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### EXPENSE MANAGEMENT

Instructor: MICHAEL J. ROSCOE  
Co-instructor: GREGORY M. MATEJA

MR. MICHAEL J. ROSCOE: Greg Mateja is a consulting actuary with CHALKE Incorporated. He's been integral in the design of its PTS software. Currently, he's involved in corporate modeling and strategic decision-making. I work as an actuary for ITT in Hartford. I'm responsible for product developing, pricing of individual life insurance products, as well as strategic planning for the individual life insurance operation. This session will have two presentations. First, Greg will discuss the concepts of expense allocation and a product costing methodology. I will then follow with a simplified approach that utilizes these concepts within a traditional pricing system.

MR. GREGORY M. MATEJA: I am going to focus on the analysis facet of expense management. I want to address some of the expense-management questions that typically come up in conjunction with macropricing. I will show that analysis of variable and overhead expenses fit into the macropricing framework.

I'm going to start out talking about expense characteristics and the types of expense analysis that can be done in a company environment. This will lead us into the determination of product costs, which will be the focus of my talk. I'll define the general procedures that you go through to allocate and determine product cost. Last, we're going to touch upon the use of the product cost-study results.

Some of the insurance company expenses that I've observed over the years include overhead expense. These expenses do not directly vary with the number of products that are sold, the number of policies in force, or the average size of those products. It's not a function of the amount of premium or the number of policies that you've got. Overhead has a tendency to move in a stepwise fashion. It increases and decreases in noticeable increments.

There are three types of expense-analysis systems that you can observe: accounting systems, cost-center control systems, and product-costing systems. Each of these have their own characteristics and purposes. We frequently observe companies using an accounting system to determine their product cost, and that may not be the most appropriate thing to do.

An accounting system is characterized by aggregation of all expenses. It looks at expenses for the entire company, a line of business, or, in some cases, a profit center. All expenses are included and, if necessary, allocated among more than one business unit. It's based on an accounting cycle and is performed at the convenience of the accounting division, usually on a monthly, quarterly, or annual basis. As such, it's very objective. It just measures the fact that the company spent  $X$  dollars.

Cost-center or operational control expense-management systems are important to a department manager. Within an insurance company, a good example of this kind of system is the product-issue function. The manager of this group is very interested in controlling the cost per policy issued. When you're developing a cost-center control

system, you should focus only on controllable expenses. There's going to be little or no allocation. This is key, because at this level, the manager is interested in the costs under their control and how they impact the bottom line of that cost center. So they need to focus only on those expenses that they can influence. Anything that's allocated doesn't matter at this level; it's irrelevant to the manager's decision-making. This type of analysis is going to be done on a relatively frequent cycle. It might be weekly for an insurance company; for a manufacturing-type environment, it might be daily or hourly. The focus is on the short term and how expenses vary from week to week and from month to month. It's going to include both fixed and variable expenses, and it's going to be very objective, because there is little or no allocation.

When we get into the product-cost system, we're going to be talking about something that's very different. There's going to be substantial allocation, because you do want to capture expenses from across the organization. There's going to be a relatively infrequent cycle. It's unlikely to occur more frequently than annually. It might even be every 18 or 24 months. When you undertake this kind of analysis, virtually all expenses are viewed as being variable. Because of the allocation and relative infrequency, there's going to be a lot of subjectivity involved in a product-cost study. So the results are going to be much less objective than those for the other types of systems mentioned.

I'm going to review the purposes of each of the three types of systems before moving on. An accounting expense system is part of your accounting cycle and is required for your financial statements. Cost-center expense systems are at an operational control level and are used by a department to maximize efficiency. Product-costing expense analysis is part of your product cycle and impacts strategic decision making and product development.

An often asked question is, "Why is product costing important?" The answer is that distortions in product costing will usually lead to ill-informed or ill-advised pricing and strategic decisions. What you will likely find is that a product-cost study shows that seemingly unprofitable products are in fact very profitable, and that seemingly profitable products are among the least profitable. Most distortions occur due to the substitution of complex, relatively low-volume products by simpler higher-volume products.

One of the byproducts of the distortions that I talked about is that this often results in a tendency to increase the number of products that the company offers or to increase the complexity of the products that are offered. This leads to rapid growth in overhead and subsequently reduced profitability. One example that I thought of along these lines is the mutual company introduction of integrated dividend-type riders during the mid-1980s. Many companies introduced products that were very complex. Many of the companies I'm familiar with saw a large increase in overhead that wasn't always offset by an increase in volume.

If you were to look at some typical products that an insurance company might have, you might begin with a portfolio with a whole-life product, a term-insurance product, an annuity, and a universal life product. Each of these has its own degree of complexity and requires different levels of overhead support. Thus, it's appropriate to

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examine the amount of overhead that each requires and reflect these differences in your decision-making process.

