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Technology and the Small-Company Actuary

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Summary: Actuaries at smaller insurance companies face many challenges, including limited resources, broad responsibility, and limited opportunities to interact with other actuaries. This session presents case studies on the use of technology to solve some of the problems commonly encountered by actuaries in smaller companies. The session focuses on practical solutions and ways to maximize productivity.

Mr. Jeffrey M. Robinson: This session was developed to help small-company actuaries surmount the many challenges described in the summary. I will provide a simple case study of how I use technology to get around these typical small-company situations. In the general session, Daniel Burrus defined many ways technology can be used to solve business problems.

In Mr. Burrus' terms, you can use technology "to make your destiny, to lift your own veil, to redefine the rules, get yourself a competitive advantage, all by doing more with less."

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I should mention that I have a small consulting practice primarily in the Northeast. I represent many small companies in the New York/New Jersey area. Several of these companies are New York subsidiaries of larger companies, established because of the more stringent New York rules. I am also a representative of Hawley Actuarial Software (HAS), a PC-based system. Although I'm often involved in systems jobs, I don't consider myself a real techie. It's usually my role to explain the technical side to the user or to explain the business need to the technicians. I wasn't really involved in the PC revolution until about a year-and-a-half ago. Essentially all I was doing with a PC prior to that was wordprocessing with a very simple software package. That was satisfying my needs at the time.

About a year-and-a-half ago, I decided that it was time to purchase a new PC. There were a few issues that drove me in that direction. One, all the new software packages required faster machines with larger storage capacities. I was very interested in getting onto Actuaries Online and doing more advanced word processing. Second, I needed a system that was sophisticated enough to enable me to perform demos for potential clients. And last, my wife has a sister living in Israel and she wanted the opportunity to communicate with her in an inexpensive way through e-mail.

So I spent some time doing research because I really didn't have much knowledge about PCs. One of the important things I found is that if you do research, you can get answers to most of your questions. Going from almost a zero knowledge base, I was able to find the PC I wanted. I decided to buy a portable DX 475, which at that time was a powerful machine. Today, it's rather small, which is an indication of how quickly technology changes.

When you go to buy a PC, make sure you look for something that matches the applications that you're going to do or think that you are going to do. This may seem obvious, but I'm not sure people really focus on this. Also, get the fastest and biggest storage unit you can find or afford because all the programs today require very large memory capacities.

As I mentioned earlier, I have a consulting practice which focuses on small companies. You may have noticed small companies are falling by the wayside very quickly. So I was looking for a way to develop my practice and expand my horizons. Also, I felt that it was important for me to keep pace with all the new regulations and other issues that impact our profession. Actuaries Online seemed like the tool to help me accomplish these goals.

So how did I get started using my new PC and Actuaries Online? Probably the most important way I learned was by trial and error. I also utilized CompuServe's

technical on-line support and the on-line support of my PC manufacturer, Gateway. Gateway has a great option, which I strongly recommend. They'll send back repaired or new parts for your PC by overnight mail. Even though I only used that service once, it's reassuring to know that I could get quick resolutions to any hardware problems I may have in the future.

Other ways that I received help were through the SOA's systems operators on Actuaries Online and through *CompuServe* magazine. I also found that the experienced members of Actuaries Online were willing to offer help in a very supportive and nonintimidating way. I learned how to download files and how to work with some of the tools that are in Actuaries Online through the advice of other members.

The first advantage I saw of Actuaries Online was its tremendous potential as a continuing education tool. If you spend one hour a day reading the general messages on Actuaries Online, you can keep up with the significant events that are happening in the insurance industry and the actuarial profession. Often the messages are short, can be read quickly and cover a large number of topics. I think there are between 1,500 and 2,000 people online. This provides the opportunity to get a good dialog going with other actuaries on a host of topics. The responses are almost on a real-time basis.

I also found that Actuaries Online was a powerful marketing tool. You can use the Advertise Online section as a way to advertise a product. For example, Doug Hawley, the owner of HAS Software, loaded his demos into the library so that people could easily download them. This was very advantageous to us because we have six or seven different modules, and it was just too much information to put on a demo diskette. We've had at least 200 accesses to those demos. This was also a benefit to potential clients who could download our products in private and get a good flavor for their potential, without getting a sales representative on their case right away.

You can also use Actuaries Online to advertise a particular area of expertise. I joined with another actuary to provide help on New York 4228 issues. So, instead of mailing all our announcements out, we mailed about half and posted an announcement on Actuaries Online. I had the opportunity to reach 1,500–2,000 actuaries in a very inexpensive, easy way.

