Predictive Analytics and Accelerated Underwriting Follow-up Survey Report

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Caveat and Disclaimer

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Introduction

The purpose of the original Predictive Analytics and Accelerated Underwriting Survey was to get feedback on several hot industry topics – predictive analytics, accelerated underwriting and enhanced underwriting programs. The original Survey was conducted in June/July of 2016 and, due to limited responses on enhanced underwriting, was only able to report results for the first two programs – predictive analytics and accelerated underwriting. The original report was published in May of 2017.

In question one of the original Survey, companies were asked about whether programs had been implemented or are being worked on. Specifically, companies were asked about the status of their predictive analytics and accelerated underwriting programs, and whether their programs were:

- Implemented
- Being worked on and planned to be implemented within 1 year
- Being worked on and planned to be implemented in 1-2 years
- Being worked on and planned to be implemented longer than 2 years
- Being worked on but not sure if would be implemented
- Not currently being worked on but considering it
- Not currently being worked on but considered it and/or worked on it and decided not to proceed
- Not currently being worked on and not considering it

For the predictive analytics programs, the types of programs were segregated into the following categories:

- Marketing
- Underwriting
- Post-Issue Management

Thirty-four companies responded to the original Survey. Because there has been much continued activity in these areas, the Subcommittee decided to conduct a limited Follow-up Survey in July/August of 2017 to determine changes since the original Survey. The Follow-up Survey, which was sent to the 34 companies that responded to the original survey, covered only the items listed above (except note that, for accelerated underwriting, the Follow-up Survey only asked whether new programs had been implemented). Companies were provided their original responses to better enable them to describe any changes they had made to their programs. Twenty companies responded to the Follow-up Survey. The Subcommittee would like the reader to understand that the results reported by these 20 companies may not necessarily reflect the level of activity in the industry.

The Subcommittee would like to thank all who responded to this Follow-up Survey as it knows the industry is interested in what is happening in the growing fields of predictive analytics and accelerated underwriting. The participants of this Follow-up Survey are shown in Appendix 1. The Subcommittee would also like to thank Korrel Rosenberg of the Society of Actuaries for her help on this project.

Questions on this report can be addressed to Korrel Rosenberg at krosenberg@soa.org or Al Klein, chair of the Subcommittee, at al.klein@milliman.com.

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Predictive Analytics

Respondents were asked to indicate changes made since the original Survey regarding their predictive analytics programs. Among the 20 companies responding to the Follow-up Survey, 51 predictive analytics programs had been implemented as of 2016, and 18 new programs were added as of 2017. In addition, eight programs were updated between 2016 and 2017 and one program was discontinued.

Tables 1-3 summarize the results for implemented programs. The second and third columns of each table represent the number of companies that had implemented programs as of the original 2016 Survey (34 companies) and Follow-up Survey (20 companies), respectively. The next three columns show the changes made by the 20 companies responding to the Follow-up Survey. The last column shows the total number of programs implemented by the 20 companies as of 2017.

Table 1 shows the results for the marketing predictive analytics programs.

Table 1 - Predictive Analytics – Marketing Programs Implemented

Program	# of Programs Implemented as of 2016		Changes in 2017			# of Programs Implemented as of 2017
	34 Companies	20 Companies	Updated	Discontinued	New	20 Companies
Customer more likely to buy	12	7	1	0	1	8
Cross selling	10	7	1	0	0	7
Target market determination	9	5	2	0	0	5
Up selling	9	6	1	0	2	8
Customer less likely lapse	7	3	0	0	1	4
Customer health profile	5	2	0	0	1	3
Agent selection/hiring	3*	3*	0	-1	0	2
Other	4	1**	0	0	1***	2
Totals	**59**	**34**	**5**	**-1**	**6**	**39**

*This number was 4 in the original Survey. The reason for the change was one company indicated they had marked this response in error in the 2016 Survey.
**UL vs Term prospect*
***Agent Recruiting*

According to the original Survey, 34 marketing predictive analytics programs had been implemented as of 2016 by the 20 companies that responded to the Follow-up Survey. According to the Follow-up Survey, five programs were updated, one was discontinued, and six new programs were implemented.

