using another approach. Is there a way out of it? Thinking about where yields may be on January 1 this year, it could have a very significant effect.

**Mr. Brown:** The most important thing is to make sure that your discount rate and your interest yields are consistent. You can view your discount rate as being a risk-free rate plus an element of risk in the business. And your yields are risk-free rates plus an element for risk in the bond market. As long as those two move consistently, you tend to get offsetting changes, so the impact on your embedded value is not material—or at least not as big as it would be if you moved the two independently.

**Mr. Erhardt:** In our model, where we have products that have an agreed-upon spread, we build the model around the agreed-upon spread and report the variance from spread each year. But the discount rate we do plan to change periodically. We may not change it each year, but if we get into a low interest-rate environment, as some people fear, we will probably take this rate down. That will actually have the effect of increasing EVA for many products. The scarier scenario is interest-rates spiking up and having to have a higher discount rate. And when you have a higher discount rate, your expenses basically don't change, but the present value of future earnings will become a lot smaller item unless you increase spread. In high interest-rate environments, you may find that product lines that were profitable in low interest-environments just are not profitable in turbulent times.

**Mr. Milton:** I had a couple of other general comments and/or questions. I did appreciate the panel's discussion. I think a lot of the issues were things that we

had run into and are still struggling with a little bit. One question is, how many companies do you see taking this type of approach? How many are taking the EVA approach that we, as actuaries, use versus the EVA approach from Stern Stewart? And how do you think they're really interpreting the results? Armand, you mentioned that you looked at trends in embedded values as opposed to an embedded value of minus the cost of capital, which would be showing negative numbers. I suspect most companies would have negative numbers if they looked at that. That may be difficult to get across.

You talked about value added being perceived as the actuaries' "black box." The actuaries liked that, but no one else did. But going through the actual verification of results with statutory accounting, our accountants are starting to buy into it at this point. And we've had some interesting results. When you have subsidiaries that have been beaten down based on statutory or GAAP earnings, but appear to be providing a better value-added return, that's opened some eyes. One thing that was indicated, also, was that, if you hire a large agency, and because of your compensation structure, that particular agency's business doesn't earn your hurdle rate. I'm not sure that I'd have the courage to tell management that 20% of our production is coming from an unprofitable source. Maybe that's what consultants are for.

**Mr. de Palo:** We haven't, yet, taken it agency by agency. We use the overall average agency cost that the company incurred in a year. But we're still wrestling with the question of how to value noninsurance subsidiaries. We haven't come to a final answer on that.

**Mr. Brown:** I think there are only a few companies using the Stern Stewart approach, although some are thinking about doing it because it's relatively straightforward and painless. If you view GAAP as being the primary measure, then why not do the Stern Stewart? It's giving you additional information. In terms of the actuarial approach, I think the majority of companies that are doing it in the U.S, or a large proportion, are those that have overseas parents and have had it forced upon them. But there is a trend. More companies are doing it for business reasons as opposed to having it forced upon them. The number of companies making the decision to do it on their own is not significant at the moment in the U.S.

In terms of understanding embedded value, it's the trend analysis that's important. The change in numbers from period to period doesn't tell you a great deal. It's understanding what's driving the change in value that is useful information to management.

**Mr. Erhardt:** From all the companies that we're speaking to, it's not in widespread use at this time. The majority of companies make their decisions on GAAP or are moving toward GAAP away from statutory. And one of the biggest advantages I've seen is that there are obviously companies maintaining high dividends, exceeding what they can pay out because they're not earning their dividend rate. If managers were basing their considerations on an economic basis, they might come to a different conclusion on what they're doing with that business. So it comes back to having good economic data coming to senior managers so they can make the right conclusion about their business. And that information isn't coming to management on a widespread basis.

**From the Floor:** I'd like to follow up on Armand's comments regarding changing discount rates in response to changes in the interest-rates. For companies that sell a lot of, let's say, fixed annuities or universal life, how would you address the shortcoming of EVA in terms of capturing the impact of disintermediation on projected excess lapses, as well as the impact of spread deficiency of risk, in terms of the assumed long-term profit spread margins? Perhaps some companies may have already thought of incorporating, for example, David Becker's option adjusted value of distributable earnings by running it on a bunch of stochastic scenarios.

The second question I have is probably food for thought. There has been a lot of discussion regarding marking both assets and liabilities to market. With respect to fair value reporting, I get the sense from the people involved in that project—particularly the FASB—that they seem to be moving toward the direct method, which is marking assets and liabilities to market separately. Obviously, that's more like a cash-flow measure of value, as opposed to distributable earnings, which is an indirect method. And I think there are different methodologies. Some like the direct method. Some companies would exclude or ignore taxes in terms of the evaluation of liability cash flows. I seem to have a bias for indirect, which is distributable earnings. How would you evaluate the impact? When fair value reporting occurs, I think it's going to change the way companies look at hedging, risk management, and compensation.

**Mr. de Palo:** This is not a valuation system. It is a static system to say the least. It doesn't work on scenarios. It works on statutory accounting. The reason you don't have to worry about market value to book value is that the assets all run off the book in the model. It's a long-term project, so short-term changes don't have much effect. I agree with you that, in a particular year, if there's a run on the bank or an experience change, it can create very big changes in the value of the company. But it's not trying to tie into stochastic modeling. And your point is well taken. Many universal life products on a static model could look profitable,

but on a scenario could look unprofitable. I think what's really happening here is the actuary has to choose his assumptions well. And if he's changing his interest assumption and thinks it will create changes in lapses, he probably should be changing more than his interest assumption in time.

**Mr. Brown:** What you're trying to measure is economic value. And if there are risks built into a certain product, that means that you can only capture economic value by running the model stochastically using whatever approach is needed. If a certain product has small risks that you can only capture by stochastic modeling, then it's probably not worth the effort. But if it's a product where the risk is significant and can only be captured by doing stochastic models, and that product line is significant in terms of the overall company, then you may need to think about modeling it stochastically, introducing excess lapse formulas, and whatever else is needed.

**Mr. Hubert B. Mueller:** I'd like to add a little bit of a European perspective on the topic of value added. In Europe, most large companies, and especially all the multinationals, are using value added very extensively. We have even used it in Germany and Italy with noninsurance businesses such as determining the economic value added of bank business and mutual fund business. And it has been very well-received also by the investment banking community in terms of determining the true economic value of a company when the transaction takes place, whether it's for internal or external purposes. So I would like to add that point, especially in response to Mark's question about whether it's used in noninsurance businesses. At least in Europe, we are doing that.