I was also able to use Actuaries Online to gain name recognition. Although I go to quite a few meetings, I have a pretty local following, and as a consultant, it's important to get your name around.

Actuaries Online provides an opportunity to interact with other actuaries. Initially, I just read the messages that other people wrote to get a feel for how it was done. And then, although I took a very tenuous first step, I asked a question. At that point in time, I was working on funeral insurance policies. New Jersey had a new set of rules, and I was interested to see who else was dealing with this. I received an answer from an actuary whose company was doing a significant amount of work in this area and it proved to be very helpful.

I've been a consultant for about 27 years, and one of my areas of expertise is traditional insurance, which younger actuaries today don't know much about since they were raised in the interest-sensitive era. Clients often use older mortality tables and reserving techniques, but I had the expertise to answer questions that dealt with these topics. I found that by answering other people's questions, I didn't feel guilty asking my own questions. While I was in this process of answering and responding to messages online, people started to recognize my name and expertise.

Another benefit is that I made some new friends. Actuaries Online has a chat room, where you can have an interactive conversation with other actuaries. One of the people I had a connection with was from Farm Bureau Life in Des Moines, Iowa. Here I was a northeastern actuary with a suburban practice, and I was reaching out to some place beyond my dreams—Des Moines, Iowa. There were things he asked if I could do, and so this actuary became a new client. So I did something more with less; I developed a new client base by having the ability to get clients beyond my geographical area.

I had a hospitality booth set up for HAS at the October meeting in Boston. Many of the people that I had spoken to online came by to say hello, which gave me the opportunity to give them literature and talk about the system. I really felt that I was reaching a broader spectrum of the actuarial profession; I couldn't have done it in any other way.

Using Actuaries Online is also a very inexpensive tool. I pay \$30 a month in phone charges, and the actual on-line charges are rather small.

Actuaries Online has led me to do a host of things that I was not able to do before. I was able to get into this new technology which provided: a continuing education tool, a marketing tool (both for my products and me), the potential for making new friends, interaction with other actuaries, and quick responses to questions. In Mr. Burrus' terms, I used Actuaries Online to shape my destiny, lift my own veil, and redefine the rules. It gave me a competitive advantage in those areas which I had expertise by enabling me to reach out to people that could benefit from my skills. I

think Mr. Burrus really had the right idea. If you know what it is you'd like to do and if technology provides that advantage to you, then you've used it properly.

Tom McDonald is our next speaker. Tom is the regional vice president of marketing for Phoenix Mutual Reinsurance. He's a graduate of the University of Virginia, where he majored in business. He is a CLU, Chartered Financial Consultant (ChFC) and a Fellow of the Life Management Institute (FLMI). His experience includes managing the underwriting, reinsurance, operating, and information departments for several life insurance companies, group life insurers, and TPAs. Tom will be using his broad experience to tell us what actuaries should be doing to help their companies focus on the productive use of technology. He'll be giving us a low-tech presentation of a high-tech topic.

Mr. Tom McDonald: When Jeff asked me to participate in this session, I began to think about how technology impacts the small- and not-so-small-company actuary. Looking at what today's and tomorrow's technology has in store for us is far more than can adequately be covered in the limited time we have. What I'd like to talk about is a brief perspective on technology, and the impact it will have on you.

The technology age is upon us, and it's here to stay. The fate of many companies, today and those of the future, will be determined to a great extent by their use or nonuse of technology. The challenges presented by the utilization of technology will be as great as any test faced, determining the company's ability to grow and more importantly its ability to survive. As the actuary for a small company, you will be playing a very critical role in the direction your company takes.

Technology is not limited to computers, but it seems that's what usually comes to mind. The PC has become an integral part of performing daily tasks. We tend to take for granted the amount of work being achieved with these machines, and most people do not yet understand how they will help bring the world to our desks. The vast amount of information that you have now and will have access to will require that you gain a definite understanding of what information you need, where to get it, how to identify it, and how to make the best use of it for you as well as your company.

Every company in business today, regardless of its size and resources, will have to face the ever-increasing demands of competition and improved customer service. As a result, we're seeing more companies with someone designated as the "chief technology officer." Maybe the information systems people have learned something from the actuaries as far as job specialization!

Every company in business today, no matter how sophisticated their technology, will be lacking in some areas. If you recall in the early 1980s, moving from an XT to an AT was a major step up. If you think about the physical size of the ATs or the XTs and its specification—640K was a high-end machine! The pentium-based laptops today are significantly more powerful than many of the mainframes and mini-computers that we used then. An AT was 4 times faster than an XT, and today's pentium with a 133 megahertz chip is 66.5 times faster than an AT.