When you're done with your product-based expense analysis, you use it for strategic decision-making. It provides superior information for the development and pricing of new products. You can and should design your study so that additional analysis is possible. For example, you may analyze expenses by distribution channel, market, product, and product line. This is information that isn't always available to most companies today or is distorted by the accounting allocations that occur. Ultimately, the goal of any type of expense analysis is to increase your profitability. The distortions that occur with traditional expense analysis make this objective difficult at best.

In a traditional product-costing environment, you focus on allocation of expenses to policies, to units, and to premium. That's the way most companies that I'm familiar with do their allocation of expenses. A few use some of the techniques that I'm going to be talking about. In real life, there are relatively few expenses that vary directly with units or premiums, as would be implied in a "traditional" study. I've noted a few here: underwriting, policy issue, and administration. These are directly related to the amount of business that you have or that you sell. Thus, one of the major problems with results from traditional product-cost studies is the difficulty of interpreting results. It's hard for people to understand what 2% of premium for or 37 cents per unit means when they are trying to make decisions.

I'm going to be talking about a methodology-termed, activity-based product costing. This is an approach that a gentleman at Harvard by the name of Robert Kaplan has written extensively about in the *Harvard Business Review*. His work is primarily with the manufacturing sector, but he does mention the service sector a little. We have studied his work and believe that it does have wide applicability across many industries. The key with this approach is to focus on the activities that use resources and the events that drive them. The goal is to get something that's easier to interpret and act upon. A degree of allocation still exists, and one of the objectives is to make the allocations more meaningful. The example I have is legal expenses related to product development. They differ greatly if you're developing a simple term-insurance product, a whole-life product, or a complex variable universal life product. You should take this degree of complexity into account when determining your expense assumptions. For example, I have \$20,000 of legal expenses for the simple product and \$70,000 for a more complex one. The numbers in this example may not be realistic, but the point is that simpler products cost less to manage and develop.

When you go through your expense study and you're in the process of allocating costs, you want to use the long-run variable costs. You want to start with your larger expense items or expense centers and work toward the smaller ones. For example, if you've got a corporate department that spends \$1 million a year, you want to figure out what drives this expense. You want to concentrate on resources that vary by product or product line. A good example of that might be an in-force proposal system. Most companies have one, but it's seldom used with term products. For your plain vanilla products, it may be used infrequently, but on your popular business or more complex products, it may be used on a very regular basis.

As you go through this process, you want to determine the drivers for each expense. What is it that each cost center does? What functions or activities done by others drives their activity? For product development, you can look at the number of repricing, the number of new products, and the amount of field support done. You can allocate the cost of your product-development department based on these factors. Your corporate department is doing review and analysis, and it is often responding to external events. It's always hard to predict exactly what's going to happen externally, but to the extent to which you can determine the cost of that, it's probably something you want to know about. Your legal expense is often driven by new products, claims, and compliance.

In your pricing or development process, your president may spend a couple hours reviewing a simple product or several weeks reviewing and analyzing a substantially new or revised product. You should take that relationship into account directly in your pricing process, by allocating more expense to the more complex product. When you determine allocations, you want to do so based on these drivers, rather than on a per-unit or per-policy basis. For example, much of your overhead expense may be driven by activity related to new products as opposed to the premium that you receive. Another driver might be product repricing that may come about due to valuation actuary requirements and the expanded modeling that most companies are now doing. There is overhead here that does vary by product category. You have to make subjective determinations of complexities and relative costs between products. I cannot stand here and say that X% goes to this and Y% goes to that. You have to look at it and use your judgment.

If you look at the different products that you might have in your portfolio – term, whole life, universal life, variable whole life, interest-sensitive whole life, and annuities – the costs and the allocations are going to be different for each one. You want to remember that products that are complex and more difficult to administer and develop tend to use greater amounts of overhead expenses.

Two kinds of expenses should be ignored when you're doing a study like this. The first is the cost of operation at other than an optimal capacity. For example, assume two companies have the same administrative system. If one is operating at full capacity and the other at 50% capacity, the cost per policy in force might appear to be twice as high for the one company. If they're using the same system and they have similar people, it doesn't make sense for one to have that kind of a cost advantage over the other. So, you need to really focus on what your true, long-run cost is for each function.

The second type of cost to ignore is the cost of long-term fundamental research and development. That would be something like an entirely new or innovative product. The examples that come to mind would be the first companies that developed universal life or variable universal life.

When you're done with your product cost study, you want to smell test the results. You want to look at them and ask, do they make sense? Do the more complex products actually have more expenses allocated to them? Does the relationship to the existing expenses make sense? Do your agents and marketing personnel accept the relative complexity indicated by your results?

