

**Report
of the
Society of Actuaries
Technology
Survey Subcommittee**

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Table of Contents

Introduction	3
Executive Summary	4
Analysis	7
Section 1-Company Information	7
Table 1-Location of Companies	7
Table 2-Total Face Amount of Life Insurance In-Force	7
Table 3-Type of Life Insurance In-Force	8
Table 4-Primary Line of Business	8
Section 2-Mortality	9
Table 5-Industry Mortality Studies in which Companies Participate	9
Table 6-How Often Mortality Studies are Performed	9
Table 7-Base Expected Mortality	10
Table 8-Ways Companies Perform A/E Mortality Studies	11
Table 9-Reasons for not Performing a Study Using a Particular Factor	12
Table 10-Plans to Perform Studies Using Previously Listed Factors within 5 years	13
Table 11-Companies Performing Mortality Studies by Cause of Death	13
Table 12-Pricing Software Used	14
Table 13-Reserving Software Used	14
Table 14-Rating Improvement in Company Capability to Perform Mortality Studies due to Technology	15
Table 15-Rating of Satisfaction with Technology Pertaining to Mortality Studies	16
Table 16-Correlation between Two Satisfaction Questions Pertaining to Mortality	17
Section 3-Underwriting	18
Table 17-Number of Underwriters	18
Table 18-Number of full-time Medical Directors	19
Table 19-Number of part-time Medical Directors	19
Table 20-Average Size Face Amount of Application	20
Table 21-Number of Applications per Year	20
Table 22-Primary Distribution Systems	21
Table 23-Other Distribution Systems	21
Table 24-Companies with Underwriters Working Remotely	22
Table 25-Sources from which Companies Accept Electronic Applications	22
Table 26-Companies Accepting Electronic Signatures	23
Table 27-Amount of Application Information Permanently Stored Electronically	24
Table 28-Format for Permanently Stored Application Information	24
Table 29-Electronic Ordering/Receiving (all companies)	25
Table 30-Electronic Ordering/Receiving (large companies)	25
Table 31-Company Use of Teleunderwriting	26
Table 32-Person Performing Teleunderwriting Calling Functions	27
Table 33-Who Analyzes the Information After it is Gathered from the Teleunderwriting Call?	27
Table 34-Uses of Teleunderwriting	28
Table 35-Type of Teleunderwriting Unit	29
Table 36-Method of Capturing Information	29
Table 37-Has Company Compared Teleunderwriting Results to Traditional Underwriting Results?	29

Section 3-Underwriting (continued)

Table 38-Teleunderwriting vs. Traditional Underwriting_____	30
Table 39-Companies with Imaging Systems_____	30
Table 40-Image Prior to Underwriting and Use that in Underwriting Process?_____	31
Table 41-Image After Underwriting for Storage Purposes?_____	31
Table 42-Do Underwriters have Internet Access at their Individual Workstations?_____	32
Table 43-Uses of Internet by Underwriters_____	32
Table 44-Do you have an Expert System?_____	33
Table 45-Satisfaction with Expert System_____	34
Table 46-Methods of Submitting Facultative Applications to Reinsurers_____	35
Table 47-Technology Used for Other Communications with Reinsurers_____	36
Table 48-Technology Used to Communicate Electronically with Field Force and Home Office_____	36
Table 49-How much has Technology Improved Your Company's Capability to Perform Risk Selection?_____	37
Table 50-Satisfaction with Company's Implementation of Technology Pertaining to Risk Selection_____	38
Table 51-Correlation Between Two Satisfaction Questions Pertaining to Risk Selection_____	39
 Appendix 1-Companies Participating in Technology Survey_____	 40

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Introduction

The attached report presents the results of a survey whose purpose was to explore the various uses of technology by life insurance companies. The survey was conducted by the Technology Survey Subcommittee of the Society of Actuaries Life Insurance Mortality and Underwriting Survey Committee.

The survey was made available on the SoA web site (www.soa.org) in October of 2001. Forty-one (41) companies, including one reinsurer, responded to the survey. A list of the companies who participated in the survey can be found at the end of the report in Appendix 1. The survey was comprised of three different sections. It should be noted that not all companies responded to questions in each section or to every question in a particular section.

Percentage results are shown based on the total number of companies who responded to each specific question, unless otherwise noted. Due to rounding and because many questions asked respondents to “check all that apply,” percentages contained in the survey results may not add to 100%.

The Subcommittee would like to thank all of the companies that took the time to complete the survey. We would also like to thank the staff of the Society of Actuaries, in particular Korrel Crawford and Jack Luff, for their invaluable help in facilitating our meetings to develop the survey and analyze the results, and for arranging to have the survey posted on the SoA web site. Finally, we would like to thank Dale Chudnow, an actuarial student at Drake University, for analyzing the results and drafting the report.

The survey responses clearly indicate that technological advances are being utilized by more and more companies in the insurance industry, and that many of the companies currently lacking in this technology are not far behind. We hope that you find the results of the survey both interesting and helpful. Your feedback on this survey and the survey process in general in the form of comments and suggestions is appreciated and will be used to drive future improvements. Please send any comments to Jack Luff at the Society of Actuaries.

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Executive Summary

The primary focus of this survey was the impact of technology on mortality studies and underwriting. It was written by actuaries and underwriters, and was to be completed by actuaries and underwriters. It was not about gigabits, platforms or bandwidth. Your IT people would have looked at this and said it was not even about technology.

BUT, this survey should help you do your job. For example, have you ever:

- Had to fight to get resources to improve your mortality study system?
- Wondered if other companies are doing more detailed mortality studies?
- Wanted to do mortality studies by distribution system or impairments?
- Been pressured by your field force or vendors to start using the newest underwriting technology, such as expert systems, imaging, teleunderwriting, electronic applications, and electronic signatures?
- Wanted to get Internet access for your underwriters?
- Wanted to explore underwriters working at remote locations?
- Had to do 5-year planning and guess where the industry is going?
- Been dissatisfied with your IT support?
- Wanted the SoA to reprioritize where they spend their mortality study efforts?

Hopefully, the results of this survey will provide some useful information.

In October of 2001, the insurance industry was surveyed on the various ways technology is used by life insurance companies. Forty-one (41) insurance companies responded to the survey. Some of the highlights of the survey results are shown below. Note that any percentages shown in the Executive Summary are based on the number of companies who responded to a particular question, not the total of 41 companies participating in the overall survey. Six (6) of the respondents do not have life insurance, but their responses were often useful and have been retained in the results. You may use the results of this survey as quantitative proof as to whether or not an apparent “fad” is actually spreading through the industry.