I know someone in Boston who is testing a Septium chip laptop. He says that it makes the pentium look painfully slow. So that should give you a pretty good idea of how things are progressing. The explosion of technological development just in the last year alone is an indication of how rapidly things change. It's unrealistic to think that all companies can keep pace with all these changes. Consider for a moment that most PC hardware has a usable life of about three years. By the time a company makes a decision on a particular system or network, installs the equipment, finishes testing and begins operating on it, the next generation has already been developed and released, and the present technology has already become outdated. There will always be an ongoing battle between having the sophisticated software that is necessary, not just to meet current needs, but to be able to address future needs, and having the hardware capable of running it. It's true that PCs have revolutionized our business. It's also true that PCs and the Internet are creating an even greater revolution. A PC-based local network with Internet connections will add two additional dimensions: voice and visual contact with people throughout the world. What may have been a limited opportunity to interact with other actuaries has now become almost unlimited.

Does anybody understand what the significance of February 14, 1996 was, other than being Valentine's Day? It marks the 50th birthday of the computer. This was discussed in an article published in *The Journal of the American Society of CLU & ChFC* in May 1996, titled "The Worldwide Web of Financial Gerontology." It leads, "On February 14, 1946. . . a group of engineers at the University of Pennsylvania unveiled the first general purpose electronic computer, the Electronic Numerical Integrator and Computer (ENIC). It measured 10 feet high, weighed 30 tons, and was able to add 5,000 numbers per second. Today, this technology is stored on a single chip weighing less than an ounce."

The demands of technology present difficult dilemmas for smaller and mid-sized companies. Unfortunately, cutting-edge technology, or even the technology to stay somewhat current, carries a very high price tag, and not all companies have been able to afford it. Some will pay the price in different ways than others. Either they're going to acquire technology and survive, or they will not acquire technology and they may disappear.

With today's environment of downsizing, hearing the phrase "bigger is better" may be out of place. However, as it relates to technology, it may be quite appropriate, especially its impact on the future of companies. Unlike the past, more mergers and acquisitions are taking place to gain technological advantages. Larger companies will have some advantages simply because of their size and resources. Because of this, smaller companies will be even more challenged to compete in an aggressive arena. Necessity will require you to become more creative in your thinking and methodologies, more innovative in product design and more competitive in pricing. You'll be put to the test in developing products to meet profitability goals in such a competitive world. Effective use of technology will assist you in overcoming these challenges.

The greatest challenge is how you choose to meet the technological demands of the future. Those decisions will, in part, help determine the course of your company's future. Look at the various aspects of your current day-to-day activities. How did you get to where you are today without technology? Something as simple as electronic funds transfer is relatively low tech now, but it wasn't always. Consider the many functions performed daily through technology that were once manual. Consider how these are taken for granted now because they're so routine. In a way, we're just emerging from the Guttenberg era of technology, and what we'll see in the future is no comparison to what we've seen in the past.

For example, on-line banking is a novelty now, but in the future will very likely be commonplace. Electronic mail will provide worldwide communications through the Internet. Many intercompany transactions will be done electronically, either by diskette, tapes, or computer to computer. As you implement these technologies, how will you address the hidden costs of training? How will you measure productivity? Do you have a disaster recovery plan in place? A major issue that we're all dealing with today is the year 2000 system changes.

The advancement of technology, unfortunately, has not been a gradual one. It progresses in quantum leaps, and it demands that we massively refocus our energies in developing better solutions to our business problems. Every aspect of your company's operation is affected by technology: marketing, product development, expense management, risk appraisal, administration. Everything that's done on a daily basis is influenced by technology. The key here is how to make the best use of it.

Companies use market research to determine what their markets and business should be. Although in some cases it's not always on target. Remember the Edsel? Remember what the airlines were doing a few years ago, when they thought they were in the travel business, providing not just air travel, but owning and operating

hotels? How many have since identified their business as that of transportation and divested themselves of noncore businesses? Insurance companies are doing the same thing. How about Mazda? Originally, Mazda had expected the average buyer of the Miata to be a young professional in his/her late 20s to early 30s, upwardly mobile, with two children. Results have shown the typical buyers today of the Miata are in their mid-50s and empty nesters. Market research is critical for a company. Effective research will help determine what the market is and what the needs are for that market. It may also identify the need to change market focus or, perhaps in more drastic cases, a need to change business focus.