The following six programs were newly implemented:

- Customer more likely to buy
- Up selling (2)
- Customer less likely lapse
- Customer health profile
- Other (Agent Recruiting)

Table 2 shows the results for the underwriting predictive analytics programs.

Table 2 - Predictive Analytics – Underwriting Programs Implemented

Program	# of Programs Implemented as of 2016		Changes in 2017			# of Programs Implemented as of 2017
	34 Companies	20 Companies	Updated	Discontinued	New	20 Companies
Underwriting risk class	10*	3*	1	0	3	**6**
Deciding on underwriting requirements	9	3	2	0	4	**7**
Stretch criteria for selecting underwriting class	5	0	0	0	0	**0**
Business decisions	1	0	0	0	0	**0**
Table shave	1	0	0	0	0	**0**
Other	2	0	0	0	3**	**3**
Total	**28**	**6**	**3**	**0**	**10**	**16**

*These numbers were 12 and 5, respectively, in the original Survey. The reasons for these changes were one company indicated they had marked this response in error in the 2016 Survey and another company indicated they had never implemented the program.

**RX Scoring, Accelerated Underwriting, and Lab results analytic tool

According to the original Survey, six underwriting predictive analytics programs had been implemented as of 2016 by the 20 companies that responded to the Follow-up Survey. According to the Follow-up Survey, three programs were updated and ten new programs were implemented.

The following ten programs were newly implemented:

- Underwriting risk class (3)
- Deciding on underwriting requirements (4)
- Other (RX Scoring, Accelerated Underwriting, and Lab results analytic tool)

Table 3 shows the results for the post-issue management predictive analytics programs.

Table 3 - Predictive Analytics – Post-Issue Management Programs Implemented

Program	# of Programs Implemented as of 2016		Changes in 2017			# of Programs Implemented as of 2017
	34 Companies	20 Companies	Updated	Discontinued	New	20 Companies
In force management – pre-lapse	7	4	0	0	0	4
Targeted conversion	5	4	0	0	0	4
For term, post-level premium term conservation management	2	2	0	0	1	3
Agent monitoring/management	2	0	0	0	0	0
In force management – post-lapse	2	0	0	0	0	0
In force management – Other customer interaction	1	0	0	0	1	1
Other	2	1*	0	0	0	1
Total	**21**	**11**	**0**	**0**	**2**	**13**

*Type of program not disclosed

According to the original Survey, 11 post-issue management predictive analytics programs had been implemented as of 2016 by the 20 companies that responded to the Follow-up Survey. According to the Follow-up Survey, two new programs were implemented.

The following two programs were newly implemented:
- For term, post-level premium term conservation management
- In force management – Other customer interaction

Tables 4, 6 and 8 summarize the results of all the program changes. The second through fourth columns show the number of programs for the 20 companies from the original Survey that participated in the Follow-up Survey. Columns 5-7 show the number of programs in the Follow-up Survey.

Table 4 shows the results of the marketing program changes.

Table 4 - Predictive Analytics – Marketing Program Activity

Program	2016 (20 companies)			2017 (20 companies)		
	Implemented	Working on it	Not Working on it	Implemented	Working on it	Not Working on it
Customer more likely to buy	7	4	8	8	5	5
Cross selling	7	2	10	7	2	8
Target market determination	5	5	8	5	4	8
Up selling	6	3	9	8	1	8
Customer less likely to lapse	3	6	9	4	4	9
Customer health profile	2	4	11	3	3	9
Agent selection/hiring	3	4	8	2	5	8
Other	1*	1**	5	2***	3****	6
Total	**34**	**29**	**68**	**39**	**27**	**61**

*UL vs Term prospect
**Type of program not disclosed
***Agent Recruiting and UL vs Term prospect
****Type of program not disclosed (2) and Lead generation

In the Follow-up Survey, there was a total of 66 marketing programs either implemented or being worked on. This represents a net increase of three programs between the two surveys. As shown in Table 4, five new programs were implemented (39 vs. 34) and two fewer were being worked on (27 vs. 29).

