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Session 49 PD Data Battles—Report from the Front Lines

Track: Technology

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Moderator: Dean K. Slyter

Summary: Volumes of data have always been an integral part of an actuary's work. Data are used in actuarial studies, financial reporting, rate tables and product definitions. While the use of data has been a constant theme, the format of the data has not. This creates challenges on many levels. Several organizations are currently working to standardize the data that actuaries use daily. This panel discussion summarizes some of the current data standards available (including the SOA's table data standard XTbML), includes tips on using these data standards and forecasts how data standards will be used in the future. The audience will learn when data standards should be used, gain insight into the data standards being adopted by IT departments and understand the cost savings that can be achieved by data standard implementations.

MR. DEAN K. SLYTER: I'm with AEGON USA Inc. I'm moderating this session as well as standing in for one of our speakers, Lynn Gadue.

Our third speaker is Gary Wicklund. He's the executive director at Capricorn Research. He's out of Cedar Rapids or Coralville, Iowa, depending upon the day of the week. Gary has a Ph.D. in business administration, which included, by the way, a minor in statistics. He founded his company years ago, but was formerly with the Freedom Group, which was the dominant seller of statutory annual statement

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[†]Mr. Gary A. Wicklund, not a member of the sponsoring organizations, is executive director at Capricorn Research in Coralville, IA.

software for a number of years. He was one of the founders and sold out a number of years ago with the other founders. He has taught at the University of Iowa Business School. He is currently very involved with another business standard, called XBRL (Extensible Business Reporting Language) or XML (Extensible Markup Language), for business reporting, which is gaining a lot of ground in the area of doing SEC sorts of reporting, as well as moving toward doing NAIC reporting.

Jeff Prescott, who is the life solutions actuary at Transamerica Reinsurance in Charlotte, North Carolina, will be our second speaker. He served in a variety of roles in the life reinsurance product line and now is a leader in the organization for data quality initiative. You'll certainly see in his presentation a good example of reinsured standardizing data.

The idea is that we are people who are directly involved in standardizing data in the efforts going on in different places. I'm going to talk about how data standardization is the easier way of doing data rather than always creating things anew. We'll talk about the Association for Cooperative Operations Research and Development (ACORD), which is the standards group that is administering and facilitating the insurance standards as well as the table data standards. I'll talk a little about XML. To how many people here is XML something you don't quite understand? There are several. I'll take a little bit of time there; we'll pause and talk about some examples. We'll talk about the ACORD product profile definition, which is a way of defining an insurance product, an annuity product or even an investment product. We'll look at an example of the XTbML table standard, which I will probably refer to as "X table." It's a little more pronounced, so that has become the acceptable way of talking about it. Finally, we'll look at some of the benefits that I wish had occurred a little earlier in this whole process.

ACORD let us use this little cartoon about standards, which points out that standards are everywhere (see page 1, slide 3). Just think if you had to face that size of tennis ball or if in each town the height of the basket changed for the NBA or the college basketball players. It could get interesting, just like in baseball where the fields are different. I should say that there are bad standards and there are baseball standards, which do have a little bit of variation.

Lynn Gadue, for whom I'm filling in, works for VERTEX, an enabling organization. She helps companies enable themselves to do straight-through processing of annuities and life insurance products. That includes fully defining what the product offers (what are its riders and options, what are the issue ages), and then there's a means to transmit all the information about the different participants on the policy and push that all through the Internet (or whatever way you want) from one computer system to another. We'll see how that works with XML in just a moment.

ACORD was formed in the 1970s and mainly worked in the pricing of cash-based insurance. In fact, if you look at the bottom of some of those forms you fill out when you apply for auto or home insurance, you'll probably see the ACORD name

at the bottom. They have a standardized form and standardized methods, so property-and-casualty insurance is very standardized. It's very well defined; the terms are consistent across companies. That's a result of ACORD's efforts in the 1970s and the 1980s, which was accomplished through fixed-link data files (XML is a real improvement from that). ACORD is an independent body. Many of your insurance companies are members of ACORD, although you do not have to be a member of ACORD to use their standard. They do provide extra material to help you implement and certify that you're directly using their standard, if you do pay a membership fee. They also have established some "best practices," which are some best ways of using their standards as well—another form of standardization.

XML is Extensible Markup Language. It looks just like text. We're going to see a couple of examples later. It's readable to the human eye, and it's readable by machines. Because it's readable by machines and not full of symbols and computer programming terms, you can move an XML message from one computer system to another, from a PC to a mainframe, or to whatever system you have, and it's basically readable. There are tools out there, and these systems are enabled to read, to interpret the XML stream, as well as to interpret what is called a schema, which defines what all the terminology or taxonomy in the XML message mean. So it's text, and it can be used across different platforms. Extensibility means that it can be upgraded and expanded without impacting existing usage, so you can add additional terms. If your system doesn't need those additional terms or taxonomy, it can ignore those. It can press on and use the message regardless of the extra information being there. It enables one-stop shopping, which is the idea of developing a product on one system (let's say whatever modeling system you're using for pricing products) and being able to export that product out to the illustration company, out to your policy administration company or out to whatever systems need to have product information. You can just send that off, import it into those systems and be ready to go. One company, which I'm sure a lot of your companies use, is working very hard to be able to accept life insurance policy information into the ACORD format, so that down the road, the administration system and the illustration system could more easily share all the same information.

Computer Science Corporation is also involved in this initiative. Navasys is another policy administration system company. Most of them are very involved in the ACORD process. The vendors get a little smaller fee for joining ACORD. It has become very important in the IT departments as they're shopping for products to consider whether a software vendor is providing products that are ACORD compliant or working toward using the ACORD standards. It has become very important in that arena. I was going to say at the start that this session is a chance to look behind the curtain of IT and see things that are going on over there that might help you do your job as an actuary.

The National Association of Variable Annuities (NAVA) is working with ACORD to put together standards. The standard has a number of supporting tools for which a

technical model was defined. It has, for example, a technical specifications guide, which will give your IT folks all the information they need to communicate, say, policy pricing information or the application using ACORD XML. There are examples and implementation guides put together. I'm working on putting one together right now for the X table standard. Working groups exist to continue expanding the standard and to create best practices.

There are a number of areas where we're seeing the ACORD standards having an effect, including administration and claims—there's a whole claims structure being built up. Commissions is a very robust structure now using X tables. Licensing and appointment has been a working group within ACORD, which has made a lot of effort to allow them to use XML to request age and licensing. They've coordinated with the states as well to allow this; state insurance departments are receiving ACORD XML messages and creating licenses and using that. Appointments are using it. So messages are going back in there. The Medical Information Bureau is very involved with ACORD XML and sending messages. They've actually moved from their old six-link data file to ACORD XML over the last several years. Gary is going to look at XBRL in just a few minutes.