Primarily life insurance companies located in the United States completed this survey. For most respondents, the majority of life insurance in-force is “individual,” and the primary line of business is “direct.” For the purposes of this survey, “large companies” are those companies with a total face amount of life insurance in-force of \$50 billion or greater.

Mortality Technology Results:

- Almost all respondents perform their own mortality studies.
- Those performing mortality studies tend to perform them annually using an in-house application.

- Large companies tend to participate in industry mortality studies, with Bragg and SoA Individual Life getting the most participation.
- The two most common assumptions used as base expected mortality were SoA '75-80 and Pricing Assumptions, each used by more than half of the respondents.
- A/E mortality studies are typically done by age, duration, smoker/non-smoker, product, gender, policy face amount, and underwriting class.
- No companies reported doing mortality studies on build, blood pressure, lab values, family history, impairment at issue, hazardous avocation/occupation, or aviation. The main reason large companies do not do studies using these factors is that they do not store this data. Many companies do plan to do studies using some of the previously listed factors within five years.
- Industry-wide, there is an average level of perceived improvement in mortality studies as a result of technology. Similarly, there is an average level of satisfaction with company implementation of technology pertaining to mortality studies.

Underwriting Technology Results:

- Almost all companies had at least one full or part-time medical director, with no respondent having more than a total of six.
- Very few companies have underwriters working remotely. Those that do tend to use imaging to accommodate them.
- Less than half of the respondents accept electronic applications and none deliver the policy electronically. Many plan to accept them electronically within five years, and just under half plan to deliver them electronically within five years. A few companies do accept electronic signatures. Those that do tend to use a signature pad.
- Most companies electronically order and receive Lab, MIB, and MVR requirements. Similarly, many companies plan to receive paramedical, EKG, and medical exams electronically within five years.
- Less than half of the respondents use teleunderwriting. Very few companies have compared teleunderwriting results to traditional underwriting results.
- Approximately half of the respondents have an imaging system.
- Nearly all underwriters have Internet access at their individual workstations.

- Very few respondents use an expert system. Of those that do, a reinsurer developed most. Most companies with an expert system are large companies, and they tend to be satisfied with it.
- Industry-wide, there is an average level of perceived improvement in company capability to perform risk selection as a result of technology. Similarly, there is an average level of satisfaction with company implementation of technology pertaining to risk selection.

Conclusions :

While almost every responding Life Insurance Company does some type of mortality study that can be used for pricing or product development, none do detailed studies by underwriting values such as build, blood pressure, etc. While some companies plan to attempt these types of studies in the next five years, the availability of the raw data and IT resources may pose major hurdles. The fact that none of the 14 large companies (\$50 billion or more life insurance face amount in-force) currently does these raises some global questions for the Society of Actuaries and the life insurance industry as a whole.

Many types of technology can be found in the different companies' underwriting processes, such as teleunderwriting, electronic ordering/receiving of underwriting requirements, imaging, and electronic applications. None of these, however, are overwhelmingly prevalent. Several hot topics, such as remote underwriting and expert systems, are not very common.

Analysis

Note: Due to rounding and because many questions allowed respondents to “check all that apply,” percentages contained in the survey results may not add up to 100%. Much of the analysis has been segmented to show both the results of all companies and the results of just large companies.

Italicized items represent direct or paraphrased quotes from the respondents. Beginning in Table 3, the “large companies” refer to those who answered they have a total face amount of life insurance in-force of \$50 billion or greater.

Section 1 - Company Information

Question 1:

The survey asked the companies where they are located. Forty-one (41) companies responded. Table 1 below shows that most of the responding companies are located in the United States, while just a few are located in Canada.

**Table 1
Location of the Companies**

Response	Percentage of Respondents
United States	95%
Canada	5%

Question 2:

The survey asked for the total face amount of each company’s life insurance in-force. It may be interesting to note the 6 companies in Table 2 below without life insurance. The responses from these companies did not indicate a unique pattern, and therefore have been included throughout the survey results.

**Table 2
Total Face Amount of Life Insurance In-Force**

Response	Percentage of Respondents	Number of Respondents (out of 41)
\$50 billion+	34%	14
\$14-\$49.9 billion	17%	7
\$5.5-\$13.9 billion	17%	7
<\$5.5 billion	17%	7
No life insurance	15%	6

The 34% (14 companies) with a total face amount of life insurance in-force of \$50 billion or greater will be considered the “large companies” for the remainder of the survey analysis.

Question 3:

The survey asked if the majority of each company's total life insurance in-force was individual or group. As shown in Table 3 below, most companies, whether large or small, responded that they primarily have individual life insurance in-force.

**Table 3
Type of Life Insurance In-Force**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 38)
Individual	87%	33
Group	13%	5
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 14)
Individual	93%	13
Group	7%	1

Question 4:

The survey asked for each company's primary line of business. Nearly every company selected "direct," but one company chose "reinsurer" and one company chose "both" as shown in Table 4.

**Table 4
Primary Line of Business**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 38)
Direct	95%	36
Reinsurance	3%	1
Both	3%	1
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 14)
Direct	86%	12
Reinsurance	7%	1
Both	7%	1

Section 2 - Mortality

Question 1:

The survey asked if each company participated in industry mortality studies. Out of 38 respondents, 35% (12) participate in industry mortality studies. Of these 12, 11 are large companies. The survey asked each company to select all the mortality studies in which they participate. The Bragg Studies and the SoA Individual Life Studies were, by far, the most widely used. See Table 5 below for the complete results for all companies. Respondents often selected multiple studies, so the percentages do not sum to 100%.

Table 5
Industry Mortality Studies in which Companies Participate

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 12)
Bragg	50%	6
SoA Individual Life	42%	5
SoA FIRST	8%	1
Older Age/Large Amount Reinsurance Study	8%	1
Impairment Study Capture System	8%	1
CIA Mortality Study	8%	1

Questions 2 & 3:

The survey asked if each company performs their own mortality studies. Thirty-two (32) of 35 companies, including all of the large companies, responded that they perform their own mortality studies. Most respondents perform mortality studies annually. See Table 6 for the responses to this question. Some companies selected multiple answers.