Note the changes in activity include both programs that were being worked on that are no longer being worked on and programs that were not being worked on that are now being worked on; the changes also include new programs that have been implemented.

Tables 5, 7 and 9 focus on the current status of programs that were within one year of implementation in the original Survey.

The Subcommittee decided to look at what happened to the programs the companies had identified as being within one year of implementation. For the marketing programs, there were ten programs that were within one year of implementation in the original Survey. Table 5 shows the status of these programs in the Follow-up Survey.

Table 5 - Predictive Analytics – Marketing Program Activity
(Current Status of 2016 Programs Within 1 Year of Implementation)

Program	2017 Status
Customer more likely to buy	Still <1 year
Cross selling	Still <1 year
Target market determination	Implemented
Target market determination	Still <1 year
Up selling	Implemented
Customer less likely to lapse	Implemented
Customer less likely to lapse	Still <1 year
Customer health profile (2)	Still <1 year
Agent selection and hiring	Still <1 year

Of the ten, three had implemented these programs as of the Follow-up Survey and the other seven were still within one year of implementation.

Table 6 shows the results of the underwriting program changes.

Table 6 - Predictive Analytics – Underwriting Program Activity

Program	2016 (20 companies)			2017 (20 companies)		
	Implemented	Working on it	Not Working on it	Implemented	Working on it	Not Working on it
Underwriting risk class	3	8	6	6	6	6
Deciding on underwriting requirements	3	10	6	7	6	4
Stretch criteria for selecting underwriting class	0	4	14	0	4	11
Business decisions	0	2	13	0	2	11
Table shave	0	1	14	0	1	12
Other	0	1	7	3*	0	6
Total	**6**	**26**	**60**	**16**	**19**	**50**

*RX Scoring, Accelerated Underwriting, and Lab results analytic tool

In the Follow-up Survey, there was a total of 35 underwriting programs either implemented or being worked on. This represents a net increase of three programs between the two surveys. As shown in Table 6, ten new programs were implemented (16 vs. 6) and seven fewer were being worked on (19 vs. 26).

Note the changes in activity include both programs that were being worked on that are no longer being worked on and programs that were not being worked on that are now being worked on; the changes also include new programs that have been implemented.

For the underwriting programs, there were 11 programs that were within one year of implementation in the original Survey. Table 7 shows the status of these programs in the Follow-up Survey.

Table 7 - Predictive Analytics – Underwriting Program Activity
(Current Status of 2016 Programs Within 1 Year of Implementation)

Program	2017 Status
Underwriting risk class (i.e., preferred, standard, substandard) (3)	Implemented
Underwriting risk class (i.e., preferred, standard, substandard)	Decided not to proceed
Deciding on underwriting requirements (4)	Implemented
Deciding on underwriting requirements	Still <1 year
Stretch criteria for selecting underwriting class	Still <1 year
Other (Accelerated underwriting)	Implemented

Of the 11, eight had implemented these programs as of the Follow-up Survey, two were still within one year of implementation and one decided not to proceed.

Table 8 shows the results of the post-issue management program changes.

Table 8 - Predictive Analytics – Post-Issue Management Program Activity

Program	2016 (20 companies)			2017 (20 companies)		
	Implemented	Working on it	Not Working on it	Implemented	Working on it	Not Working on it
In force management – pre-lapse	4	3	10	4	4	8
Targeted conversion	4	1	12	4	1	9
For term, post-level premium term, conservation management	2	3	12	3	3	9
Agent monitoring/management	0	5	0	0	6	2
In force management – post-lapse	0	3	13	0	3	11
In force management – Other customer interaction	0	1	8	1	1	8
Other	1	1*	10	1	1*	7
Total	**11**	**17**	**65**	**13**	**19**	**54**

*Type of program not disclosed

In the Follow-up Survey, there was a total of 32 post-issue management programs either implemented or being worked on. This represents a net increase of four programs between the two surveys. As shown in Table 8, two new programs were implemented (13 vs. 11) and two additional were being worked on (19 vs. 17).