In a 1995 survey by Tillinghast, company CEOs identified distribution as their major concern. Companies have identified new technology as a way to improve product distribution and dissemination of information. For the past few years, a major life company has been using a computer link-up in branch banks for the bank customer to access information directly from a product specialist at the life company. There's no person-to-person contact, but the individual walks into the branch bank and sits down at a PC and has direct on-line communication with a product specialist. E-mail, fax, voice mail, and teleconferencing are being used to facilitate getting information to agents. The Internet is rapidly becoming one of the fastest growing means of getting information to the consumer, as well as to the production source. At least one company already has a product designed specifically to be sold through the Internet. Two others have begun direct sales through the Internet and accept on-line payment of an initial premium by credit card. Perhaps as a small company, you may identify this as a niche that will ensure your success.

Even for traditional marketing, there's an issue near and dear to the illustration actuaries—point-of-sale product illustrations. The agent must have the means to present an alternative proposal to a prospective buyer using a laptop. You're the people who are responsible for ensuring the accuracy of the illustrations.

What about future issues? Without a doubt, one of the most significant factors affecting us will be the Internet. The Internet and rapid globalization of business will create many new opportunities as well as challenges. The fact that the World Wide Web exists means new marketing opportunities globally. It also means one language may not be sufficient. Companies are already starting to address the fact that they have to accommodate multiple languages, not just for the Internet but for daily, internal operations as well.

Once the business comes in the front door, what happens to it? More and more companies are looking at expert underwriting systems, not only for mainstream traditional business, but to more efficiently handle what has been considered niche markets. For example, companies in the payroll deduction market are using expert

underwriters as a means of handling the increase in volumes with greater efficiencies through technology. Greater efficiency means more competitive and better products.

With many companies, the entire new business process is being handled by a machine. In many cases, the application is entered into a system through imaging. The expert system searches for prior in-force business and orders underwriting requirements. A growing number of companies now require their vendors of services to provide electronic transfer of information; otherwise they don't do business with them. The application may be completely processed by machine, the policy issued, and the premium collected, all without traditional manual processes.

Let's take this just one step further. Picture a prospective buyer of your company's product sitting in front of a screen, accessing on-line information about your company and its products. After browsing and obtaining the information that they want, an application is completed on screen and is transmitted to the company electronically. Then the machine processing takes place and it's underwritten electronically. From the initial point of interest of the buyer, to the receipt of the policy and payment of the premiums, there is no human intervention. Is this a look at the future? That's a yes and no answer. The technology is here now; it just hasn't all been put together yet. Maybe this is the evolution of the paperless office that everybody speaks about.

By now you probably are asking yourself, how does this affect me as the company actuary? The answer is simple as well as complex. In overly simplistic terms, you, as the company actuary, have to be concerned with efficiency, cost management, ability to create products that are pushing profit margins to the absolute lowest limit. The complex part of this is how do you learn all you'll need to know, and how do you determine the best way for your company to meet the challenges of increasing competition and the need to be more productive and profitable?

In making these decisions, you may be faced with several options. One may be to determine if your company has the resources to remain operating as a stand-alone entity. Another may be to form an alliance or joint venture with another company. A third option may be to seek out a partner for a merger or acquisition. And a fourth option, possibly the most difficult to recognize and accept, may be the necessity to change the focus of your company's business.

Let's look at alliances and joint ventures for a minute. With all the debate over banks in the insurance business, I think we'd all agree that the banks have done a much better job of utilizing their technology for growth. Consider how banks have gathered and used information. They have exceptionally good data on their

customer base. They have the ability to identify various markets. They have the ability to identify the particular needs of that market. They have the ability to penetrate that market very effectively. The life insurance industry traditionally has taken very similar information about its customers and kept records on premium payments, policy dates, and changes. We've had the information available—we just haven't used it effectively. Banks have used the technology effectively. They also have the customer's allegiance. Insurance companies have the products. We'll see a quickening of the pace of insurance company/bank alliances in the future, and the race has already begun.

Your responsibility will be to help identify the methods best suited for your company. Capital limitations may mean that outsourcing administrative functions is more effective than keeping them in house. TPA services have been around for many years, and more companies are looking to them as a means of getting high-quality service at a lower cost than can be provided internally.