Table 6
How Often Mortality Studies are Performed

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 32)
Annually	75%	24
Ad hoc	31%	10
Less frequently	6%	2
Every two years	3%	1
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
Annually	92%	12
Ad hoc	28%	5
Every two years	8%	1
Less frequently	0%	0

Question 4:

The survey asked what software each company uses to perform mortality studies. Thirty (30) of 31 respondents, including all 13 large companies, use an in-house application. The other respondent outsources to Wise, Mitchell, and Associates. None use a vendor package.

Question 5:

Companies were then asked what they use as their base expected mortality when reviewing experience. Respondents often marked more than one answer. The SoA '75-80 is still used a fair amount of the time despite the more recent SoA '90-95 being available. See Table 7 for the total number of companies using each base. Any answer that was only given once is included as "Other." These bases include: 1980 CSO, Co. GAAP Assumptions, 2001 VBT, SoA '65-70, CIA '82-88, CIA '86-92, and a company's own experience table. For the large companies, "Other" also includes Bragg and SoA '90-95.

**Table 7
Base Expected Mortality**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 31)
SoA '75-80	55%	17
Pricing Assumptions	52%	16
SoA '90-95	13%	4
Bragg	6%	2
Other	19%	6
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
Pricing Assumptions	77%	10
SoA '75-80	54%	7
Other	54%	7

Question 6:

The survey explored the many ways companies perform Actual to Expected (A/E) mortality studies. Nearly every respondent marked age, duration, smoker/non-smoker, and gender. Product, policy face amount, and underwriting class received considerable mention as well. This holds true for both large and small companies as is displayed in Table 8 below. No companies checked underwriting values for build, blood pressure, lab values, family history, impairment at issue, hazardous avocation/occupation, or aviation. One company checked duration since last smoked.

**Table 8
Ways Companies Perform A/E Mortality Studies**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 31)
Age	97%	30
Duration	97%	30
Smoker/Non-Smoker	94%	29
Gender	87%	27
Product	81%	25
Policy Face Amount	77%	24
Underwriting Class	74%	23
Distribution System	29%	9
Exams	26%	8
Agents	6%	2
Duration Since Last Smoked	3%	1
Build	0%	0
Blood Pressure	0%	0
Lab Values	0%	0
Family History	0%	0
Impairment at Issue	0%	0
Hazardous Avocation/Occupation	0%	0
Aviation	0%	0
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
Age	100%	13
Duration	100%	13
Smoker/Non-Smoker	100%	13
Underwriting Class	92%	12
Product	92%	12
Gender	92%	12
Policy Face Amount	92%	12
Exams	38%	5
Distribution System	23%	3
Duration Since Last Smoked	8%	1
Agents	0%	0
All Others	0%	0

Question 7:

The survey asked companies for reasons they *don't* do a particular study for “no” answers to the previous question. It should be noted that the choices, “Don’t store data” and “Don’t have I.T. Resources” may overlap (not storing data may be the result of not having the I.T. resources to do so). This should be taken into consideration when looking at the results in Table 9 below.

Table 9
Reason for not doing a study using a particular factor (All Companies):

Factor	Don't Store Data	Store Data, but can't access	Don't have I.T. resources	Insufficient exposures	N/A
Age	0	0	0	0	2
Duration	0	0	1	0	2
Smoker/Non-Smoker	1	0	0	0	1
Underwriting class	0	0	1	6	1
Product	0	1	2	2	1
Distribution System	3	0	1	5	12
Exam	8	1	3	6	2
Policy Face Amount	0	1	1	2	5
Gender	0	1	0	1	3
Agent	1	4	4	16	2
Underwriting Values for:					
Build	17	1	3	6	3
Blood Pressure	17	1	2	6	3
Duration since last smoked	17	2	1	6	3
Lab Values	17	2	3	6	3
Family History	19	1	1	6	3
Impairment at Issue	17	0	4	6	3
Hazardous Avocation/Occupation	18	0	2	7	3
Aviation	17	0	2	8	3
Other	0	0	0	3	3
31 total respondents					

For large companies, the primary reason for not doing a particular study is “don’t store data.” Several large companies also cited “insufficient exposures” as a reason, while “store, but can’t access” and “don’t have I.T. resources” were not selected very often.

Question 8:

The survey asked companies if they plan to be able to do new mortality experience studies by the factors listed in the previous two questions within the next 5 years. While a majority of respondents say they plan to do so, what will actually happen is likely more dependent on overcoming the barriers listed in the previous question. For the specific factors companies plan to do mortality experience studies by in 5 years, “underwriting values” was listed most, but none of the choices were listed by more than 6 respondents (out of 19 responses). See Table 10.

Table 10
Whether or Not Companies Plan to Perform Studies with Previously Listed Factors in 5 Years

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 31)
Yes	61%	19
No	39%	12
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
Yes	77%	10
No	23%	3

Question 9:

The survey inquired if companies perform mortality studies by cause of death for any of the exposure classes listed in previous questions. As shown in Table 11, 5 of the 6 companies who responded with “yes” are large companies, whereas only one of the smaller companies performs such a study.

Table 11
Companies Performing Mortality Studies by Cause of Death for Previously Listed Exposure Classes

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 30)
Yes	20%	6
No	80%	24
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 12)
Yes	42%	5
No	58%	7

Question 10:

The survey asked for additional mortality studies that companies don’t retain data for, but would like to perform. Nine companies cited studies such as: exam type, term conversions, lab results, cause of death, build, blood pressure, driving record, and other underwriting values.

Question 11:

The survey explored whether companies use the same software for pricing as they do for experience studies. Twelve (12) of 13 large companies use different software, while *all* 17 smaller companies who responded use different software. See Table 12 for a breakdown of what pricing software companies use. “Other” answers for all companies include Axis, MoSes, and consulting actuaries. Answers for “Other” under large companies include ALFA, Axis, MoSes, PTS, and in-house.

Table 12
Pricing Software Used by Companies

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 26)
TAS	42%	11
Internal/In-House	23%	6
PTS	15%	4
ALFA	8%	2
Other	12%	3
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 12)
TAS	42%	5
In-House	25%	3
Other	33%	4

Question 12:

Similarly, companies were asked if they use the same software for reserving that they use for mortality studies. As shown in Table 13 below, most companies use different software for reserving. In-house systems and ArcVal are the most widely used by both large and small companies. Some companies listed more than one type of software, so percentages do not add to 100%. Included in “Other” are UltraVal & Life Systems, Cyberlife, and PTS.