The whole idea is that you stop building a one-off system. If you have a policy administration system that can take all the policy and product information it has and export it to another system or that can receive imports, you're not designing a system again and again. You can send all your products through there. All your policies can communicate policy information. In fact, my company, AEGON, is setting up to allow us to inquire on a policy and say, "Give me the current cash surrender value" from outside the system—from anywhere, from my desktop PC. In fact, I'm looking forward to in a few months being able to inquire from my desktop PC to the administration system to give me the current balance for the guaranteed minimum death benefit. I want to be able to subtract that. I've got the right information on this fixed data feed for what that is because we have found that occasionally things will happen and we aren't getting the right information. We originally found out that our fixed data feed wasn't giving us negative numbers. So if somebody has a guaranteed minimum death benefit that has gone negative, we were getting a positive number. They can occasionally go negative. It's like a query from my PC to the administration system; I can get a live quote that would tell me the current value. We're hoping to have this in the fourth quarter of this year.

This is an example of the old way of communicating product information (see page 3, slide 2). The one on the left is the old standard 80- or 132-column file for which every column has a definition or a set of columns to create a certain piece of data. I've worked with this for years; it's very hard to work with it. When you have a problem, you search for a long time to find where the problem is. Eventually you get good at reading it, but it's not at all straightforward, and there has to exist a separate definition telling you what every piece of data is.

The one on the right is a spreadsheet. I've done spreadsheets like this when I

model many times, and I'm sure many of you have, too. You can look at this and say, "Yes, I can look at the column called 'Company Name,' and I can tell that, yes, the insurance company is defined on the fourth line, and the actual insurance company name is in column B." I could interpret this with my eyes. But if you give this to a machine, does the machine know, for instance, that the real information doesn't start until A4, not A1? There are a lot of small ambiguities here that prevent it from being used effectively or that require you to make a major effort to make sure it's in a certain format. Also, because there's the possibility of failing to have it in that format, you have a lot of checking to do on the other end.

I've discussed a concept quickly with Lynn but we didn't put it into her slides. That is the concept of a round trip, data-wise. This is when I'm defining a policy product and I define it in some system or two. In other words, say I'm defining an annuity product or a life product. If I have a good way of messaging that information out of the system and I want to test having that other system export it back to me, I re-import it and I get the same information. Maybe a few things changed a little in their placement and stuff, but I've got all the same information, via a round trip, as I call it, and I can prove that I'm correctly communicating the information. There's a bit of an assumption there, you know. Are both systems doing the import and the export right? But if I get a round trip—if I get back all the information I've sent—I've at least shown that I sent across the information correctly and that that portion of the system is working correctly. I've got good, easy validation at a first level.

This is an actual XML snippet (see page 3, slide 3) that is an example of the ACORD XML policy product profile for annuities. I'll go through this. We have a message that's essentially a message communicating a policy product. We have a little bit of a wrapper. There's a thing called a TXLife wrapper, which is an ACORD standard. It's a transaction wrapper. It's a way of encapsulating the internal message, which is the actual policy product. The policy product starts about halfway down the page. There we move into the XML standard. We identify the party here, which is the insurance company. There are a number of fields—in ACORD we call them "properties"—that define who the insurance company is. Then we actually start to define the policy product toward the bottom of that first page. Then we go into fields defining who the insurance company is again. They give a product claim code; we define that this is a variable annuity product. We use what is called a "type code" there (kind of a look-up). We use a primary annuitant, which is defined as the person on whom the price is based. Then we go into the list of states and where the product is currently licensed and available for sale.

This is the kind of thing that companies such as Annuity.net are using to define annuity products for sale. A lot of you have probably heard of Annuity.net. It was started a few years ago to enable selling other annuities through the Internet. Initially it was direct to the consumer, but they found that that model didn't work too well. Annuities seem to be sold just like life insurance. It's probably the most common platform for the sales of annuities through brokerages, banks, etc., in terms of Internet platform. It allows this whole communication of policy products

through ACORD XML and then allows the actual submission of the application and providing the information on the annuity, etc. It happens through XML as well.

Now I'm going to go on to the X table standards. The one that initially came out of the Technology Section of the Society of Actuaries focused on mortality or lapses, a simple kind of table that actuaries keep. It was used for a lot of the standardized tables and a lot of the persistency tables, and we've seen pension data move into here and so on. The Annuities Working Group within ACORD has taken the X table and now uses it for commissions. They are using it massively for variable annuity and fixed annuity commissions.

We're going to look at an actual example of an X table. This one looks familiar because I did this spreadsheet about two years ago (see page 4, slide 2). Lynn decided to use the 20-pay life cash value spreadsheet table I did a few years ago. If you look at a spreadsheet of duration of issue-age-based cash surrender value, you know how to read these things. We look at them all the time. But if you were to explain to a computer how to read this or explain to a person who hasn't seen tables, it's a little tricky. It's a scale; it's like a map. You learn to read a map, and you learn to read a table. But for a computer system to be able to search through this table and use it from Excel is a little different from the table setup you'll see in the actual, say, mainframe system.

The whole idea of an X table initially was that it was a place to store data in a standard way so that you could use it in a lot of other places. The concept of an X table now is that it's also a way to communicate tables of data, which is mainly what is happening in ACORD with tables of commission data. They aren't going to maintain a pile of commissions in the X table format. But it's the way that they send commission information across the Internet. Common commission lookups are issue age, the kinds of riders that are on a variable annuity, sometimes the state or by the state if there are premium taxes to be handled and so forth. There are a lot of possibilities there.

We're going to take a look at how we represent this table and the X table. There are two sections in the X table for the finance table. One is the metadata section (see page 4, slide 3). At the top, there's a bunch of information defining what this table is about. You'll see a table name; that's the text. But this just fills in who actually provides the table. What is the name? What is it for? As a little bit of background information, a table is identified by who the table provider is and what table ID they assign to it.

Then we have metadata. This section tells you how to work your way through what you might call the "accesses" of the table. Sometimes they're also called keys, depending upon whether they're numeric or text. We have two accesses. It's a data type of decimal, which is of some use. This is the scale. You'll see that scale subtype is issue age. This is a list of properties. This is an issue-age-based access, so that's the access you saw going down the column. We've defined the issue age

column, and we defined a minimum and maximum age. You could even enumerate and say, "I have these enumerative issue ages of 35, 36 37..." It's not necessary. We've already said that we're starting at 35 and the maximum is 45. You have some flexibility. In the X table standards, not all the possible properties (as we call these things) have to be listed there; they're optional.

Then I defined duration as the next access. So you can look at the metadata and get a sense as to how things are lined up. Then we have the actual data, which align up essentially based upon the order you choose. You could do this looking at the issue age and giving all the durations, or looking at the duration and getting all the issue ages. To me it makes more sense to do the issue age.