Do you continue to utilize a mainframe environment or do you move to a local network? More and more companies are moving to a network-based environment. This offers a high degree of flexibility and control of data management not available with the mainframe. Few companies have recognized the complexities involved in setting up a well-structured local network. Fewer still have internal resources to effectively address those needs. Adding the Internet, or more importantly for this discussion, the Intranet, injects an entirely different dimension to the degree of complexity. A new, very specialized industry is evolving for those people with not only the technical know-how for the networks, but also the ability to integrate Internet technology and build a system with an understanding of what the life insurance business is all about. The resources of most companies are such that they will not have the expertise to build truly effective networks such as this. Individuals with a combination of skills and expertise will be essential to ensure that you get the most out of your technology dollars.

I've mentioned the Internet and Intranet several times. Why are they relevant? It's simply this. With the explosion of information available on the Internet, we must know what's available, how to access it, and how to make the best use of it. We have Actuaries Online through the SOA. There's also Underwriters Online. Almost any industry publication that you pick up today has some article or multiple articles on how companies are using the Internet. The March 1996 issue of *Best's Review* had an article entitled, "Underwriters Should Go Site-Seeing on the Internet."

What was interesting about this was the vast wealth of information available not just for the underwriter, but also for the actuarial community. For example, you can access information from many governmental and regulatory sources that have a

direct bearing on your business, and what your particular job is. There was also an article in the December 1995 *Best's Review* entitled, "Tap Internet's Endless Supply of Information."

There's an incredible amount of information available to you now, and it will grow significantly in the future. From your desk, using a PC, you'll be able to access databases and mortality studies, assess the impact of specific medical tests on underwriting and how it affects your pricing assumptions. You'll be able to get information directly from many regulatory agencies. You may even see electronic product filings and an electronic review of filings by the agencies. No longer should the small-company actuary feel isolated or limited. You can have the world at your fingertips.

Now that you have all this information available, how do you identify what you want, what you need, and what to ignore? That by itself will be one of the greatest challenges with the overwhelming amount of information available. This is where an Intranet may come into play. An *intranet* is simply two things: it's a low-cost, highly effective method of communication within a firm, and it also provides low-cost access to existing databases.

So far the 1990s have brought the explosion of the Internet. *The Wall Street Journal* had an article in the November 7, 1995 issue, reporting that Intranets in the U.S. will quadruple from 1995 to 1996, and triple from 1996 to 1997. The Gartner Group, a consulting organization, expects more than 50% of large enterprises to have business critical enterprise-wide Intranets by 1998. You can see, it is growing quite a bit faster than the Internet. It's a specialized service and there are few that are truly qualified to provide it.

What does all this come down to? The information and technology age is here. It's going to create new challenges unparalleled in our industry. For some companies, it may mean survival. For others, it may mean their demise. Meeting those challenges will force you to look far into the future and traditional solutions will no longer be enough.

The Internet and Intranet have created availability of information on a worldwide scale. With it comes unlimited opportunities to access vast resources to assist you. You may have difficult decisions ahead. It's now time to start shaping the future.

This is and will be an interesting and exciting time. You, as the company actuary, have the privilege and burden of being at the forefront. I wish you all luck.

Mr. Robinson: Our next speaker is Carol Marler, Director of Actuarial Research in the Reinsurance Division of Transamerica Occidental Life, where she has been employed since 1989. Prior to joining Transamerica, she was with Beneficial Standard Life for 13 years. Carol is a graduate of the University of Washington in Seattle. She's a FSA and a MAAA. She will talk about how to use technology to keep up with the NAIC requirements.

Ms. Carol A. Marler: I was asked about a month ago to write an article for the Small Insurance Company Section newsletter on the subject of keeping up with the NAIC. My original thought was that I'd just do an outline of some resources that people can use and mention the fact that we consider regulatory issues one of the risks that can sometimes be managed through reinsurance and put in a blurb for Transamerica Reinsurance. As the article evolved, I found myself writing about Actuaries Online and what a good resource it was, particularly for the actuary at smaller insurance companies. You'll see that article in the next issue, but I did want to talk about some of the reasons why I think that Actuaries Online is a good resource to help you keep up with what's going on with the NAIC.

First of all, Actuaries Online gives you timely information. Donna Claire, for example, attended the recent NAIC meeting and posted daily summaries of the meeting. It was very easy to read through what she had posted and look for any issues that might be of concern to my company. I was able to highlight that information for my management at the time it was occurring, instead of waiting for our attorneys to do their review and distribute a summary.

The second benefit of Actuaries Online is that it's interactive. I read in a recent *Wall Street Journal* article a remark that there are no water coolers online. Let me assure you that's not true. If you are an actuary at a smaller company and you feel the need to hang out with some actuaries, go to the cyberchat section. We talk about things that we would talk about around the water cooler and you don't have to spend any more time there than you have available. But sometimes, it's nice to take a break from your problems and step back and chat with your friends.