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Another way to test your results is to compare your internal cost to the cost of external providers. For some functions, it's easy. For others, it's virtually impossible. You can get quotes on legal services and compare these to the internal cost. You can go through your data processing department the same way. If it costs you \$50 an hour to get support from someone to help you work with Lotus or WordPerfect, you may be able to do better externally.

Usually, you can't get information about your competitor's expenses, but you can sometimes get it indirectly by looking at their product costing or the decisions that other companies have made regarding entry or exit from a market.

An expense study or product-cost study is just another management tool. Tools in and of themselves don't have much value unless they're used. A product-cost study provides an opportunity for management to increase profitability. These potential gains won't be realized unless the results are acted upon. It's important to realize that you've got a tool here that can provide you with a lot of information. It can help you to increase the profitability of your company, but you will not realize the potential gains unless you act on the results.

Normally one of the first things you do is examine your pricing strategies in light of your expense studies. Sometimes this means raising prices for products that require a lot of overhead and vice versa for products that don't require a lot of overhead. You may want to refine your product mix and your customer strategies. The result is more equitable treatment and less subsidization. If you operate in a boutique market, where you have relatively small volume and are a specialty provider, you can often raise prices and have very little impact upon volume.

The second type of action that you can take is to reduce resources required for the various activities. If your legal or actuarial expenses seem high relative to outside sources, or what you believe competitors pay for similar services, you can work on that. Management can work on making those things cost less over time, but you've got to realize that if you free up \$50,000 of legal expenses, that per se, is not going to increase your profitability, because this is an allocated overhead item. Unless you use those resources to somehow expand your revenue or you eliminate those resources, you're not going to see that \$50,000 flowing through to the bottom line.

When you go through this process, you want to focus on the long term. You want to think about where it is you want to be, what the long-term costs are now, and where you want to get them to. Last, it's very important that you don't rush to eliminate a large number of employees, products, or customers, because most of you have a fair amount invested in them. If this study says that a whole line is very expensive for you, before you rush to eliminate that line, you ought to see if there are some other things you can do.

When it comes to the time to make expense assumptions for pricing or managing in force, start with the direct unit and policy costs. You want to add the appropriate allocated costs, including directly attributable overhead. These should be based on the complexity of the product(s) and projected use of overhead. For modeling purposes, these are generally macroexpenses. It's phrased in terms of aggregate dollars and might be something like the cost of developing a new product is

\$250,000. This is made up of \$X for legal, \$Y for actuarial, and \$Z for changes to the administrative system. Mike will be talking about determining the required production volume or critical mass that's necessary under this type of a decision-making process.

I'd like to just close with some important points to remember. Allocate expenses based on the activities that drive them. To the extent possible, take this into account in your decision-making process. After completing a product cost study, act upon the results to optimize your prices or product mix and to reduce the resources required to perform tasks where appropriate. The savings identified will be illusory unless freed-up resources are either eliminated or employed in other endeavors. Remember that only long-term variable expenses are relevant to the decision-making process.

MR. ROSCOE: How many of you are either currently or formerly involved in product development and pricing? How many of you do a unit-based pricing approach in which you use an asset share or something like that where you're only looking at one policy? (A good proportion of those who had their hands up earlier.) How many of you then, with this unit base approach, have a target profit objective set by management or your parent, (e.g., internal rate of return or present-value book profits) that's a unit-based profit objective?

FROM THE FLOOR: Versus what?

MR. ROSCOE: Unit based; such as using an asset-share program, where you're looking at one policy (e.g., male, 45-year-old).

FROM THE FLOOR: What is the alternative?

MR. ROSCOE: An alternative would be saying we want to make \$500,000 of profit from this product line. It would be an aggregate level of profit or macropricing, a term well used by CHALKE Incorporated. I'm going to try to give an example that relates to unit-based pricing. How many of you who have been involved in pricing and product development believe that ultimately the price is set by the market?

This talk is going to generally relate to those of you who believe you've developed a product in which the price has been determined by the market or competition. When you have this type of scenario -- price determined by the market -- profitability is measured on a unit basis with a target objective, there's really no way of knowing whether you've made your target objective, unless you're able to reach the appropriate number of units. That's what we're going to talk about: critical mass, which is the appropriate number of units to meet your target profitability objective. It doesn't necessarily mean it's the right number of units to reach, but if you're telling management that you're going to get a 15% return on equity, this will help you measure how many units you have to have to get there.