So here on this page (see page 5, slide 1), we're going to the access "value" section of the X table. We work through the issue age 35 duration values, and then the age 36 duration capital cash values. Certainly you could do this with a surrender charge. There are a lot of other things for which you could use the same table structure, and there are companies that are ready to receive data in this format. COSS Development Corporation, which is in the illustration software arena, is actually using the old X table format, and they will eventually be moving to this one. There have been a few changes. The old one looks more like a vector, where you just lift each of the sectors consecutively. That took a little bit less space.

There's an upcoming table data standard being worked on now within ACORD that will allow you to select a set of values. If there are several fields, several properties or values involved in determining a surrender charge, you'd have them all together.

In summary, there are benefits. You can automate and simplify life, you can prevent rework and you can avoid a lot of checking. Standards are becoming dominant. All of your insurance companies, if you work for a carrier, are at least looking at these standards and wondering when they are going to do something with this. Many of them are very active. For example, AEGON, MetLife and New York Life are very active, and the vendors are very active. Computer Sciences Corporation has made this a major initiative. They have such systems as Vantage. Hooper Holmes is an annuity order entry company. Cost is involved in Navasys. Another client is the LIDP Consulting Company (where I used to work), which is very involved. So a lot of people and a lot of companies are spending a lot of effort to get XML working.

Standards are here to stay. They've established a foothold, and it should keep on going forward. In fact, Microsoft itself has had, for probably 10 years, a major initiative in XML and encouraging XML. I hope to see that in the next year we'll have a spreadsheet tool and perhaps an access sort of tool to allow you to import and export X tables so you can start to work with them without getting to know everything about them.

MR. JEFFREY T. PRESCOTT: I want to take you through a real-world example of

data standardization. I have a few preparatory comments and a couple of disclaimers first. There is very little actuarial material in my presentation. There's also very little technology material in the presentation. My presentation focuses on things that are more difficult than actuarial science and technology. I've done some informal surveying of people who have tried to implement data warehouse-type applications in their companies. If you ask people if they were successful on their first attempt, the answer is usually "no." If you ask why, it's usually because there was a lack of understanding of the incoming data. Perhaps the data model was created by someone who didn't understand the business or the business needs or the output. Actuarial resources are often concentrated on coming up with tools for using the data, and then you find that your results aren't usable because you didn't understand the data.

So I'm going to take you to the real-world example from the perspective of a life reinsurer. I hope you'll take away some appreciation, if you're a direct writing company, for some of the challenges faced by reinsurers. But some of the lessons here would be applicable to other situations where you're trying to standardize data that you're receiving from multiple sources, for instance if you're a direct writer who has acquired other companies, if you have multiple systems or if you had multiple data practices over several generations.

I am going to look at several things from the aspect of reinsurance administration. First we'll discuss how data quality drives reinsurance access for clients. The goal here is to see that data quality is not just the problem of the reinsurer, but that it ends up affecting the terms of reinsurance for clients. We'll talk about the challenge that the reinsurer faces when incoming client data are not standardized. I'd say this is an extreme example; we'll talk about that later. Finally, the reinsurer must standardize data to support business processes and then comply with external requirements.

One of our learnings is that data quality improvement and data standardization are not a fixed journey from point A to point B. It is an infinite loop. What we found is that you start with raw data, and you try to transform that in some sort of organized fashion with information from which you can learn. Then you do your analysis and turn it into knowledge, where you can make business decisions and take action. But it's a circular process; when you start using the data, you learn more about them and you take those learnings back and improve your data quality again.

First of all, I'd like to discuss very quickly how data quality can drive reinsurance for a direct client. There's sort of a hierarchy of data requirements. If you start down at the bottom, the fundamental requirements are data and process control requirements. Are we able to recognize your data, book premiums and pay claims under the right treaties? Also, are we able to calculate reserves correctly and things of that nature? For clients who are unable to meet that minimum reporting requirement, they may lose that access to even traditional reinsurance solutions.

Sarbanes-Oxley has also raised the bar on some of the control requirements with reinsurance reporting, both for the ceding company and for the assuming carrier. Layered on top of that are certain performance management requirements where the reinsurer is able to monitor experience on a block of business, whether it's mortality experience, persistency or distribution of business. The better the reinsurer is able to measure and track emerging experience, the better the reinsurer is able to set pricing assumptions. If you have high-quality data that we can understand and monitor, chances are that you'll end up with more favorable reinsurance pricing assumptions. If your data are such that we cannot understand them and can't track your experience, you may end up with a risk premium embedded in certain assumptions to account for that uncertainty.

Finally, there are capital management requirements. Perhaps you've been in other sessions talking about securitization and other new types of capital. Some of these new capital providers have much more stringent data requirements than some of our traditional partners in the insurance industry have had in the past. What we are seeing is that certain carriers who can meet the data requirement have access to more cost-effective capital solutions.

Also, by way of background, I'd like to spend a moment talking about the evolution of reinsurance administration over time. Back in the old days, reinsurance was administered by the reinsurer. Ceding companies submitted individual cessions on paper to the reinsurer, the reinsurer would set up that policy in its administrative system and the reinsurer would then turn and bill the client every year for premium on that policy. This was a very labor-intensive process. It had a lot of duplication of effort, so somewhere along the line there was a switch to client self-administration. This eliminated a lot of the duplicative administrative effort, but it also lost a lot of the granularity in reporting. Clients tended to report on a bulk basis in summary form, and the reinsurer did not have a lot of individual detail about the policies being ceded. This worked fairly well in an environment where ceding companies were retaining as much risk as possible. They were ceding out excess of their retention on a YRT basis. A reinsurer could manage and monitor their experience by just looking at premiums and claims over time because there was a match between them. Over time, a couple of things happened. Clients started ceding out more and more of their business and retaining a minimum of their mortality risk rather than as much as possible. Also, there was a move to co-insuring level-term plans, where premiums and claims don't necessarily match up by duration; there's pre-funding going on. At the same time, improvements in technology made it possible for the client to administer the business, but also to provide detail—transaction and in-force files—on an electronic basis. That's pretty much the state-of-the-art today. Anyone seeking reinsurance on new business would generally be expected to provide seriatim-level reporting of the transactions and in-force.

Let's talk about the challenge facing a reinsurer as a recipient of incoming data from lots of places. Transamerica Reinsurance assumes over \$600 billion in life reinsurance. Our average cession is probably about \$45,000; most of our clients

have reinsurance pools where we receive just a share of each policy. You can see that that's a lot of coverages if it adds up to \$600 billion in total. Currently we have about 110 company groups that electronically report transactions and/or in-force listings to it. Many of those groups would contain multiple legal entities. In an average month, we process 170 distinct client datasets. Last year we processed 85 million individual client data records. So in organizing and standardizing our data, one of the challenges we have is just the sheer volume of data coming at us, as well as the number of different entities sending data to us.