Table 13
Reserving Software Used by Companies

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 24)
Internal/Homegrown/In-House	42%	10
ArcVal	38%	8
Triton	13%	3
Polysystems	8%	2
Other	13%	3
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 12)
ArcVal	50%	6
In-House	33%	4
Triton	17%	2
Other	8%	1

Question 13:

The survey concluded the section on mortality with two questions regarding satisfaction. The results of each question are given in Tables 14 and 15 below, with some comments following each table. Correlations between the two tables then conclude the analysis of Section 2.

Companies were asked how much technology has improved their capability to perform mortality studies. A scale of 1-5 was given (1=no improvement, 5=very significant improvement).

Table 14
Rating Improvement in Company Capability to Perform Mortality Studies due to Technology

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 30)
1	7%	2
2	20%	6
3	27%	8
4	27%	8
5	20%	6
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
1	8%	1
2	23%	3
3	31%	4
4	23%	3
5	15%	2

Comments pertaining to the previous question, with the size of the company in parentheses, include:

- “Technology has not held us back, it’s more getting the overall resources to do the studies.” - (large)
- “Technology has reduced the time it takes to complete the studies.” – (small)
- “We had no formal studies until four years ago. We currently do studies on a quarterly basis, using FoxPro database software.” – (large)
- “Technology has improved hardware capacity.” – (small)
- “We now use PC-based applications instead of mainframe.” – (large)

Question 14:

The survey asked respondents to rate their level of satisfaction with their company's implementation of technology as it pertains to mortality studies (1=very dissatisfied, 5=extremely satisfied).

Table 15
Rating of Satisfaction with Company's Implementation of Technology Pertaining to Mortality Studies

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 33)
1	12%	4
2	24%	8
3	33%	11
4	18%	6
5	12%	4
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
1	8%	1
2	23%	3
3	31%	4
4	23%	3
5	15%	2

Comments pertaining to the previous question, with the size of the company in parentheses, include:

- “Mortality studies are not a driver of any technological advances.”* – (large)
- “I would like to purchase the ARCVAl (reserving software) experience studies module, but can't due to \$\$\$ restrictions.”* – (small)
- “Systems resources has been the biggest stumbling block to making use of new technology.”* – (large)

From these two questions, it can be seen that most companies, independent of size, are not overly satisfied with their company’s capabilities or implementation of technology pertaining to mortality studies. The distribution of responses from large companies for the two questions, while identical, did not result from each company giving the same response. Table 16 below shows the correlation between responses from the two questions. Only 3 respondents answered just the second question and have not been included in this table.

Table 16
Correlation between Two Satisfaction Questions Pertaining to Mortality

Responses (all companies)	Percentage of Respondents	Number of Respondents (out of 30)
1,3	7%	2
2,1	7%	2
2,2	10%	3
2,3	3%	1
3,1	3%	1
3,2	10%	3
3,3	13%	4
4,2	3%	1
4,3	10%	3
4,4	13%	4
5,4	7%	2
5,5	13%	4
Responses (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
1,3	8%	1
2,2	16%	2
2,3	8%	1
3,1	8%	1
3,2	8%	1
3,3	16%	2
4,4	23%	3
5,5	16%	2

It is apparent that the majority of companies answered the two questions closely. Only 4 companies changed their rating by more than 1 rating point. For large companies, 9 out of 13 respondents answered the same for both questions. For smaller companies, 10 out of 17 respondents were less satisfied with their company’s implementation of technology.

Section 3 - Underwriting

Question 1:

The final section of the survey began with respondents being asked to give more information regarding their company's characteristics. Respondents were asked to provide the number of underwriters, number of full-time medical directors, number of part-time/consultant medical directors, average size face amount of application, and number of applications per year.

Companies were asked for their specific number of underwriters. Table 17 below groups the responses into 4 ranges. The majority of the respondents have less than 30 underwriters, while two companies have over 100 underwriters. The highest response was 400 underwriters (this reply was double-checked for validity). It may be interesting to note that even though "less than 10" underwriters received the most responses (14) from "all companies," none of the "large companies" gave this response.

Table 17
Number of Underwriters

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 35)
Less than 10	40%	14
10 to 29	29%	10
30 to 49	14%	5
50 to 99	11%	4
100+	6%	2
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
10 to 29	31%	4
30 to 49	31%	4
50 to 99	23%	3
100+	15%	2

The survey asked companies for their total number of full-time medical directors. While 21 companies do not have a full-time medical director, only two of these are large companies. One company had six full-time medical directors. Note that all five companies with two medical directors are large companies. See Table 18 below.

Table 18
Number of Full-Time Medical Directors

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 35)
0	60%	21
1	14%	5
2	14%	5
3+	12%	4
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
0	15%	2
1	23%	3
2	38%	5
3+	23%	3

The survey asked companies for the number of part-time medical directors they employ. Most companies, both large and small, tend to have 1 part-time medical director. This is displayed in Table 19 below. No companies have more than four part-time medical directors, and no large companies employ more than three.

Table 19
Number of Part-Time Medical Directors

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 33)
0	21%	7
1	58%	19
2	12%	4
3+	9%	3
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 11)
0	36%	4
1	45%	5
2	9%	1
3	9%	1

Two small companies responded with the interesting combination of no full-time medical directors and no part-time medical directors. Every other company employed at least one medical director of some kind. No companies had more than six total medical directors. One company had six full-time and no part-time, while one company had three of each.

Companies were then asked to state their average size face amount of application. One company’s response of “\$1.9 million” was excluded because it was the ir facultative underwriting average. See Table 20 for the remaining responses.

Table 20
Average Size Face Amount of Application

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 32)
<\$50,000	13%	4
\$50,000-\$99,999	31%	10
\$100,000-\$499,999	50%	16
>\$499,999	6%	2
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 11)
<\$100,000	18%	2
= \$100,000	27%	3
\$100,001-\$300,000	36%	4
\$300,001-\$500,000	18%	2

The survey asked each company for their number of applications per year. Responses have been grouped into 3 categories for all companies, with an extra breakdown added for large companies. The largest response was a large company with 1 million applications per year. While the majority of all respondents have 50,000 or fewer applications per year, 16 of these 19 companies are small companies. See Table 21 below.