If we look at traditional unit-based pricing, those of you who have done it will have a pricing assumption for your expenses. I like to refer to these as unit-based pricing allowables. Typically, these expense assumptions will be broken down into categories such as sales acquisition, underwriting, or maintenance. The expenses behind those assumptions, the actual underwriting expense or actual sales acquisition expense,

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tend to be described as variable or fixed. Some people use the terms direct and indirect, marginal and overhead. For purposes of this discussion, when I refer to variable, I'm referring to expenses that vary with the number of units, because we're doing a unit-based approach here. Greg had talked about considering almost all expenses variable. To the extent you're talking about a product line expenses allocated to that product line should be considered variable. Alternatively, we can consider the concept of allocated overhead. I'm referring to variable or marginal expenses on one hand that vary with the number of units, and the rest of the expenses are going to be considered allocated overhead.

If we look at our pricing allowables (i.e., the expense assumptions within the asset share), they can be described as a percentage of premium, dollars per policy, or dollars per thousand of face amount. It is possible to derive a simple little formula that says the allowable less our marginal unit expense is equal to the contribution to allocated overhead. Let's expand this a little bit further. If we believe that the price may be determined by the market, then on a unit basis we can develop this formula: establish revenue as the price being established by the market; use our actuarial formulas to determine the amount to subtract for benefits and change in reserves; subtract our marginal expenses per unit; determine the taxes; and finally subtract our profit objective on the per-unit basis. It is possible to do this and what's left over becomes our contribution to allocated overhead.

Going back to the description of how expenses vary, it's fairly clear that if you follow these concepts through, you'll come up with a contribution to allocated overhead that will vary by the same types of categories: sales acquisitions; underwriting and issue, and maintenance are a typical breakdown.

Greg had talked about allocated overhead by using the product-cost method to allocate expenses. You can allocate actual overhead expenses to the same categories used within the pricing analysis. That's what we're going to be talking about. I'm going to use an example of a sales acquisition expense. I'm going to use an example of sales acquisition expense that relates to my company (ITT Hartford). We have a sales distribution force that is staffed by employees (i.e., account executives) located throughout the country who provide assistance to independent agents. So at least two individuals are involved in every sale, and as a result, there's quite a bit of allocated overhead of that distribution system. I'm going to give you an example on how this modified unit-based method works with the category of sales acquisition expense. I'm going to introduce a concept that I call management premium. Without having defined it, let me tell you how it was developed.

By using the formulas I presented earlier, we are able to develop a pricing allowable for sales acquisition expenses. This is a real life example. Let's say that we price for 133% of premium to cover our sales acquisition expenses, and within those expenses, we identify specific marginal per-unit expenses, the most common being agent commissions. As we write in the state of New York, the amount we assume here is 45%. We add in the Hartford employees who are working on it, and in this case, they're making about 28% of premium on the sale. The Hartford office is staffed by a manager who is compensated on every sale at a lower level percentage just under 9%. We provide employee benefits that move up with their compensation. So that's been determined to be a marginal expense. Our convention expense might

be an allocated large-dollar amount of \$1 million, but we feel very comfortable considering it a marginal expense, because year in and year out it's almost always 4% of premium. There aren't any other sales acquisition expenses that we consider marginal, to the extent they vary with the number of units (in this case, premium). The bulk of the other expenses are home-office management, field-office rent, and clerical support. They have been categorized as allocated overhead. Following the math, we start with 133% of the premium as a contribution to overhead with these factors, [133-45-28-9-7-4 = 40]. Premium that comes from this type of sale has been given a management premium factor of 100% or one. In other words, \$1 of management premium contributes \$0.40 to sales acquisition overhead.

We'll find that this type of formula will differ by product and it will differ by distribution source. Obviously, we have more than one product out there, and I'm going to show an example using just a simple universal life product with a term product. Additionally, we have more than one type of agent. We have agents, we have brokers, and we have general agents. The latter two receive overrides on commissions. By using the same type of formulas, it's not necessary to pay attention to what the numbers are, but just to the fact that they exist. We have the same base 40% of premium for universal life from an agent with different factors for other products and producers. Notice that the universal product itself supports the same amount of expense, 133%. The actual marginal expenses differ and therefore, the contribution to overhead differs. Term is priced with a lower percentage of premium and has its own set of factors. The management premium factors are basically the relative measures of contribution to overhead by product and distribution source.

What we're going to do with these types of factors is determine the total amount of management premium necessary for the contribution to overhead to equal the amount of allocated overhead sales acquisition expense. If we're doing it on a maintenance basis, we might have management policies. The point being, use management units that are equal to actual units times the relative contribution to overhead for the case at hand. To carry that example one step further, this is an example of what we use at the Hartford for two different product lines and a series of different types of agents. Different types of products have different types of agents associated with them. You can be somewhat specific in your analysis by using the exact same sets of formulas.

All this leads up to that one point that I was trying to get to and that is, what's critical mass? Simply stated, it is the amount of business that you need to have to meet your profit objective. This takes into account the fact that some expenses are marginal (vary with the number of units), with the remainder of expenses considered allocated overhead that does not vary directly with the number of units. Critical mass is equal to the total allocated overhead expense divided by the contribution to overhead per management unit.