Compounding this challenge of the sheer volume of data is that incoming data are not standardized. There are many different client reinsurance administration systems out there. There are several popular vendor-supported systems, and even within systems, different companies are all on different versions (different releases) of the system, and they can have different business practices in using the systems. There are also numerous homegrown systems out there that are proprietary to individual clients. In addition to the number of platforms, there's a lack of standard coding schemes used by ceding companies. Every company has its own way of uniquely identifying different treaties and different plans and different underwriting classes within those treaties. Even within a given client, there are schemes for coding that change over time.

Finally, there's a lack of standard processing rules used by clients. Some transactions are fairly easy to interpret as an issue transaction or a termination transaction. When you start looking at things like policy conversion, policy changes and so on, there are many different ways that ceding companies report those types of transactions.

Our solution at Transamerica was to come up with a data store. We call it "PODS," which stands for "Policy Operational Data Store." It was developed to be a single source of standardized client data. The single source would then support processing, analysis and reporting. We had several requirements for the solution. We needed a robust and sustainable business process to support it. We needed a rules-based approach to interpret incoming client data. Our clients are going to have different business rules; as long as they are acceptable business rules, we need to be able to interpret and accept business the way our individual clients process it.

At the same time, we realize that even if we have 110 company groups reporting data to us, there are not 110 different ways to issue a policy. There are not 110 different ways to terminate a policy or to effect a conversion. So we were looking for a finite set of rules, and then we could map each incoming client to rules appropriate for their business. Our solution had to be scalable to efficiently handle both current volume and future growth. As mentioned before, we had 85 million different data records processed last year, with growth of our business and multiple transactions coming in in the future on in-force policies. You can see how the size can mushroom quickly.

Our data must be auditable to accommodate various control requirements that we have. We must have the ability to measure data quality, so that the users of the data can make informed decisions when they're using the data and be assured that the data meet their requirements. Finally, we have to have the ability to use imperfect data. We're working in a real-world situation, and we can't impose such stringent data requirements that we're unable to do business and process business.

This is a picture of what our business processes looked like before we had the single source of standardized data (see page 8, slide 2). Client data came in on tapes or electronic files and then were loaded to a data storage area, but the data were not organized in this area in a way other than by dataset. So records over time on a single coverage were not linked together. Also, data values were not standardized across the company. To use the data, all of the users of the data had to go through a standardization process to transform the data to a space that would meet their needs. You can see some of the users out on the far right. Transaction processing would be booking of premiums and paying of claims. There's managing retention, as well as traditional actuarial functions, such as valuation, projections and experience studies.

This was a very expensive way to approach data standardization. We were duplicating efforts; we were solving the same problem over and over again. A man with two watches is never quite sure what time it is. If you have a single source for data, you're going to have consistency. There's potential for error, and it was difficult to monitor emerging experience.

Then we introduced this single source of standardized data. We took all of the diverse standardization efforts that were going on at the back end and moved them up to the front end (see page 8, slide 3). So we have a unified effort to standardize the incoming client data, and then they're loaded to this single source that can then be used by all the functional areas. This single source is different from our old way of doing things in a couple of key ways. First, the data are linked up. All transactions received over time on a given coverage are linked and connected together, so you can see an actual policy history. We also do linking across lives. Just as a direct company has to manage its retention or an reinsurer has to manage its retention as well, our retention is a per life retention rather than a per coverage or per policy retention. It's necessary for us to be able to recognize exposures on the same insured or multiple policies as well as receive the risk for multiple ceding companies. With the single reliable data source, we have improved accuracy and consistency in our processing and reporting and improved our ability to monitor emerging experience.

Standardizing the data is a process. I'll quickly take you through the process that we use (see page 9, slide 1). The first step is staging the incoming client data. Most of the data we're receiving are flat files, fixed-record links. We have to parse the data from the client tape to a staging table using client-specific logic. We would

have a data dictionary for each client and recognize which value, which field, during which position and what are the valid dollar values. We also do some simple translations and derivations at this step. For example, whatever value the client gives us, we can translate into "M" and "F" for "male" and "female" at this step, if they're providing "0" and "1" or some other value. We can also derive certain missing client values or values that the client doesn't report in certain cases. For example, if you know birth date and issue date and age rule, you can calculate an issue age if one is not provided.

The next step in our process is a treaty-linking process, where we associate an incoming record with the appropriate treaty. We use several client-provided fields to do this. Typical fields are the client treaty code and client plan code. Sometimes it's also important to bring in other client-reported information to link to the appropriate treaty, so we actually have a flexible key that can vary by company for this treaty-linking. Once we've linked the policy to the appropriate treaty, then other values are mapped and standardized. We check to see that the client's values are recognizable and that they are legitimate for the treaty under which the business is being ceded. Examples would be reinsurance method, product type, underwriting class and also the processing rules that are being used.

I can give a couple of examples here on the importance of standardization. If I am reinsuring level-term policies from a number of ceding companies and I want to study persistency at the end of the level-term period, or if I'm interested in studying mortality deterioration after the end of the level-term period, then I might be interested in querying out experience of certain product types across clients. When the data are not standardized, that becomes a very difficult undertaking. If I've done the work to standardize the data upfront, I can say that I want all policies that meet this criteria, say, at a 20-year level period with a 10-year guaranteed period.

Underwriting classes are very difficult things to standardize. There is no standard throughout the industry as far as what classes are named, what they're called or what the guidelines and requirements are for the class. Even within a given company, the number of classes can change from product series to product series, and specific rules and requirements can change over time.

Our approach is to first rationalize the underwriting classes within a treaty, or, if there are multiple generations within a treaty, within an actual deal or priced unit. Our solution would involve taking the client-reported value and then figuring out that this is the best of five classes, this is the second-best of five classes, third-best, etc. That allows us to organize our data within a deal, within a treaty. If we want to look at data across time, across deals, across treaties and across clients, there's additional business knowledge that we have to bring in at that point. For each opportunity that we consider or each deal that we price, we have to evaluate or score each underwriting class of a client, based off their criteria and guidelines and be able to say, "I expect Class 2 of five for this client to be a Class 1 of three

for this client." There's a bit of extra work that we have to do to standardize that because the rules and classes used by clients vary so much.

After we have linked the data, we go through a certain metric and reconciliation. This is actually a simplification; metrics are performed at each step of the process. But in particular at this step, we have some metrics with some hard stock. At this point, we do reasonableness testing on the data and make sure that all key fields that we need are populated with valid values to a fairly high threshold. If they're not, we can stop the dataset load and try to remediate the situation. We can also do reasonableness testing at this point. For example, I can have a metric to look at what percentage of the records are associated with smokers. If 100 percent of the records on the dataset came through with smokers, that's a sign that something was probably missed in the translation. Someone ought to look at this.

We've created a metric engine in which users can define specific metrics that they want to see and also define the thresholds that would be allowed. Certain metrics are informational only if they wouldn't stop tape load; other metrics have hard stops associated with them if they're violated. Using the engine approach makes it easy for the user to add new metrics over time without requiring IT or system support. Also, the thresholds can be tightened up over time as you improve the quality of the data to prevent you from sliding backward.