Note the changes in activity include both programs that were being worked on that are no longer being worked on and programs that were not being worked on that are now being worked on; the changes also include new programs that have been implemented.

For the post-issue management programs, there were four programs that were within one year of implementation in the original Survey. Table 9 shows the status of these programs in the Follow-up Survey.

Table 9 - Predictive Analytics – In Force Management Program Activity
(Current Status of 2016 Programs Within 1 Year of Implementation)

Program	2017 Status
In force management – pre-lapse	Still <1 year
Agent monitoring/management (2)	Still <1 year
Agent monitoring/management	Decided not to proceed

Of the four, three were still within one year of implementation and one decided not to proceed.

Accelerated Underwriting

Respondents were asked to indicate changes made since the original Survey regarding their accelerated underwriting programs.

Table 10 summarizes the results. As before, the second and third columns of each table represent the number of companies that had implemented programs in the original Survey (34 companies) and Follow-up Survey (20 companies), respectively. The next three columns show the changes made by the 20 companies responding to the Follow-up Survey. The last column shows the total number of programs implemented by those 20 companies as of 2017.

Table 10 - Accelerated Underwriting Programs

# of Programs Implemented as of 2016		Changes in 2017			# of Programs Implemented as of 2017
34 Companies	**20 Companies**	**Updated**	**Discontinued**	**New**	**20 Companies**
10	2	0	0	3	5

According to the original Survey, two accelerated underwriting programs had been implemented as of 2016 by the 20 companies that responded to the Follow-up Survey. According to the Follow-up Survey, three new programs were implemented. Among the 20 companies, no accelerated underwriting programs were updated or discontinued since the original Survey.

Appendix A – Participating Companies

AAA Life Insurance Company
Allstate
American Family Life Insurance Company
AXA US
FBL Financial Group, Inc.
Federal Life Insurance
John Hancock
Kansas City Life Insurance Co
New York Life
Pacific Guardian Life
Pacific Life
Principal
Protective Life
Prudential
RMA
State Farm Life
Sun Life
The Wawanesa Life Insurance Company
USAA Life
Zurich American Life Insurance Company

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The Society of Actuaries (SOA), formed in 1949, is one of the largest actuarial professional organizations in the world dedicated to serving 24,000 actuarial members and the public in the United States, Canada and worldwide. In line with the SOA Vision Statement, actuaries act as business leaders who develop and use mathematical models to measure and manage risk in support of financial security for individuals, organizations and the public.

The SOA supports actuaries and advances knowledge through research and education. As part of its work, the SOA seeks to inform public policy development and public understanding through research. The SOA aspires to be a trusted source of objective, data-driven research and analysis with an actuarial perspective for its members, industry, policymakers and the public. This distinct perspective comes from the SOA as an association of actuaries, who have a rigorous formal education and direct experience as practitioners as they perform applied research. The SOA also welcomes the opportunity to partner with other organizations in our work where appropriate.

The SOA has a history of working with public policymakers and regulators in developing historical experience studies and projection techniques as well as individual reports on health care, retirement, and other topics. The SOA's research is intended to aid the work of policymakers and regulators and follow certain core principles:

Objectivity: The SOA's research informs and provides analysis that can be relied upon by other individuals or organizations involved in public policy discussions. The SOA does not take advocacy positions or lobby specific policy proposals.

Quality: The SOA aspires to the highest ethical and quality standards in all of its research and analysis. Our research process is overseen by experienced actuaries and non-actuaries from a range of industry sectors and organizations. A rigorous peer-review process ensures the quality and integrity of our work.

Relevance: The SOA provides timely research on public policy issues. Our research advances actuarial knowledge while providing critical insights on key policy issues, and thereby provides value to stakeholders and decision makers.

Quantification: The SOA leverages the diverse skill sets of actuaries to provide research and findings that are driven by the best available data and methods. Actuaries use detailed modeling to analyze financial risk and provide distinct insight and quantification. Further, actuarial standards require transparency and the disclosure of the assumptions and analytic approach underlying the work.

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