Table 21
Number of Applications Per Year

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 32)
<50,001	59%	19
50,001-100,000	22%	7
100,001 to 200,000	12%	4
200,001+	6%	2
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
<50,001	23%	3
50,001 to 100,000	31%	4
100,001 to 200,000	31%	4
200,001+	15%	2

Question 2:

The survey inquired as to each company's primary distribution system. As shown below in Table 22, career agent is by far the most widely employed method by large companies, while small companies use various distribution systems. Responses included in "Other" are direct response, modified career, Broker General Agent, funeral director/bank agent, direct mail/TV, and multi-line exclusive sales representatives.

**Table 22
Primary Distribution Systems**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 33)
Career Agent	67%	22
Broker	12%	4
Other	21%	7
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 12)
Career Agent	92%	11
Broker	8%	1

The survey followed up on the previous question by exploring what other distribution systems each company uses. Respondents were instructed to mark all answers that applied. Brokers and Personal Producing General Agents (PPGA)/ Managing General Agents (MGA) dominated the responses for both large and small companies for this question. See Table 23 below for the complete results. Responses for "Other" include "direct response" for all companies. Responses of "Other" for large companies include "career agent, Internet, worksite, and National Accounts."

**Table 23
Other Distribution Systems**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 22)
Broker	59%	13
PPGA/MGA	59%	13
Internet	23%	5
Worksite	23%	5
Other	5%	1
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 6)
Broker	83%	5
PPGA/MGA	67%	4
Other	67%	4

Question 3:

The survey asked if companies had underwriters working remotely. While there is considered to be a lot of talk regarding this becoming popular in the industry, it is obvious from Table 24 below that implementation has been extremely limited thus far. Just four companies (2 large and 2 small) have any underwriters working remotely. The small companies have 1 and 2 underwriters working remotely, while the large companies have 1 and 5 underwriters working remotely. When asked what technology was used to accommodate underwriters working remotely, two respondents mentioned imaging, while the other two did not respond.

Table 24
Companies with Underwriters Working Remotely

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 35)
Yes	11%	4
No	89%	31
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
Yes	15%	2
No	85%	11

Question 4:

The survey explored whether or not companies accept electronic applications and, if so, from what sources. Care must be used when analyzing the data in this question, because there is not a homogeneous definition for electronic applications.¹ Less than half of the respondents accept (what they believe to be) electronic applications, but of those that do, most accept them via the agent. A few respondents gave multiple sources, so percentages do not add up to 100%. Responses for “Other” include “client companies, phone vendor, and only annuity electronic applications accepted.”

Table 25
Sources from which Companies Accept Electronic Applications

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 35)
Yes, Via Agent	34%	12
Yes, Internet Direct	6%	2
Yes, Other	9%	3
Do not Accept Them	60%	21
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
Yes, Via Agent	46%	6
Yes, Via Client Company	8%	1
Do not Accept Them	54%	7

¹ The survey did not define “electronic applications,” leaving judgment to each respondent. There are multiple ways of interpreting exactly what an electronic application is, so it is unlikely that each respondent approached this question the same way.

Of the companies that currently do not accept electronic applications, 76% (16 of 21), plan to accept them in the next 5 years.² As stated earlier, there is often a difference between what companies say they plan to do, and what available resources allow them to do. Four of the 7 large companies that do not currently accept electronic applications plan to do so in the next 5 years.

Question 5:

The survey asked respondents a follow-up question to see if any of their companies deliver the policy electronically. No respondents currently deliver the policy electronically, but 42% (11 of 26) of all companies plan to do so within the next 5 years. Five of the 11 are large companies.

Question 6:

Staying with an electronics theme, the survey asked if companies accept electronic signatures. Those that do were asked to describe when and how they accept them. Those that do not accept electronic signatures were asked what obstacles prevent them from doing so. The responses are shown in Table 26 below.

Table 26
Companies Accepting Electronic Signatures

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 33)
Accept Electronic Signatures	24%	8
Do Not Accept Electronic Signatures	76%	25
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 12)
Accept Electronic Signatures	25%	3
Do Not Accept Electronic Signatures	75%	9

For the 8 companies that accept electronic signatures, this is done most often using a signature pad at the time the application is written. For the 25 companies not accepting electronic signatures, the primary obstacles preventing them from doing so are “I.T. resources, legal concerns, and consumer acceptance.”

² It should be noted that two respondents who answered ‘yes’ to currently accepting electronic applications, chose to answer the question as to whether or not they planned to do so in the next five years. This question was directed to those who do not currently accept electronic applications, so it is likely that they instead interpreted the question to be referring to the various ways they do or do not accept electronic applications. Their two responses have been omitted from the numbers in this analysis.

Question 7:

The survey inquired how much, if any, application information companies permanently store electronically. Those answering “some” were then asked what information they do store. From Table 27 below, it is apparent that most companies permanently store at least some of the application information electronically. For those respondents answering “some,” most store just basic policy data.

Table 27
Amount of Application Information Permanently Stored Electronically

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 33)
All	39%	13
Some	42%	14
None	18%	6
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
All	38%	5
Some	54%	7
None	8%	1

Those that store “all” or “some” were then asked in what format the application information is stored. See Table 28 for results. The “Other” response was a company that uses a viewable-only method that cannot be searched or used to do studies.

Table 28
Format for Permanently Stored Application Information

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 27)
Imaging	52%	14
EDI/Data Entry	44%	12
Other	4%	1
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 11)
Imaging	45%	5
EDI/Data Entry	45%	5
Other	9%	1

Question 8:

Companies were then asked to fill out a self-explanatory chart concerning ordering and receiving various items electronically. Results for all companies and large companies can be found in Tables 29 and 30, respectively.

Table 29
(All Companies): 35 Respondents

Information	Order Electronically	Receive Electronically	In 5 Years, Order Electronically	In 5 Years, Receive Electronically
APS	17 respondents	9	10	14
EKG/Treadmill	15	3	11	18
Inspection Reports	20	12	7	12
Lab	19	24	8	6
MIB	27	27	1	1
MVR	26	19	3	7
Paramedical	17	5	11	20
Medical Exam	16	4	8	18

Table 30
(Large Companies): 13 Respondents

Information	Order Electronically	Receive Electronically	In 5 Years, Order Electronically	In 5 Years, Receive Electronically
APS	8 respondents	5	3	2
EKG/Treadmill	7	2	3	7
Inspection Reports	10	6	1	3
Lab	8	11	2	2
MIB	11	11	0	0
MVR	11	8	0	1
Paramedical	9	4	2	6
Medical Exam	8	3	2	6

A number of companies plan to receive medical exams, paramedical exams, and EKG/Treadmills electronically in the near future.