There are also reconciliation steps at this point. In addition to sending a transaction tape, a client will usually send a paper summary of the transaction tape. We'll make sure we can match control totals between what we have staged and the client summary statement. We also make sure that we can match control totals against the client funds that have been transmitted. The premium transactions net of commission transactions on the transaction tape should match the check or wire transfer that we received from the client.

After we validated that we're ready to load, each incoming record is linked up with existing records for the same coverage. We use a combination of several client-provided fields to build this key. The solution we came up with was any unique combination of treaty code, plan code, policy number, issue date, base/rider indicator and coverage type. Later when we talk about exceptions, we'll see that this can be an area where we see exceptions if a client changes a key field on a coverage without communicating some sort of change transaction. We may think that this is a new coverage and not recognize that it's a continuation of an existing coverage. In a worst-case scenario, we may think that there are two coverages in force and come back to you and ask why you're not paying premium anymore on one of them.

After we link coverages together, we go through a life-linking process to associate each coverage on a life with all the other coverages that we see on a life. This allows us to manage our retention. We have what could be called "fuzzy logic" to do this. Ordinarily we do not receive a unique identifier from a ceding company, such

as Social Security number, that would allow us to easily identify someone. We have to do the same sort of alpha searching that you may do on the front end when you're managing your own retention. Our logic looks at insured name, sex and date of birth and tries to find matches. Our approach to date is that we use this linking before we would feed out through our record partners. This linking creates suggestions so that the analyst would review and say, "Yes, I can see that these are the same life" or knows that this clearly is not the same way. We're not completely automated at that point.

Finally, after we've linked up the coverages and the lives, we update in-force status for each coverage and update amount fields for each coverage. Sometimes updating the in-force status is clear. If the transaction was an issue transaction, the end result of the policy should be active. There's a termination transaction, so the policy should be terminated. Sometimes we receive ambiguous transactions; if the transaction is "miscellaneous" or fixed or an error correction, it may not be clear what the end status should be. Also, we may receive multiple transactions on the dataset all with the same effective date. Depending on the order in which you applied the transactions, you might derive a different ending status. Was this a reinstatement and then a termination? Or was this a termination and then a reinstatement?

We also have to update the amount fields for what is in force. An amount could change for several reasons. There could be a policy change, or the insured has had an increase or decrease in face amount. Again, we have to interpret how your data are coming to us. On a changed transaction, are you sending us the amount of the increase, or are you sending us the new face amount after the increase? For some coverages, for example, if we were reinsuring permanent products on a wire key basis, there would be annual or quarterly changes in net amount of risk at that date to reflect that. Then there are also error corrections. For example, the client may have reported an incorrect amount on a tape and then sent in the correction later.

Let's discuss some of the exceptions we see. At times we may be unable to link an incoming record to a treaty. We capture metrics around that. We will not load a tape if there is a significant amount of records that do not link to a treaty. Once the data are loaded and linked up and available to users, it's hard to fix those data at that point, so we try to prevent those data from being loaded. Sometimes we're unable to link to a treaty because we've misinterpreted data. Sometimes a client may have ceded to us, in error, a coverage that isn't covered by a treaty—something that belongs to someone else, for example. We may be unable to link an incoming record to an existing coverage. As I mentioned before, if a client changes a key field and we're unaware of the change, we may think that it's a new coverage. We can do some metrics around this on the incoming side; we expect issue transactions to create new coverages, but we generally don't expect renewal transactions to create new coverages.

We may be unable to reconcile differences between two client-provided in-force

listings and the intervening transactions. We would generally expect that if you were providing monthly transaction files and quarterly in-force listings, we should be able to take a beginning in-force file, apply transactions and get to your ending in-force file. We may be unable to recognize or interpret certain transaction types that you're sending. Those are the general categories of exceptions.

When we see the exceptions, how do we resolve them? First, we identify the root causes. I mentioned before that if a key data element changes, that can trick us into thinking it's a new coverage when it's actually an existing coverage. If the client changes processing rules or systems and we're unaware of it, we may be applying business rules that are out of date. Sometimes a client may make an error in reporting by erroneously ceding a policy to us. A very common root cause is that we've incorrectly interpreted the data that's provided.

For resolution, the chief take-away is communication. We've tried to greatly improve communication with our ceding companies. In the past, we would see changes come through, and then we would try to figure out what happened. In today's world, we try to work with our clients to anticipate changes and work together collaboratively so that we can have a smooth, uninterrupted flow of processing.

In particular, we are spending a lot more time and effort on new treaty implementation. In the past, we would tend to wait for the new business to show up on a tape and then try to figure it out. Now, we're much more proactive. When a new deal or when a letter of intent has been signed, we contact the client immediately to find out what tape they are going to be sending this business on for the first time. When will we see new business for the first time? What treaty codes are they going to use? What product codes are they going to use?

Likewise, we're trying to be more active in partnering with our clients on system conversions. If you're going through a system conversion, we welcome the opportunity to collaborate with you on that and perhaps get a test file in advance to check things out and get feedback. Also, communication around process changes, mergers and acquisitions is invaluable in keeping everything synced up.

Another resolution strategy is enhancing our client's specific business rules. We may see exceptions and find that it's because we've assumed the client was processing business a certain way. The client is processing business differently, but it's an acceptable way to do it. We can simply add an additional business rule for that client and start interpreting their data the way they mean for them to be interpreted.

We can also implement new data quality metrics during the load process. This is the continual learning that we see. It's hard to anticipate in advance every exception that you can see. But once you encounter an exception on a certain client, you can start testing for that condition on every dataset for every client you load and

prevent it from happening again.

To summarize, we've reviewed how data quality can drive reinsurance access for clients. We've looked at how incoming client data are not standardized and the sheer volume of client data that we're receiving. We've looked at how, in a real-world example, we've attempted to standardize data to support our business processes and to comply with external requirements.

MR. GARY A. WICKLUND: Let me bring you up to date about me and why I'm involved in this. In the last two or three years, what I've been trying to do is push forward with some of the things in connection with XML and XBRL. Three years ago, I went to a conference in Berlin of the XBRL organization; it's a nonprofit organization that is made up of several organizations around the world. There must have been about 100 or 150 people there. I knew nobody. It was a very unusual situation, because at least coming into the Society of Actuaries, I saw Larry Gorski, and I've seen Jim from Northwestern Mutual and some other people whom I do know in the insurance industry. But at that one I knew nobody.