Let's follow this prior example through, in which we have two products and three types of agents. Let's say that we have an overhead expense for this distribution system of \$10 million. The amount of management premium necessary to cover allocated expenses is \$25 million as we get a contribution to overhead of 40% of that number. How much production do you need to do it? There are many different ways to get the amount of production necessary to achieve \$10 million of

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management premium. One example shows about \$28 million worth of actual premium. If you remember, the management premium factors had a maximum of one; some of the factors were less than one. Therefore, you need \$28 million to get the \$25 million of management premium. Another example, with a slightly different mix of business, shows that \$30 million worth of premium gets you to the same \$10 million worth of contribution to overhead.

Another way to present this type of information is to show the amount of premium by product and by agent. The first example shows that the bulk of production (slightly over \$5 million) is coming from the agent who writes universal life. The second example shows most of the production coming from a general agency basis.

How do we tie all this back into the pricing and tie this back into the concepts Greg talked about? If you assume that price is determined by the market, you don't really have to. You're just doing a level of analysis for management to let it know whether the company has reached its profit objective. On the other hand, if you believe that you're in a situation where you can establish the price, you may want to follow the same types of techniques, but relate the contribution to overhead to the overhead actually required to generate that piece of business.

MR. HENRY B. RAMSEY III: If you assume that the market sets the price of the product and you allow your products to have different commissions or payments to the distribution system as part of the product price, my inclination is to believe that as your system evolves, the distribution people are going to say, "I don't want to sell that product over there; I'll only get 60%. I'll sell this product and I'll get 80%, and the total that is available is going to be less for the company." You're going to be driven toward the product with the lowest management premium rate. Why would you want to design products where there's an incentive for the agent or the salesman to sell one product? If you get a lower income on it after paying for that system as opposed to trying to design it so that your management premiums are all equal and you don't care if the agent gets paid, you get paid.

MR. ROSCOE: The way that we handle differing commission levels is that agent commission relates inversely to the amount of support that the agent will receive from the field staff. You gave an example of 60% versus 80%. The field staff does provide a value added. They provide assistance with the sale. Basically, the agent who is making 80% as opposed to 60% is getting less service from our field and supposedly can do the business without that service. If we're not providing service, we like to say that the piece of business is not overhead-intensive and therefore, it doesn't need to cover as much overhead. In both cases, we've priced in our target profit objectives plus a contribution to overhead that relates directly with the amount of overhead required to support that sale. In other words, the agent cannot just move from 60% to 80% without sacrificing a certain amount of service, which in turn frees up overhead on our part. That overhead should be invested wisely in new business.

MS. CHERRI R. DIVIN: I assume that when you do this type of pricing you've worked out very carefully the production levels required in each category, and someone in your organization must have made a marketing commitment that these production levels would be reached. How do you validate those production levels

required to produce net contribution of surplus? Do you do that on a year-by-year basis?

MR. ROSCOE: When you say validate, do you mean after the fact, measure how much production you have, or do you mean ahead of time?

MS. DIVIN: As you price each product and then go on from year to year, do you go back and test that your assumptions were valid? That the production you expected in each category met the requirements?

MR. ROSCOE: Basically what we do in pricing (and this ties into the macropricing concept) is the approach I described earlier. We'll do it two- or threefold on a new product, and we'll say product A requires so much amount of business to support its overhead. Product B requires a little less business, and product C requires even less. Once the product has been established and the price has been established, we then measure the amount of production that comes in, and budgets are developed. Budgets are stated by using management premium, not in terms of paid premium. We believe that the marketing department, if they choose to focus on product A over product B (universal life versus term, for example), or if they choose to focus on heavily assisted sales of the regular agent type versus heavily unassisted of the general agent type, that's their call. As long as they have committed to producing a certain amount of management premium, given a certain amount of allocated overhead expense, basically we're measuring their actual expenses and their management premium results.

Is somebody's compensation dependent on how that turns out? The answer is yes. Management premium is related directly to the amount of allocated overhead expense and yes, compensation is tied to that.

MR. MATEJA: I was just going to add something about this type of product pricing. Many companies do not have a direct tie-in as the Hartford does. So someone is not on the hook compensationwise for producing X amount of product. What we normally do in that situation is look at historical pricing. If a new universal life product requires 30% more premium than has ever been sold in the past, that's an indication that the goal might be a little unrealistic. If, on the other hand, it's 90% of something that's previously been sold, that's a very good indication that it will easily be met.