Third, Actuaries Online can be very focused. For example, I have in my briefcase a printout of the latest segments of the statutory codification project. There was a posting on Actuaries Online that really went to the heart of the issue, where the commissioner's annuity reserve valuation method (CARVM) concept of the greatest present value was being applied as a generic principle.

Another point is that Actuaries Online is very flexible, and it lets you avoid the necessity of travel and having a formal position on a subject. It provides a forum for

the industry to talk over pending regulations and recommend alternatives to the NAIC. I think it will be a great advantage to us in the future.

I know that one of the concerns of actuaries in continuing education is that you have to go someplace for a meeting, take time away from the office, and incur the cost of flights, registration fees, and hotels. Wouldn't it be nice if we could accomplish that same goal online with the same sort of interactions, communications, and educational services that we get at these meetings, without ever having to leave our offices?

The Actuaries Online service is evolving. What we will see is that all of these services that allow us to network together will gradually evolve and merge into one service, where you use the pieces that you want. The CIA has been using the Internet in a list service concept, and the SOA has focused more on using CompuServe as a facility. I can see the benefits of having both options available, depending on what kind of communications you have and how structured you want to be in providing the information.

My final point, which Jeff had already pointed out, is that Actuaries Online is friendly. I was sharing a CompuServe ID with a friend and was getting tired of sending messages where I was stating my opinions and having them appear to be coming from my friend. So with a little help from Jeff, the system operator and the help command, I was able to determine how I could post messages that showed my name.

Mr. Robinson: Let's start off with some questions. Tom, you say you have a highly effective way of using technology to make your life easier when you travel. Can you tell us about that?

Mr. McDonald: I've never been one that liked to drag around a lot of luggage with me when I travel. I can put everything I need to conduct business on a day-to-day basis in one tote bag and that is all I take with me. What I carry with me is my laptop and a cellular phone. I don't carry a big briefcase or numerous papers, and that's probably been one of the greatest things that has helped me over the years. As we use e-mail more and have access to the Internet, we can file things electronically. It's much easier to do that than it is to create another piece of paper that you have to store.

One of the things that I have done over the past couple of years since we've moved to a local area network (LAN) is to get rid of paper files. I just don't keep them anymore. When I get e-mail messages, I don't print them out, instead I keep them

on the PC, so everything that I need to conduct business can be taken with me when I go out of the office.

Mr. Robinson: We had an interesting discussion with the panel last night about this subject. Tom carries one PC, and I carry a catalog case and about 17 other things. After we talked, I realized that all my work, including messages to my clients and addresses, are right in my PC. I just haven't been using it as a data bank and I should have, particularly when I travel. It's just impossible to carry all your files when you travel, especially if you're visiting several clients. Has anybody else been doing this? Does anybody else believe in a paperless society?

Mr. James N. Van Elsen: I run a small consulting firm in Des Moines. I have a laptop which contains my whole practice. I have all my profit studies and profit programs on my PC. If I forget something, I just copy it from the network in my office, so I am never really away from my office.

Mr. Robinson: Do you carry paper files to go with it?

Mr. Van Elsen: Usually just client documents that I haven't reduced electronically.

Mr. Robinson: Again, you don't burden yourself with 17 things. If you have to travel frequently and you have to carry a great deal of luggage, it makes your traveling that much more difficult. If you can travel lightly, it makes it easier and more enjoyable. The thing is that you truly must utilize the information on your PC.

Another question that we received relates to what people are doing to keep up with regulatory issues. Carol will discuss this.

Ms. Marler: Keeping up with all the new regulations is definitely a challenge. If it had been up to me, regulatory issues would never have been a subject that I was responsible for. But it landed in my lap and I haven't been able to find anybody who wants to take it off my hands. Since it is very reading-intensive, it's helpful if you can compare notes with somebody else. In particular, Actuaries Online is a very helpful source. Many times people online can alert you to important issues in the regulations. In addition, the NAIC has an Internet home page, which is the source from which I downloaded all the codification papers.

Mr. Robinson: Also, as the regulations are being developed, they are discussed on Actuaries Online. You can alter some of them by expressing your opinion and getting involved when they're exposed for comment. Even as a small-company actuary, you can be familiar with the regulations prior to their approval. You can

prepare more than in the past to implement these regulations. For example, illustrations regulations are something that received a great deal of exposure online.