Then one person came up to me, and he says, "Who are you?" I talked a little about what I had been doing over the last 35 or 40 years in connection with teaching at the University of Iowa and actually working with the insurance industry. I don't know how many of you have done statutory reporting, filled out the blue books for the life companies and so forth. As Dean mentioned earlier, I got involved in working in that particular arena, statutory reporting, and so I described that to this person I met. He says, "Wow, you've done all of that in your career? You started with Lotus spreadsheets and 5¼ inch diskettes, and you automated this particular process?" I could go back and talk a lot about history, but what happened on part of this was that standards jumped out at me. I don't know if any of you out there do construction work. Do you know the size of a two-by-four? Two inches by four inches? No. At one point in time, it was 1.75 inches by 3.75 inches. Now if you go to your local lumber store and find a two-by-four, it's probably 1.5 inches by 3.5 inches. You know that you have to pay for those saw cuts that were on it and so forth. If you start doing construction and you don't have standards, it's hard to put things together. This is kind of what we're talking about today. Standards are what Dean was talking earlier about that Lynn is doing and things that Jeff was talking about here. We're trying to put some standards together so that we can share things and pass them on.

Another good standard is a bar code on a can of soda or a bottle of water. In other words, that bar code is such that you can actually read it and tell what that product is and so forth. I don't know how many of you have been using some of the services now with the airlines where you can actually get your boarding pass printed in advance. If you look at that little thing on there, it's a two-dimensional bar code that they read. Again, that's a standard that has information about it. On the back of my Iowa drivers license is a bar code that has information about me. It's encoded there. Unlike the bar code that you have seen on products, it's actually

a two-dimensional bar code. I'm working with somebody right now who's trying to do video bar codes so that you can send them over the Internet. If we can all adopt some standards, it's sure going to make our life a lot easier with respect to processing.

Today I hope to show you some of the standards that I've been working with over the last couple of years in this arena of XBRL and XML and some other things. Who's doing what? There's the XBRL organization that we'll talk about. There's the ACORD group that Dean talked about earlier and some of the things that they're doing. The regulators, whether you're looking at the National Association of Insurance Commissioners, the Federal Deposit Insurance Company, the government or other people like that, are looking at some standards. In the industry, I think we mentioned earlier today some of the people who are involved with ACORD and some of the companies that I've been trying to bring in, as far as the insurance industry, to do some work with statutory and others. Hopefully we're reaching down into the place that I was some years ago when I was in the academic world and bringing it up through the accounting, data processing, information systems and management science departments.

What's in it for me? Challenges. I've always been challenged by something. I've been challenged on certain projects to produce and to show that they will work. What are some opportunities? There are some pilot projects out there right now with respect to public companies, with respect to statutory reporting and with respect to the types of things that Jeff was talking about this morning to go forward and try to grab those better performance measures.

When I go to an XBRL meeting and we talk about XBRL, we talk about the corporate reporting supply chain (see page 14, slide 1). You've got your processes that you think about in an organization. We've had a good description of those with what Jeff talked about: business operations, internal financial reporting, external investment and lending associations looking at how good you are as a company. On the chart, you see who are some of the participants in it. Find a slot and put yourself in there. I'm sure you're somewhere there as a participant—either the company, the investor, regulator, auditor, management accountant, trading partner, software vendor or something like that. You fit in there somewhere.

What do we have going on in this arena? We've got the ACORD people out there looking at standards. Back in 1978 to 1980 at the brokerage firm with whom I was working, they were trying to use some of these standards because they were licensed in 50 states and had to fill out these forms and post bonds for what they were doing in that particular area, using a standard from ACORD and trying to get the states to adopt this. So going back to 1978 and some of the early work, what's happening now with respect to XBRL is that there's a group of us trying to implement an XBRL taxonomy for doing a general ledger.

Let's talk about the software companies that provide your general ledger (the SAPs,

the PeopleSofts, the Great Plains's, etc.). They're trying to implement something with an XBRL ledger in order to go in and take and tag some of the transactions.

The area that I've been working in primarily in the last couple of years has been the area of financial statements. I saw a few of you raise your hands to show that you recognized the statutory reporting, doing those blue books and putting data in the asset page and in the liability page. That's what I'm going to show you here this morning. In addition, about a year ago at this time, the Securities and Exchange Commission actually reached out and said, "Gee, maybe we should look at this whole area." They've been doing something for 20 years called "EDGAR," and we'll talk about that shortly. They said, "Well, maybe we should be looking at XBRL for filing." I'll talk a little about that.

I have some definitions for you. XML is a markup language that tags data so that it can be understood by any program on any computer platform. If any of you have set up a Web site or you've worked on the Web (Web services, HTML and things of that nature) where you're putting things on a screen and displaying it, you're using XML tags. If you've ever gone through part of the process of building a Web site or looking at somebody's Web site, that's what they've had to do.

Extensible reporting language, or XBRL, is a standard agreed-upon framework between companies and individuals that allows users to create exchange and data using the technology of software applications with XML. An example that Mike Willis from PricewaterhouseCoopers always gives in connection with these particular things is, how many of you this morning watched CNN, the news program, in your room before you came down here? Where did you watch it? You watched it on your TV. You didn't have to go to the source and sit in a studio to watch that. This is kind of what we're talking about with respect to the tagging of data with XBRL and XML. It's out there somewhere on a Web server or on your Web site, or it could be housed somewhere else. All of you could look at it while sitting at your notebook or in your hotel room or something like that. A good example of what we're trying to do is tag data, put it out there somewhere and have it accessible in several different locations using Web services. Those are a couple of key things with respect to the XBRL and XML.

The taxonomy that we use as a term in XBRL is a dictionary term defining the data elements. It's nothing more than a dictionary. Any element that you want, you put a definition with it. In addition to that definition—this is one of the things that really differentiates XBRL from XML—I can have several links. In addition to that single tag I put on a data element that would be the definition of it, I could actually put labels on it. So I could have a reference to a label that's in a presentation. That label could be in English. It could be something you use in two or three different presentations. It could be in a foreign language; it could be in French or Japanese or another language. You can have different labels for that same element that you have out there. You could put it in a format to do presentations, show that you can put definitions with it, put out calculations with it and actually reference it. If you've

got, for example, some of the things that we're doing with the U.S. GAAP taxonomies that we've built, we actually reference the FASB rules. If you're doing anything with statutory, you can reference the NAIC instructions. You could reference the Insurance Accounting and Statistical Association (IASA) textbooks. You've got a fairly robust system if you're talking about a taxonomy that gets built in the XBRL arena.

The instance file is kind of what Dean was talking about earlier with respect to his tables, because he actually has definitions of what's in that table with the data elements or the values that are associated with it. So in the XBRL arena here, we talked about an instance file, which is the database of facts that includes one or more of the XBRL elements. It has the data element. I usually refer to a "wastebasket," where I just throw all of these facts that have tags on them. Then when I start doing work again—Dean mentioned Excel or Word or something—I like to pull these things out of that wastebasket and put them in a report. It's very similar to what you might do if you go out to do a Google search. You'll search for a particular topic, a particular key or a particular element, and it brings up those things that are in the wastebasket and puts them in some order for you.