FROM THE FLOOR: You must communicate these measurements to management very clearly. I'm wondering how you communicate this, and I'm sure you probably use different methods. If you price on a return-on-equity or a return-on-investment method, and you use this contribution to overhead and maybe a percentage of premium, the methods often produce very inconsistent answers, especially if one particular product requires a serious contribution to surplus. Do you communicate all these different standards to management, or do you just use one of these pricing methods?

MR. ROSCOE: Our particular target objective is a return on equity. We basically follow that approach that I described, where we put return on equity in as one more marginal expense, if you will, per unit. We end up with a product that supports the return on equity, all of its marginal expenses, plus a certain contribution to overhead

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expense. You can actually then calculate that contribution to overhead on a unit base, and in the example I gave it was 40% of premium. If we produce enough premium, \$25 million worth, where a 40% contribution to overhead exactly covers our \$10 million of allocated overhead expense, we get exactly our target return on equity, assuming that other assumptions are in line; the other assumptions being mortality, interest, taxes, and the like. Generally, we're pretty comfortable with those, and our experience has been that the difference between our actual return and our target is exactly the difference between our allocated overhead expense and our contribution to overhead.

MR. GARTH A. BERNARD, SR.: You guys made that sound so easy. There are some of the things that I'm struggling with still. First of all, you mentioned some of the subjective things that go into allocation. In my experience, some of the difficulties are, for example, when you say something is overhead, is it really overhead? How do you define overhead? Overhead could actually be overhead only over a certain range of production, but it may actually be variable outside of that range. Also, how do you figure out some of these allocations between new business and in force? This is a multiple-part question, as you can tell. When you have shared resources, for example, you may have a system that's being shared by different product lines. Do you have struggles with those types of allocations as well? Some companies call it target expenses in your pricing; the marginal pricing concept is a little dangerous. When you talk about expense management, you always have to look back after the fact and say, "Am I moving toward those target expenses?" In other words, you're making so many assumptions and there's so much subjectivity involved, is it really possible that, based on the methodology that you showed there, if you do meet those target production levels, will you have accomplished the objective? I don't know if that all made sense, but those are some of the questions that I have that weren't necessarily answered in the presentation.

MR. MATEJA: Your first question relates to the definition of overhead, and I think there are two types of overhead to distinguish. The first can be easily allocated to the activities that drive it. The second and smaller portion is "pure" overhead and appears to have no drivers. Over time, a well-developed product-costing system should reduce this to a low level.

Examples of the first type of overhead include legal staff, the corporate department, data processing, and the actuarial department. All of these are important to your business. You need to determine the drivers for each of these expenses and allocate expenses based on those factors.

MR. BERNARD: One of the struggles there is if you ask two different people to go through that process, you may come up with very different answers that are well justified.

MR. MATEJA: Anytime you perform an exercise like this, you have to ask yourself a question. What is the best way to do this job? Allocating all of the overhead expense to percentage of premium is one way of going about the process. That's the way many companies determine product costs. That's not the method that I would recommend. You need to ask yourself how that compares to making a subjective judgment about relative usage of overhead. Over time you can put

systems in place to get a better handle on subjective allocations. I pick on the legal department often, but many legal departments actually track their time, so it's very easy to allocate legal costs to the activities that they perform.

MR. BERNARD: I agree with that, and the point that you're making there is you have to have the appropriate systems and processes in place to make that type of allocation. That type of judgment is then easier to make.

MR. MATEJA: That's right. It's something you can grow into. It's not something that I would expect any company to have on day one. There might be isolated departments like legal or other service providers that may have a very good handle on what it is that drives their costs. You can allocate those far easier than a department that doesn't have that level of record keeping.

The next part of your question was allocation of expenses to in force versus new business and across lines. Those were, to some extent, answered by my previous statement. You've got to make some subjective estimates initially. Over time, you'll be able to develop better allocations of these expenses.

MR. BERNARD: Actually, in my experience, sometimes when you actually sit down and try to do these things, some of these calls are actually like a crack sheet. For example, the in-force versus new business thing, it's very difficult to say this is . . . . When you say subjective, it could be anywhere. You could come out anywhere and be perfectly justified in your final result.

MR. MATEJA: Could we make up an example and go through it? Would you like to pick an example of a type of expense you're thinking of?

MR. BERNARD: Let's say you have an administrative system, and you're administering new business as well as in force.

MR. MATEJA: There are certain direct costs that would be associated with putting a new policy on the book. People are generally dedicated to the entry of the system. Those expenses tend to be relatively easy to isolate. Then you're left with the remainder of the expense, which is something that you have to look at based on the capacity of the system, the functions being performed, and the activities driving the usage. Determine whether there are multiple types of activities or whether there's a single type of activity. For simplicity, assume all activity is driven by the number of contracts in force. Look at the result and compare it to an estimate of the long-run costs.