There appear to be three main drivers for companies to want to order and receive more requirements electronically.

1) Company methods are becoming more electronic. For example, there is more use of imaging, and consequently more interest in receiving documents such as exams, EKGs, etc. electronically.

2) There is a consolidation of requirement vendors, and companies are generally dealing with fewer vendors. As a result, it is easier to establish electronic connections with a smaller group.

3) Company Home Offices are taking over tasks, such as exam ordering, that used to be handled by agents. The intent is to have agents focus on selling. Electronic ordering/receiving of requirements can be handled far better from the centralized location.

Cost and improved efficiency were identified as reasons for these items, as was improved time service.

Question 9:

The next few questions deal with the concept of teleunderwriting. As stated on the survey, teleunderwriting is a general term that is applied differently in different company environments. The common facet is using the telephone to contact the proposed insured directly. The survey first simply asked each company if they use teleunderwriting. Those who responded “no” were asked to skip the next 7 questions. See Table 31 for the results.

**Table 31
Company Use of Teleunderwriting**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 34)
Use Teleunderwriting	47%	16
Do not use Teleunderwriting	53%	18
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 12)
Use Teleunderwriting	50%	6
Do not use Teleunderwriting	50%	6

The fact that about half of the respondents use teleunderwriting is a somewhat surprisingly low figure. It is generally believed that most companies use the telephone to contact the proposed insured directly. It is feasible that some respondents did not understand exactly what teleunderwriting is, and answered incorrectly.

Question 10:

The survey asked each company (that uses teleunderwriting) to select who performs their teleunderwriting calling functions. As shown in Table 32 below, half of all companies use a third party vendor, while half of large companies use an administrative associate. The reader should be cautioned when doing his or her own analysis of this data that all questions pertaining to topics within teleunderwriting have an extremely small sample size.

**Table 32
Teleunderwriting Calling Functions are Performed By:**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 16)
3rd Party or Vendor	50%	8
Administrative Associate	38%	6
Underwriter	12%	2
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 6)
Administrative Associate	50%	3
3rd Party or Vendor	33%	2
Underwriter	17%	1

Question 11:

The survey further inquired as to whom analyzes the information after it is obtained from the teleunderwriting call. As presented in Table 33, the case underwriter is most commonly employed for such a task.

**Table 33
Who Analyzes the Information After it is Gathered from the Teleunderwriting Call?**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 16)
Case Underwriter	75%	12
Jet Underwriter	12%	2
Combination	12%	2
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 6)
Case Underwriter	83%	5
Combination	17%	1

Question 12:

Companies using teleunderwriting were then asked what they use teleunderwriting to do. Respondents were asked to mark all the responses that applied to them, so percentages do not add up to 100%. See Table 34 for the results. Responses of “Other” include “complete application,” and “gather information and let producer focus on selling.”

**Table 34
Uses of Teleunderwriting**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 16)
Replace Inspection Reports	69%	11
Supplement Info. Provided By Other Sources	69%	11
Clarify Info. Provided By Other Sources	63%	10
Replace/Reduce Attending Physicians Statements	63%	10
Replace Paramedical or Part 2 Medical Questionnaires	50%	8
Other	13%	2
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 6)
Replace Inspection Reports	100%	6
Supplement Info. Provided By Other Sources	83%	5
Replace/Reduce Attending Physicians Statements	83%	5
Clarify Info. Provided By Other Sources	50%	3
Replace Paramedical or Part 2 Medical Questionnaires	50%	3

The interesting aspect of these results is the high percentage of respondents who use teleunderwriting to supplement information provided by other sources. This is likely done for expense reasons; yet, we shall soon see that these same companies have not compared to see if teleunderwriting is truly helping to lower expenses (see question 15).

Question 13:

The survey asked those companies that use teleunderwriting what type of teleunderwriting unit they have. Nearly half of respondents report their teleunderwriting unit is a third party or vendor. This correlates closely with the responses found in Table 32 above (see page 27). See Table 35 below.

Table 35
Type of Teleunderwriting Unit

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 16)
Third Party or Vendor	44%	7
Stand Alone Unit w/ its Own Management Staff	25%	4
Part of a Traditional Underwriting Unit	25%	4
Administrative Associate	6%	1
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 6)
Stand Alone Unit w/ its Own Management Staff	50%	3
Third Party or Vendor	33%	2
Part of a Traditional Underwriting Unit	17%	1

Question 14:

Continuing with teleunderwriting, the survey asked how information is captured. As shown in Table 36 below, responses were fairly evenly split between “PC-based or online scripted” and “paper script.” No respondents have information fed directly into an underwriting screening tool or expert system.

Table 36
Method of Capturing Information

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 16)
PC-Based or Online Scripted	56%	9
Paper Script	44%	7
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 6)
PC-Based or Online Scripted	67%	4
Paper Script	33%	2

Question 15:

As alluded to earlier, the survey asked companies that use teleunderwriting if they have compared teleunderwriting results with traditional underwriting results. As shown in Table 37, just 4 companies (1 large, 3 small) have done comparisons.

Table 37
Has Company Compared Teleunderwriting Results to Traditional Underwriting Results?

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 16)
Yes	25%	4
No	75%	12

The four respondents who answered “yes” to these comparisons were asked to rate “cycle time, expenses, placement ratio, and mortality” using teleunderwriting opposed to traditional underwriting. Results can be found in Table 38. Only one company responded for the “mortality” category.

Table 38

Measures	Better	Same	Worse	Not Measured
Cycle Time	3	1	0	0
Expenses	2	0	2	0
Placement Ratio	0	0	0	4
Mortality	1	0	0	0

With such a small sample size, few if any conclusions can be drawn about the comparisons between teleunderwriting and traditional underwriting. Conversely, the small sample size emphasizes that many companies are using teleunderwriting techniques without actually knowing if cycle time, expenses, placement ratio, or mortality are improving as a result. The survey indicates that companies are either not checking to see if they are achieving the goals for which teleunderwriting was implemented in the first place, or it is too early in the process for credible results.

Question 16:

The survey shifted topics and regained all of the respondents that skipped the teleunderwriting section. The survey asked if companies have an imaging system. As shown in Table 39 below, about half of the respondents use such a system.