The style sheet is something that takes it that other step with respect to Word and Excel or some other tools that are out there. It's a form used for presenting the instance file (the database of facts) and putting it in a format. I don't know if any of you use PDF, but there are pieces of releases in the ADOBE-type things now so that you can put the XML and XBRL tags in an ADOBE file in the new products that they have, pull these out and work with them. It's a tool that's out there. Again, style sheets are for presentation.

I'll go through the history of XBRL fairly quickly. It was founded by AICPA in 1998, and it was primarily done by accountants. The one person who really pushed this forward and is sometimes considered the "father" of XBRL is Charlie Hoffman from the University of Washington, who was an accounting professor there. He saw what was happening in doing financial reports; working with financial reports; trying to compare across companies, industries and things like that and having these different spreadsheets or PDFs out there. People were copying data out of these spreadsheets to do more reports and even cut-and-paste things. What he said was, "Why don't we all put the same tags on our data elements? So cash is cash, bonds are bonds, preferred stock is preferred stock and things like that. Put similar tags on them and then make them the same across so that we can prepare and analyze them." Again, he was one of the key people who started XBRL and brought together the accounting firms, and in 1998 they put this group together. You can find more information about this nonprofit at www.xbrl.org. We had the last international meeting in Boston a couple of weeks ago, with over 21 countries represented from around the world.

What's happening in this particular arena is that we're releasing these taxonomies. The standards for the building of these taxonomies are from a set of specs that are

in the public domain. The taxonomies that get built and that are released usually end up in the public domain, particularly the three in the areas of U.S. Commercial and Industrial, U.S. Banking and Savings, and the U.S. Insurance GAAP. Those three were released March 7, 2005. The U.S. Federal Deposit Insurance Corporation has built theirs on Banking and Savings. Because of some of the call reports for banking, that's a quasi-type thing in the public domain, but if you're a vendor or somebody interested in working with call reports for the banking industry, that taxonomy can be made available for you.

I don't know if any of you have been involved with some of the work that's going on in the international arena with respect to a standard for accounting and universal sharing of data around the globe, but there is the International Financial Reporting Standards General Purpose (IFRS-GP) taxonomy that has been built with the International Accounting Standards Board. David Tweedie from the United Kingdom is chairing part of this. The International Association of Financial Planners (IAFP) is a member of one of the jurisdictions of XBRL and is participating in that with the European Union.

The XBRL international group has over 300 member organizations. In the United States, we have two working groups. There's the Adoption Working Group and the Domain Working Group. I'll talk more about those shortly. There are jurisdictions around the world that have been working with this and have participated in connection with XBRL and sharing it (see page 15, slide 2). There are a couple of others that are new. Italy has all of a sudden started to become interested in it. They had a conference in the last month or so. I saw in an e-mail the other day that Colombia is interested in it and trying to do some things in Latin America. It's kind of exploding; it has been passing on to other countries.

In the U.S. Domain Working Group, what have we been doing? We've been building taxonomies, as I mentioned, for the commercial and industrial and for banking. The investment/broker is one that we're working on right now, and that should be out in a review process sometime this summer. State governments are looking at trying to do something with respect to tagging data standards. The Insurance GAAP and Insurance Statutory (IGIS) is the one that worked on the insurance GAAP taxonomy that was released here on March 7. I was quite active with that. I'm co-chairman of the IGIS committee for the XBRL-US working group with a person from PricewaterhouseCoopers. We ended up working over the last six months to a year on this insurance GAAP, which was released March 7. I was mapping GAAP insurance and annual statements. I mapped one that you'll see here shortly with Allstate. I worked with Nationwide. I worked with United Fire and Casualty out of Cedar Rapids on the property-and-casualty side and mapped their income statement, balance sheet, cash flow and stockholders' equity. It has been a challenge.

We've been working on the mapping for GAAP. Because of my background and working with the Freedom Group, Eagle and now my Capricorn company, I've also

been doing some statutory NAIC work, trying to map a taxonomy to do the quarterly statement and the annual statement, primarily the financial pages in there. Again, we're making it a standard.

Let's talk a little about some of the players. In the education area, we've got the Insurance Accounting and Systems Administration (IASA). I don't know how many of you are familiar with that group, but their executive director has looked at this. We have a database out there called XFIRE, where if companies want to send their statutory data in, it will get tagged and put into a database so people can access some of the statutory database and compare companies. There are the insurance trade associations. For those of you with life companies, I've talked to the ACLI's accounting group a couple of times. We've got Alan Close from Northwestern Mutual, which is very interested in what's happening in this particular arena. There's also Cathy Ellwood from Nationwide, and I've been doing some work with ING. Barry Ward, who used to be with the Ohio Insurance Department, has expressed interest in this. There's also TIAA-CREF, which has my retirement money from the university. I sure want them to survive, so I keep talking to them about what's happening. Allstate, State Farm and some of the other companies like that are looking at this whole particular process. Because of the insurance accounting system, the trade associations and the involvement that I've had with the NAIC, we've gone through the education, and we've reviewed the XBRL taxonomies about which I've talked. On applications to financial reports for companies, Merrill Lynch is interested, Moody's is interested, Standard & Poors is interested and Morgan Stanley is interested—all of these are trying to go forward with some of the things that are happening in the XBRL arena.

As to the accounting firms, there are four of them, plus Grant Thornton. You've got PWC, KPMG, Deloitte & Touche and Ernst & Young. They're all out there. They're very key people in the XBRL organization. Software vendors and Microsoft have been players in this. There are several people providing tools not only for building taxonomies, but once the taxonomy is built, they have tools that will consume these particular taxonomies and create instance documents, spreadsheets, style sheets and things of that nature.

I'll talk a little now about ACORD. I went out and looked at some of ACORD's standards. I found a document, the ACORD Life Holding Reference, where they actually had several hundred elements tagged that they had put definitions with, and I was going to look at those and see if some of those couldn't be used in some of the things I was doing with statutory reporting.

The other thing I found with ACORD was short abbreviations. If I'm going to start building labels out there or putting tags on these things, I don't want these long things. I want something short. The XMLife Specification Guide has some standard abbreviations (see page 17, slide 1). You can standardize "accounts" as "ACCT," "actual" as "ACT" and so forth. Again, this is out there; it's something that ACORD has put together.

XBRL has been applied around the world. The Australian Tax Office does statutory reporting for banking and the property-and-casualty insurance industry. The Bank of Spain, the Dutch Tax and Water Authority and the European Union (EU) Commission have just put a big grant together to go forward with the EU countries trying to standardize on their financial reporting activities there. I've mentioned the International Financial Reporting Standards taxonomy. The Korean Stock Exchange and the South African Stock Exchange have put together a taxonomy for working and reporting in the stock exchange. There's also the Tokyo Stock Exchange and the SEC project that we'll talk about in a minute. U.K. Inland Revenue, if you pay company taxes over there, puts some tags on filing there. The last example is the U.S. Federal Financial Institutions Examination Council call reports.