MR. BERNARD: I guess I wasn't really looking for you to directly answer the question, because I think the point is, it's not necessarily a question that can be answered directly. It will vary from one company to the next. It depends on how administrative functions are set up and things like that. Sometimes a specific person or a specific job does multiple functions, and it's very difficult to split the pieces up.

MR. MATEJA: I agree. I've worked through this at a previous company. Trying to get down to an extremely detailed level of expense allocation is a difficult,

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timeconsuming, and subjective process. It is something that evolves over time. I don't think it's something that you can make the "right decision" about day one. You need to make initial estimates and revise them, based on the reasonableness of the results. It's really a process that evolves over time.

MR. ROSCOE: I want to reiterate what Greg said about taking a matter of time. Going back to ITT Hartford's experience on developing these, we've been at it for a while, and we constantly reevaluate what we consider a marginal expense and what we consider overhead. It's a balancing act in the sense that you don't want to allocate too many expenses to a unit level, because many expenses aren't unit based. On the other hand, they do vary with production in the aggregate, and it's a tough balancing act. We have been reevaluating quite often. We feel comfortable right now, but I'm sure there are going to be more changes. That ties into the target expenses. The way we look at that is to consider the target expense, what I refer to as the pricing allowable.

MR. BERNARD: So you're talking about your actual expense or something that excludes?

MR. ROSCOE: Basically, the asset share tells us what we can spend to meet our return-on-equity objective. We consider that to be our target expense. It's no surprise that many companies in the industry today are spending more than their target expense level. They say it's a competitive market and feel as they grow they can get the unit costs down. Is that what you're referring to as the target expense?

MR. BERNARD: Yes. I felt that was dangerous in the sense that you always have to be looking back to see how you progressed toward that target, and then you also have to set up your reward systems and your management systems so that you drive toward those targets. You could be operating away from that target permanently, but your pricing would meet the target expenses.

MR. ROSCOE: That's why we developed these concepts of management premium and management policies. We feel that we need to reach a certain level of production, critical mass, and what we do is evaluate management on its ability to reach that critical mass. When we develop the target expenses, we look at three things. The first is, do the target expenses exceed whatever we define as marginal expense on a unit basis? In the example I gave, the target expense was 133% of premium, the marginal expense came out to 93% of premium, and the answer was yes, it did exceed it. If you're not exceeding marginal expenses, you're in trouble.

The second is to consider whether the amount of critical mass is achievable. Can we get to \$25 million of premium? Can you get there? Does the market support it? Does the operation have the capacity to do that amount of business? The third is, are there operating efficiencies that we are counting on? Do we expect to become more efficient with time, and are those efficiencies reasonable or aggressive? If a company can safely answer those three questions in a comfortable way, then it has done a lot to mitigate the hazard of using target expenses.

MR. BERNARD: The point is that in terms of presenting this to management, make sure that those things are being understood, as I think someone mentioned earlier.

MR. MATEJA: That's correct. One of the things that I was trying to get at, which I may have not made very clear, is the use of long-run expenses. Take the example where you're getting into a new product line and purchasing a new administrative system. You ramp up with a few employees to do that, and you have just incurred \$100,000 worth of ongoing overhead in the form of salaries. If you only sell 100 policies your first year and that \$100,000 is allocated to those policies, you will get unit expenses of \$1,000 per policy. If you use this result in pricing, you're also not going to sell very many policies in future years. You want to try to estimate from a long-run perspective. For example, you might project that with these four employees, the system can handle 50,000 policies. Your unit expenses suddenly become more reasonable, and the result is a more appropriate expense to use in pricing and decision making.

MR. BERNARD: I would like to share with you and elicit some comments from the concept of pricing on a marginal basis, setting pricing on a marginal cost, the economic concept, maximizing profits. That assumes that you know what the marginal cost is. In terms of the subjectivity and so on, you don't necessarily know what the marginal expense is. If you think of it as a random or unknown variable, to the extent that you're setting price equal to estimated marginal cost, that does not necessarily give you a decision-making framework that maximizes your profits. This is why you have to keep looking back to see how good the estimate is and how good the decision is.

MR. MATEJA: You're correct in that there is a lot of subjectivity involved in this. There's a question of where you want your subjectivity to be; it can be either implicit or explicit. Explicitly stating subjective assumptions improves the decision-making process. For example, people can understand the assumption of \$70,000 of legal expenses much easier than they can understand that 1% of premium is being assumed to cover these expenses. This ties in directly to the production consideration vital to successful macropricing. The second point is, as Mike pointed out, and I think some people agreed, to a great degree, price is set by the market so that it comes down to the ability to manage your business as efficiently or more efficiently than other companies. Expenses are a big part of that. Identifying resources that are too expensive gives you something to focus on. Management can use this as a starting point to help maximize long-term profitability.