Ms. Marler: Yes, a significant number of questions were posted about the illustration regulation, and the intent, I believe, is to assemble those questions and get some responses to help clarify the issues. Many good points were raised in this manner that had not been considered by the people who drafted the regulation.

Mr. Robinson: This question is for Tom. How is technology being addressed by the reinsurance companies to help the small-company actuary?

Mr. McDonald: Well, there's a number of things that we see going on. Probably the biggest by far is the e-mail connection between the reinsurer and the direct writers. We have this type of connection with a number of our client companies. Beyond that, we're looking at two situations right now with client companies where our underwriters will be able to dial in directly to the direct writer's underwriting system, underwrite the case, and enter the underwriting decision directly into their system. This only works with companies that have a very high degree of automation. Beyond that, in the future we'll see reinsurance companies developing databases for mortality studies, what the impact would be from various underwriting changes, and so forth. This would be a benefit to the small- and mid-sized companies, especially as far as providing information to the actuaries to help them with product pricing.

Ms. Marler: Tom, do you foresee the evolution of a virtual policy, where an electronic policy is communicated to the individual insured and he or she never actually receives the piece of paper?

Mr. McDonald: That's certainly within the realm of possibilities.

Mr. Robinson: Is anybody using the type of system where an application is completed through the Internet and the premium is collected through an electronic fund transfer? Tom mentioned that system in his presentation.

Mr. McDonald: I know of a couple of companies that, for some time, have had the enrollment process on a laptop, including an electronic signature pad to capture the signature of the individual. At one company, once the enrollment process is completed, the information is put on a diskette and it's sent to the parent company for uploading to the main system. There's another company that uploads the information from the PC directly into the system for processing. They take all of the initial application information and put it into an automated system which virtually underwrites the application, issues the policy, collects the premium, and pays

commissions by electronic fund transfer. There's no human processing involved. There is human review, which I think will be necessary with any expert underwriting system approach. But essentially what they've done is as close to a paperless environment for this line of business as possible.

Mr. Robinson: Are there any people who think a paperless society is good for the company? How many would rather see paper? I think you need a combination of both, but you have to develop your awareness so that you can get the things that you need out of your PC and the on-line services. When I see a useful message, I file it electronically and print it out, but the paper can get overwhelming.

The next question is, What software packages do small companies use for policy master record valuation? In-house or other? How are unique features handled? Manually or through program changes?

This is an area that I've had experience with, and there are several PC packages available for valuation. Price Waterhouse has one. PolySystems has another. Some of them are quite up-to-date. Hawley Actuarial Software, the firm I'm affiliated with, doesn't do valuations, but we'll provide you with all the factors that you need. Is anybody else using another package that I haven't mentioned?

Ms. Marler: I'd like to mention home-grown systems. Several years ago, the chief actuary at one of the mutuals was talking about his company's PC-based valuation system, which didn't have the mainframe infrastructure to deal with. The whole administration was actually done on the PC.

When converting to a PC system, you have to make sure you have enough power to do everything you need to do and that your products are capable of being administered that way. Similarly, our structured settlement department at Transamerica does all of its computer processing and has for several years through a PC network rather than using the mainframe.

Mr. Robinson: One feature of e-mail that I started to take advantage of was the ability to upload and download data files. Doug Hawley is in California, and I'm in New Jersey. Sometimes when we test the system and discover problems, he puts in corrections and uploads the whole program to me. Sometimes I deal with subcontractors, and I sometimes have to get information to them quickly. With the ability to zip and unzip files, you can transfer data very quickly, and it's cheaper than overnight mail. Downloading and uploading is a tremendous advantage if you're involved in a time-critical job. I would imagine that you could use it for valuation purposes, too. Is anybody else doing this?

Mr. Wayland M. Hubbart: WM Life/Empire Life Insurance Companies is an annuity company, which is a subsidiary of a bank. We download certain basic values from our mainframe into an ASCII file and have APL programs that do the CARVM. These APL programs produce other ASCII files, which are read into a Paradox database. The Paradox database is then used to generate all our reports. I'm considering changing over to Access, Microsoft's database, because the bank has adopted Access as its database standard.

Mr. Robinson: How do you like Paradox?

Mr. Hubbart: I've been pleased with Paradox. I haven't bothered to upgrade it for a long time, however, because I anticipated having to move to Access eventually.

Mr. Robinson: Who else is using a database here? What are you using?

From the Floor: Paradox.

Mr. Robinson: Does it do the job you need it to do?

From the Floor: In general, yes. I think it's still a little limited in certain areas.