**Table 39
Companies With Imaging Systems**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 35)
Yes, Developed by Outside Vendor	31%	11
Yes, Developed in House	20%	7
No Imaging System	49%	17
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
Yes, Developed by Outside Vendor	38%	5
Yes, Developed in House	15%	2
No Imaging System	46%	6

Those who use an imaging system developed by an outside vendor were asked for the name of the outside vendor. The most common response was “FileNet.” Both “AWD” and “Sterling” received mention as well.

Of those that currently do not do imaging, 65% (11 of 17) say they plan to do so in the next 5 years. Four (4) of the 11 companies are large companies. This is another case where a conflict may exist between what a company wants and what resources will allow.

Questions 17 & 18:

In retrospect, the design of the survey at this point should have instructed respondents without imaging systems to skip the next two questions (since both assume the use of imaging). Only the responses of those companies with imaging systems are included in the following two tables. Tables 40 and 41 display *when* companies image. Table 40 shows companies that image prior to underwriting and use that in the underwriting process, while Table 41 shows companies that image after underwriting for storage purposes.

Table 40
Image Prior to Underwriting and Use that in Underwriting Process?

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 18)
Yes	61%	11
No	39%	7
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 7)
Yes	57%	4
No	43%	3

One company that responded earlier that they do not have an imaging system, answered “yes” to imaging after underwriting for storage purposes. This response has been omitted from the results. While Tables 40 and 41 show nearly identical results, this is coincidental as only 5 companies (2 large) responded “yes” for both questions. One company responded “no” for both questions.

Table 41
Image After Underwriting for Storage Purposes?

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 17)
Yes	65%	11
No	35%	6
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 7)
Yes	57%	4
No	43%	3

Question 19:

The survey asked each company if their underwriters have Internet access at their individual workstations. For the one company that answered “some,” 80% of their underwriters have Internet access. See Table 42 for the complete results.

Table 42
Do Underwriters have Internet Access at their Individual Workstations?

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 35)
All	91%	32
Some	3%	1
None, but Will within 5 Years	6%	2
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
All	92%	12
None, but Will within 5 Years	8%	1

These numbers are a very strong indication that Internet access has become a necessity for underwriters in the 21st century. The only two respondents who say their underwriters do not currently have Internet access both say they will within 5 years.

Question 20:

The survey asked what underwriters at each company use the Internet for. Respondents were instructed to “check all that apply” so percentages do not add up to 100%. Responses for “other” were “getting insurance quotes,” “requirement status,” and “drugs.” See Table 43 for complete results.

Table 43
Uses of Internet by Underwriters

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 33)
Medical Research	88%	29
Education	73%	24
Communication	64%	21
Underwriting Guidelines	42%	14
Ordering Requirements	27%	9
Other	9%	3
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 12)
Medical Research	92%	11
Education	75%	9
Communication	58%	7
Ordering Requirements	25%	3
Underwriting Guidelines	8%	1
Getting Insurance Quotes	8%	1
Requirement Status	8%	1

It is apparent that medical research, education, and communication are the primary uses of the Internet for underwriters, regardless of company size.

Questions 21 & 22:

The survey asked if companies use an expert system. Furthermore, the survey asked those using an expert system to mark who developed it. Companies without an expert system were also asked if they planned to use one within the next five years. Table 44 displays the results.

Table 44
Do you have an Expert System?

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 35)
Yes, Developed by Reinsurer	17%	6
Yes, Developed In-House	6%	2
Yes, Developed by Vendor	6%	2
No, but Plan to within 5 Years	6%	2
Don't Have Expert System or Plans to Get One	66%	23
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
Yes, Developed by Reinsurer	31%	4
Yes, Developed by Vendor	15%	2
Don't Have Expert System or Plans to Get One	54%	7

From these results, it is interesting to note that large companies account for 75% of companies using an expert system. Just 2 respondents from small companies use an expert system, with two more planning to do so within five years. While the survey did not ask *why* companies do not use an expert system, it is reasonable to surmise from this data that a lack of resources contributes to very few small companies using an expert system.

Question 23:

Although the sample size (8) was very small, the survey asked those who use an expert system what percentage of their total cases are processed through the system³.

- 7 of 8 process at least 90% of their total cases through the expert system
- 5 of 8 process 100% of their cases through the expert system

The survey asked those same 8 respondents for what percentage of the cases processed does the expert system make the final underwriting decision.

- 5 of 8 have the expert system make the final decision between 20% and 50% of the time
- One makes the decision more than 50% of the time, and two make the decision less than 20% of the time.

The survey asked the 8 respondents if decisions are limited by age, amount, and/or rating class.

- 6 of 8 say decisions are limited by age, amount, and/or rating class

The survey asked the 8 respondents if they can subsequently override the expert system's final decision.

- 7 of 8 can override the expert system's decision.

The survey asked if companies monitor the expert system to ensure it complies with their current underwriting guidelines.

- All 7 respondents monitor the system
- 6 of 7 update the expert system as needed, the other updates annually.

To conclude the subsection on expert systems, the survey asked companies to rate their satisfaction with the results of their expert system. Results are displayed in Table 45 below (1=very dissatisfied and 5=extremely satisfied).

Table 45
Satisfaction with Expert System

Response	Percentage of Respondents	Number of Respondents (out of 8)
1	0%	0
2	0%	0
3	50%	4
4	25%	2
5	25%	2

The distribution of answers obviously demonstrates a decent amount of satisfaction with expert systems. The reader should be cautioned to be aware of the small sample size when drawing conclusions from this data.

³ It should be noted that the term "processed" may not have the same meaning to all respondents.

Question 24:

The survey regained the rest of the respondents when it asked in what ways companies submit facultative applications to reinsurers. Results can be found in Table 46 below. Companies were instructed to “check all that apply,” so percentages do not sum to 100%.

**Table 46
Methods of Submitting Facultative Applications to Reinsurers**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 35)
Regular Mail/Express Mail	77%	23
Fax	60%	18
E-mail	17%	5
Electronic System Developed In-House	13%	4
Electronic System Developed by Reinsurer	7%	2
Electronic System Developed by Vendor	3%	1
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 12)
Regular Mail/Express Mail	83%	10
Fax	42%	5
Electronic System Developed In-House	25%	3
E-mail	17%	2
Electronic System Developed by Reinsurer	17%	2

Regular mail, express mail, and faxes are the predominantly utilized methods of submitting facultative applications to reinsurers. Over one-third use some electronic system or e-mail. Company size does not appear to have a large impact on the method chosen.