FROM THE FLOOR: I've never been a big fan of what I understood to be activity-based costing for a couple of reasons, and maybe part of it is that I don't understand the purpose. I think it's very difficult and very subjective to try and measure people's activities. It lets you pass something like legal department set-ups where they're measuring rates, but they're setting their time up by hours, so you tend to make that a snapshot. So I'm not sure it's easy to measure activities for general-service providers, and even if you can, I think from year to year what these different departments like legal or marketing spend their time on can change a lot. Just because you introduce a particular new product one year, you don't want to allocate all of those expenses to that one product just because the systems partners developed a new system one year. You don't want to allocate a lot of money to the product for that system and not allocate money to other products.

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MR. MATEJA: Let me take the second part of your statement first: feeling uncomfortable about directly allocating expenses related to a new product. Successful decision making requires that you recognize the expenses associated with new products. If you're going to reprice your universal life portfolio, I don't think that the rest of your business should pick up the expenses related to that activity. That is part of the marginal cost associated with the new product, and you are much better off explicitly taking that into account.

Take a simplified example. You've got five actuaries and their salaries don't change for three years. You have constant aggregate costs, but one year they might develop five products; the next year they might develop ten; and the year after they might develop three. The cost associated with developing each of those products should be different. If you take a simple, annual, renewable term with guaranteed rates, it's straightforward to develop, file, and administer. With attained-age rates, you have 100 numbers for each age and sex combination. Move on to something like a select-and-ultimate term product with multiple bands, and you've got something that's far more complex. It's going to take far more actuarial, filing and administrative resources to develop. You can go on from there to more complex products, but the point is, that your more complex products do use a larger amount of overhead and related services. They should bear the cost of that service; otherwise, the simple products tend to subsidize the more complex products.

To go back to your first question, which is the difficulty of doing this and tracking what it is various people do, that is a very difficult topic. But initially, you can start with very rough approximations. If you take the actuarial department, for example, you can look at the amount of time that people spend per product. Measure it in weeks over the course of the year and come up with some rough estimate of expenses based on that. Take the total costs for the department. Say that this product takes 20% of the time, and this other product takes 40% of the resources. You can come up with a relative cost of actuarial product development for different classes of product. When you start work on a new product, you'll have to use an estimate based on the information you have. You'll have to project what the appropriate macroexpense is associated with your actuarial department function.

MR. ROSCOE: It is difficult to do that type of allocation. It's important for a couple of reasons, to at least make an effort, and as Greg said, put it on the table. Once you put it on the table, you can always refine it, update it, and make it better. If you don't put it on the table in the first place, you're going to lose a lot of value. In the two places that I see that you have values, one can you be more efficient. Greg gave the example, can the services that are being performed in house be gotten more cheaply elsewhere? Without at least taking a look at it, you'll never know. The second is, can you achieve critical mass? For those companies that are falling short of the profit objectives that management, or their parents, or owners have set for them, management is probably also asking when you will get there, when you will reach this target profit objective. It will help if you establish this concept of critical mass. Basically, if you have a handle on your total expenses, if you know the total expense for your entire operation, as long as you can allocate it and the sum of the parts equals the total, you'll be able to answer the questions one way or the other. If you don't know what your total expenses are, then you have another problem.

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MR. MATEJA: One of the other parts of this process that I have found to help is examining these types of expenses at the aggregate level rather than on a unit level. The result is usually a simpler decision-making process. A pricing process based on aggregate expenses might take your product development time from six months to two months, just because the information is in an easier-to-understand format. You may also force some hard decisions to be made at higher levels. For example, you might determine that a new product requires additional lawyers and other outside support. If this costs \$300,000, management can generally focus on decisions in these terms more effectively than those framed as dollars per policy sold. Similarly, stating that, based on previous product development history, a new product is going to monopolize the actuarial staff for four months provides management with information necessary for making better decisions.

MR. JOHN R. GERMANN: I have a follow-up question on the ROE. I'm intrigued by how one can come up with a formula that takes into account the allocation of surplus to particular departments, let alone product lines. Mike, I wish you'd expand a little bit on how you build that into, I assume, the pricing premium and how you reflect things that happen over time; phase 109 being a recent example where deferred taxes drastically altered the way the ROE looked by product line. I assume we're talking on a GAAP hourly basis.

MR. ROSCOE: I was afraid somebody would ask that question, because I've spoken somewhat fast by using terms like ROE. To be honest with you, within my company, the analysis that I spoke of is carried out on a statutory ROI basis. This is the only answer I'm going to be able to give today in answer to your question. We have done a prior analysis where we related a statutory internal rate of return to a GAAP return on equity. Don Sondergeld, a former chief actuary at ITT Hartford, has done a lot of work in that regard. The questions that you brought up don't have anywhere near the impact on a statutory basis.