Mr. Robinson: What kind of applications are you using it for?

From the Floor: Just for study-type purchases.

Mr. William A. Zehner: *Actuarial Digest* has a software addition, which is an excellent source for available programs. There are probably many vendors here that you can also make contact with. I'd recommend a PC-based software package because it gives you more control. We had a problem ten years ago at the company I was with when we sent information out for valuation. We found out that the wrong tape was sent out and we had to send it out again. If you do your valuation in-house, you just do another run.

Ms. Marler: There are also some risks in decentralizing. Getting rid of a separate data processing department and letting the user department do the jobs can create other problems. We're going through that process right now, and people are using tools without fully understanding their power. This puts you in a position of doing some things that professionals might not have done and could have warned you if they had been involved.

I've seen some wonderful databases in my time. We're using Access at my company along with our main database, which is stored on an Oracle Server. We're

using Access for queries against the database, and it can be very powerful, especially if you have relational-type data.

Mr. Zehner: If your products have unique features, it is worthwhile to address these upfront, if you're purchasing a system from a vendor. This way you can get an answer right away as to whether your needs can be met.

Ms. Marler: Sometimes a vendor will give you a work-around for those unique features, even if the system doesn't handle them exactly. The vendor may have something that will be close enough that you can use in the system.

Mr. Robinson: When you're having a vendor in and you're going to buy a package or have one developed, doing your homework upfront is important. Communicating to the vendor as early as possible what your unique features are will save time in the long run. This way the vendor gets a sense of what it will take to put this system in place, and you get an idea of the reality of whether the system can handle it or not. I've been involved in many situations where the vendor says something can be done and then never does it. If you get a fixed quote from a vendor, he or she has to do it and as quickly as possible.

Mr. Zehner: One thing to remember when taking a valuation in-house is to make sure the data are validated before running the valuation.

Mr. Robinson: Another issue involving in-house valuations on a PC is discipline in scheduling jobs. When we were working with mainframe departments, they had discipline in running production jobs. Actuaries are good at writing programs, but running them is a whole other issue. Does anybody else agree that this is a problem?

Ms. Marler: I'll second that it's a problem. In fact, we probably could do one of those case studies just based on situations that I have seen in my career.

Mr. McDonald: I think there's a real tension between the traditional use of information services (IS) people and moving jobs to user departments. My experience with IS departments has been that you end up with a \$5,000 project for something that you know really only takes a small amount of time. But sometimes you don't have the resources to get the job done yourself.

Mr. Robinson: There is a followup workshop where we'll discuss further what systems are being used by each company. This is the kind of forum where we can really help each other.

The next question is, what kind of actuarial software is available to calculate values to validate our own systems for pricing and cash-flow testing? There are PC systems out there that can be used to validate your in-house systems. Examples are HAS, Tillinghast's TAS, Chalke's PTS, and PolySystems.

The next question is asking for creative ways to recycle outdated hardware. The Society's Foundation is providing programs for schools. I believe there are some companies that have arrangements with Harvard.

Ms. Marler: A couple of other possibilities for donations exist. Your public library may accept donations. In fact, in Charlotte, North Carolina they have something called Charlotte's Web, where you can go to the public library and get onto the Internet. They have very low-end machines because they're merely servers to the Web. Also, there are some handicapped organizations that will accept donations of computers for people who are disabled and could make use of them to improve their quality of life.

From The Floor: How do we as actuaries keep up with all the changes in the industry?

Mr. Robinson: You have to pick your areas carefully and utilize the things you think will help you; you can't do everything.

Mr. Zehner: We can see this is happening from a regulatory view as well. Ten years ago we didn't have cash-flow testing. Now we have cash-flow testing, and dynamic solvency testing is probably going to be around the corner. Guideline GGG and Guideline XXX are very complicated and they're requiring PCs. We're requiring financial reports faster. I think as time goes on you will see more complicated products and more requirements from the regulators.

Mr. McDonald: In the past, I've seen many home-grown systems. Every actuary could create his or her own pricing system or valuation system on the fly, and the systems could keep getting adapted to accommodate changes. The key challenge we face is finding the discipline so that these systems are accessible to others. Actuaries are used to doing things themselves but the next person usually isn't able to use it.

Mr. Robinson: That's true. That's the advantage of vendors. I don't know how the regulators can check some of these data. There's no way for anybody to do it without a program that works very quickly. I don't know if we're getting into a situation where the ability to work online quickly is causing the regulation to be out there.

Ms. Marler: I think sometimes we are delivering products that nobody wants or prohibiting products that people want.