Question 25:

The survey asked for other technology used for communications with reinsurers. Respondents were instructed to “check all that apply,” so percentages do not add up to 100%. Again, company size does not appear to have impacted this question significantly. An electronic system developed in-house, faxes, and E-mail were marked by a majority of both large and small companies. See Table 47 for a summary of the data.

**Table 47
Technology Used for Other Communications with Reinsurers**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 34)
Electronic System Developed In-House	94%	32
Fax	85%	29
E-mail	74%	25
Regular Mail/Express Mail	12%	4
Electronic System Developed by Reinsurer	9%	3
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 12)
Electronic System Developed In-House	92%	11
Fax	75%	9
E-mail	58%	7
Electronic System Developed by Reinsurer	25%	3

Question 26:

The survey further inquired as to the technology used by each company to communicate electronically with its field force and Home Office. “Intranet” dominates the responses for both large and small companies. Companies were instructed to check all that apply. This explains why nearly half of all companies, including 58% of large companies, selected “don’t communicate electronically.” This response was always given in conjunction with at least one other response, indicating that those companies only communicate electronically with portions of their field force or Home Office.

**Table 48
Technology Used to Communicate Electronically with Field Force and Home Office**

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 33)
Intranet	97%	32
Extranet	36%	12
Internet	3%	1
E-mail	3%	1
Don't Communicate Electronically	48%	16
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 12)
Intranet	92%	11
Extranet	33%	4
Don't Communicate Electronically	58%	7

Question 27:

The survey concluded with two questions searching for satisfaction levels concerning technology and risk selection. Results for each question are shown in Tables 49 and 50, with correlations found in Table 51. The first question asked how much technology has improved each company's capability to perform risk selection. Respondents were asked to mark an answer from 1 to 5 (1=no improvement, 5=very significant improvement).

Table 49
How Much has Technology Improved Your Company's Capability to Perform Risk Selection?

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 34)
1	0%	0
2	21%	7
3	41%	14
4	29%	10
5	9%	3
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
1	0%	0
2	31%	4
3	31%	4
4	31%	4
5	8%	1

Neither large nor small companies appear to have a strong opinion on this topic. The “average” responses (2,3,4) were selected by all but three companies. This indicates that companies generally feel technology has allowed for some improvement to their company's capability to perform risk selection, but not a significant improvement. Comments concerning this question include:

“We have limited technology, so it provides limited value.” – (large company)

“Developed a jet issue system in our administration system which screens our smaller applications.” – (small company)

“Only in limited areas, not for the full production process.” – (large company)

“Our system facilitates multiple area access at one time and no missing/lost files. It does not enhance risk selection.” – (small company)

Question 28:

Finally, the survey asked respondents to rate their satisfaction with their company's implementation of technology pertaining to risk selection (1=very dissatisfied, 5=extremely satisfied).

Table 50
Level of Satisfaction with Company's Implementation of Technology Pertaining to Risk Selection

Response (all companies)	Percentage of Respondents	Number of Respondents (out of 35)
1	3%	1
2	31%	11
3	43%	15
4	23%	8
5	0%	0
Response (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
1	0%	0
2	23%	3
3	54%	7
4	23%	3
5	0%	0

While the most frequent response to this question (3) shows a generally “average” level of satisfaction, it is interesting to note that *no* respondents selected choice 5 for “extremely satisfied.” This indicates that respondents are expecting more from technology, and are not content with what little improvement they might have seen. Some comments pertaining to this question include:

“Limited implementation of new technology.” – (large company)

“Still a long way to go with regards to imaging and communication.” – (small company)

“We just began using a teleunderwriting process. New technology will be used in this process, but it is too early to comment on satisfaction of implementation.” – (large company)

“Don’t have a lot of technology yet, but plan on expanding in the future.” – (small company)

“Teleunderwriting pilot program started in January 2002, with imaging system being started soon.” – (small company)

The following table shows correlations between responses to the two questions. The one respondent that did not answer both questions has been excluded from Table 51.

Table 51
Correlation Between Two Satisfaction Questions Pertaining to Risk Selection

Responses (all companies)	Percentage of Respondents	Number of Respondents (out of 34)
2,2	15%	5
2,3	6%	2
3,1	3%	1
3,2	12%	4
3,3	26%	9
4,2	6%	2
4,3	9%	3
4,4	15%	5
5,4	9%	3
Responses (large companies)	Percentage of Respondents	Number of Respondents (out of 13)
2,2	23%	3
2,3	8%	1
3,3	31%	4
4,3	15%	2
4,4	15%	2
5,4	8%	1

A majority of companies (20 of 35) responded “3” (average) for at least one of the two questions. For large companies, 69% of the respondents answered the same for both questions. The other 31% only varied by one degree. For smaller companies, 48% of the respondents replied the same and another 48% replied that they were less satisfied with their company’s implementation of technology (with two responses being 2 degrees worse). This indicates that, within the industry as a whole, satisfaction with technology pertaining to risk selection leaves room for improvement, especially for smaller companies.

Thank you for taking the time to read this survey analysis.

Appendix 1

Companies Who Participated in the SoA Technology Survey

Aegon Special Markets Group-Baltimore
Aid Association for Lutherans
Allstate Financial
American Family Life Insurance Company
AmerUs Life Insurance Company
BMA
CUNA Mutual Life Insurance Company
Empire General Life Assurance Corporation
Farmers New World Life
FIC Insurance Group
Fidelity Security Life
GE Financial Assurance/First Colony
Gerber Life Insurance Company
Guardian Life Insurance Company
GuideOne Life Insurance Company
Harleysville Life Insurance Company
Illinois Mutual Life Insurance Company
ING Re
Investors Heritage Life Insurance Company
Kanawha Insurance Company
Lincoln Direct Life Insurance Company
Manulife Financial
MassMutual Financial Group
Minnesota Life
Northwestern Mutual
Pacific Guardian Life Insurance Company
Pan-American Life Insurance Company
Peoples Benefit Life (Aegon)
Pyramid Life/Continental General
Royal Neighbors of America
Sentry Life Insurance Company
State Farm Life Insurance Company and State Farm Life and Accident Assurance Co.
Sun Life Financial
The Baltimore Life Companies
Western Reserve Life Assurance Company of Ohio
Western Southern Life Insurance Company
Woodmen of the World