Let's talk a little about the Electronic Data Gathering, Analysis and Retrieval system (EDGAR) filings. EDGAR is connected with the U.S. Securities and Exchange Commission and was started about 20 years ago. Originally it was just to collect those 10Ks, 10Qs—financial information. I went to the SEC electronically, and when it was collected originally, it was pretty much a flat file; it was a text file that had data in it. About 10 years ago they went to HTML and said, "Okay, you can put some tags in there, or you can do it somewhat like displaying it." Now they're beginning to look at using XBRL. The study of financial reporting, as I mentioned, took place in 2004, and there have been several things released with respect to public companies filing their 10Ks using our XBRL taxonomy (the commercial/industrial, banking or the insurance). If you want to learn more about this, there's a Web site, www.sec.gov/news/press/2005-12.htm.

For the SEC voluntary financial reporting, the filing started on April 4. I think at this point there have been about five companies that have participated in this voluntarily. One of them happens to be R. R. Donnelly, and another one is Bowne. Both of these are financial printers. Microsoft and one or two other companies have participated in the pilot. From the insurance industry, we've got Allstate, Nationwide, MetLife and AIG, who are sitting there kind of saying, "Do we want to be the first kid on the block?" They've backed off a little and said, "No, we don't want to be the first insurance company, but we are very interested in this." I tell a lot of people the reason they should be interested in this is that in the next year or two, there's a very good chance that this may be their requirement. If it ends up being the requirement, it's those people who have filed early on that who should have some say as to whether or not it is something that they want to see or to go forward with.

Here's a slide showing an instance document with some of the language in it (see page 18, slide 2). A lot of these things, as Dean mentioned earlier, you're not going to read. In other words, this is something that you don't want to look at, but if you want to go in, you can search for the names of these things and so forth. What you really want to see is from where something like this came. This is Allstate's balance sheet that they filed (see page 18, slide 3). It's on their Web site, and their total investments were \$103,081 for December 31, 2003. This was one of the

companies, as I said, that I used to actually test out the taxonomy.

The next slide (see page 19, slide 1) is a copy of a style sheet using a style sheet that's available from one of the tools that are out there. This is what their financial position would look like, and you see at the bottom the investment total. So, as I said, when you talk about XBRL, you've got the capabilities for building an instance document, which you saw had the data elements in it. It was based upon a taxonomy that was generated by our U.S. GAAP, which is out there in the public domain and which you can get off the XBRL Web site.

I want to talk a little about what has to be filed with the SEC filing. They want to know the name of the company. There is a Word document that goes with that electronic filing that has the instance document that's submitted and the data period for which it was done (see page 19, slide 2). This was done for fiscal year 2003 for the period ended December 31. The taxonomy that I used was the U.S. GAAP taxonomy for insurance that we released on February 28 or March 5. The contact information was me; I did that. The taxonomies that I used were two or three different tools. It has been kind of fun to work in this arena where we have an XBRL member at DecisionSoft, Fujitsu and UBmatrix, who make some of these tools available to you for a pilot, even just working with it, because they're a product that the companies want to get out into your hands.

Linkbases that I used were the label, presentation, calculation and some other tools. There's a software product called Rivet Software's Dragon Tag that facilitates taking the taxonomy and a spreadsheet bringing things back and forth. To create an instance document, you can use a little software tool that is available from Rivet, a company out of Denver, Colorado. You should see how some of these things work—the taxonomy location, instance location and the rendering location that I ended up doing on it.

If you want to do something in the statutory, this is the asset page per statutory (see page 20, slide 2). What I want to do is look at the common stock assets line. There's a number there: 262411251. I want to put a tag on that particular number. Let me explain a little about tagging in an XBRL. You have the little tag with the label "common stocks, monetary." You could have dates, strings and all sorts of ways of defining your data type. As far as currency, XBRL has the capability to convert U.S. dollars to euros, to yens and to different types of things, depending upon the currency you want to report in. As far as the language, I'm using English, but if I wanted to use French or Japanese or languages like that, I can go that way. "Labels" is the way that I'd want to display it. "Context" is the time period it's at (As Dean mentioned earlier, here's an instance of this one, which happened to be December 31, 2004, but I can put a different tag in there). Validation: I can validate calculations to formulas in my taxonomy.

Here (see page 21, slide 2), again, you get an idea of what the standard tag taxonomy would look like for this particular element that would attract you to a

common stock and what the instance document line looks like for that. Again, the format is generally angle brackets around things. There are a lot of ways that these things are done behind the scenes. In some cases, you don't even have to know about XBRL to get this done; you can work with your spreadsheets or Word documents. There, again, it's putting that into the instance document.

I tried to project benefits on it (see page 22, slide 1). I looked at Schedule S, Part 1, Section 1 on the statutory report, and I said, "There are some column headings out there. There are some subtotals and things like that. Let me go into the ACORD document that I mentioned before and see where some of this information might be with some standard tags that I could use. As I build my taxonomy for Schedule S, Part 1 or Schedule S, Part 5 or Schedule S, Part 6 out there, what tags can I use for that that are somewhere else in my taxonomy? Are there some standards out there?" Dean got me thinking about looking at some of those X tables that he has been talking about for some of the type reporting here, too.

Schedule S, Part 5 is a five-year exhibit of reinsurance-ceded business (see page 22, slide 2). I'm pulling some things from other places in the statement and trying to see from where some of those came. On the left is what would appear in Schedule S, Part 5. On the right are some of the places elsewhere in the statement from where those data elements could be pulled and used to complete that particular schedule. So again, we're trying to come up with some standard names, working in this particular arena.

What should we do next? We need to learn about the benefits. There are lower costs; they've got to be lower. If you tag an element once, cut and paste things from one report to another report to another report. If there's one way to key out there and you can use it in several different places, hopefully there are some lower costs on it.

There are better analytical capabilities. You know that people are going to take these annual reports that they get—they get the PDF—and they key it in or something like that. You can transpose numbers and things like that. So you're going to have better analytical capability.

What should you do? Learn about XBRL. Go to the Web site: www.xbrl.org. ACORD is the same way. Take a look at whether or not you want to participate in the SEC pilot project that I talked about. I'm certainly willing to offer any help on that. There's a conference coming up in Washington on July 20 at which the federal government will be speaking for part of the day. It's a free conference. They'll talk about things that are happening with respect to the federal government in the area of XBRL, and they'll talk about the pilot project on which the SEC people are working. They'll have some training in that arena of how you might do that.

Again, develop and/or use taxonomies internally. Depending upon your job position, you may not want to develop a taxonomy, but you can certainly use one

and extend it. You can participate in standardization activities in the ACORD organization, the XBRL organization or several of the other organizations that Dean mentioned here. You can support industry and regulatory applications, and look for applications for it. Just go out and find it. Take off with it.