This Is How We Do It (For Now) — Embracing Innovation in the Life Industry, Today and Tomorrow

Elliott Wallace
VP & GM, Life Vertical

OCTOBER 2017
Today’s innovation driver: Alternative Data

In lieu of traditional medical data, Alternative Data is processed through predictive models to allow carriers to process a life insurance application in near real time.

STREAMLINED DATA PROCESS

Carrier’s Application → Identity Verification → Data Prefill → Predictive Model → Multi-Factor Identity Authentication → ePolicy sent and bound policy to insured delivered → Enhanced Customer Management

Satisfy customer demand for a non-invasive, speedy process. Help insurers lower underwriting costs and maintain mortality rates.
Underwriting today

APS Driven Process
(Attending Physician Statement)

Accelerated Underwriting
with Public Record based Predictive Modeling

Return APS after HIPAA release
45 DAYS

Typical turn-around times

Low-end: 14 days … High-end: 2.5 months

Deliver underwriting result 1 DAY

Low-end: <15 minutes … High-end: 5 days

Embracing Innovation in the Life Industry
Predictive Modeling Using Alternative Data: Example of how it works

--- CARRIER INPUTS ---
- Name
- Address
- Date of Birth

--- LEXISNEXIS ---
- Big Data Processing and Analytics
- FCRA Governed Data (Public Records, MVR, Credit)

LexisNexis Risk Classifier

Helping carriers protect families in real-time

1 DAY
Deliver underwriting result with LexisNexis® Risk Classifier
Low-end: <15 minutes … High-end: 5 days

Embracing Innovation in the Life Industry
LexisNexis® Risk Classifier

Predictive Models in Life Insurance continues to gain momentum

~20-30 of the life market is using accelerated underwriting

4 out of 5 Independently validated by 4 of top 5 life reinsurance organizations

20 We are working with the top carriers (~20 of the top 100)

“Our mission is to protect people and ultimately close the life insurance gap. The number of un- and under-insured families is staggering. We want our customers to be satisfied at the end of the day, and we want to be able to offer life insurance simply. By speeding up the process, Risk Classifier appeals to consumers of all ages, and we are able to get more business through.”

– Troy Thompson, Senior Vice President & Chief Actuary, Legal and General America
The key to Today and Tomorrow is to expand the use of Alternative Data to drive a non-invasive and speedy customer experience across the Life Insurance Continuum.
Changing consumer expectations

Our constantly evolving technological world means that consumers expect **greater speed and ease** when making and maintaining purchases.
Enhancing the view of your customer with Alternative Data

Today there is a variety of Alternative Data that can be linked to individual entities
Vast amounts of Alternative Data exist Today

- 23.5 Billion insurance records
- 19.3 Billion consumer records
- 10.3 Billion unique name/address combinations
- 5 Billion property records
- 5.6 Billion motor vehicle registrations
- 1.5 Billion bankruptcy records monitored
- 1.2 Billion vehicle title records
- 534 Million criminal records
- 282 Million unique cell phones
- 47 Million active U.S. business entities (LexIDсы)

Partial snapshot of our U.S. data sets as of 08/01/2017
Let’s look at Today and Tomorrow at different points in the life insurance continuum.
The next step in Predictive Modeling using Alternative Data
While carriers are now more accepting of using predictive models, they are keeping opportunity “contained” to a limited segment of their business.
50 the new 30

Gen X-ers

- Moving into their 50’s
- Mortgage protection
- Values financial independence
- Maintain standard of living
- Paying for college expenses
- Caring for aging (Boomer) parents

Ages 37-52

Baby Boomers

- Living longer
- Still active in business
- Income protection
- Retirement & final expense
- More engaged in communities
- Still living their fullest life

“[Gen X-ers] forged some useful traits … independence, resilience, adaptability, entrepreneurship.”
– Gen X Turns 50 – ‘We’re doing well, thanks for asking’, Epoch Times, March 26, 2016

“Baby boomers still have a need for life insurance products …” “The life insurance coverage gap: a multi-trillion dollar chasm”
– Think Advisor, July 14, 2015.
Predictive Model with Alternative Data score ranking of SMR on life insured population – older ages

For 50-79 year olds, the highest risk score group has an SMR **4.6 TIMES HIGHER** than that of the lowest risk score group.

LexisNexis® Risk Classifier Scores, age 50-79. Life Insured Population set of 1.8M individuals. Expected deaths from the 2008 Primary VBT. SMR calculated as A/E divided by overall population A/E.
SMR across age ranges on life insured population

— 20 to 29 —
For 20-29 year olds, the high risk group SMR is **3.4 TIMES HIGHER** than the low risk group.

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 to 399</td>
<td>228%</td>
</tr>
<tr>
<td>400 to 599</td>
<td>109%</td>
</tr>
<tr>
<td>600 to 799</td>
<td>76%</td>
</tr>
<tr>
<td>800 to 997</td>
<td>67%</td>
</tr>
</tbody>
</table>

— 30 to 39 —
For 30-39 year olds, the high risk group SMR is **3.8 TIMES HIGHER** than the low risk group.

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 to 399</td>
<td>258%</td>
</tr>
<tr>
<td>400 to 599</td>
<td>118%</td>
</tr>
<tr>
<td>600 to 799</td>
<td>70%</td>
</tr>
<tr>
<td>800 to 997</td>
<td>69%</td>
</tr>
</tbody>
</table>

— 40 to 49 —
For 40-49 year olds, the high risk group SMR is **3.3 TIMES HIGHER** than the low risk group.

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 to 399</td>
<td>206%</td>
</tr>
<tr>
<td>400 to 599</td>
<td>115%</td>
</tr>
<tr>
<td>600 to 799</td>
<td>74%</td>
</tr>
<tr>
<td>800 to 997</td>
<td>63%</td>
</tr>
</tbody>
</table>

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*LexisNexis® Risk Classifier Scores, age 20-49. Life Insured Population set of 1.8M individuals. Expected deaths from the 2008 Primary VBT. SMR calculated as A/E divided by overall population A/E.*
SMR across age ranges on life insured population

— 50 to 59 —
For 50-59 year olds, the high risk group SMR is **3.6 TIMES HIGHER** than the low risk group.

- 220% for 200 to 399
- 106% for 400 to 599
- 74% for 600 to 799
- 61% for 800 to 997

— 60 to 69 —
For 60-69 year olds, the high risk group SMR is **3.5 TIMES HIGHER** than the low risk group.

- 197% for 200 to 399
- 113% for 400 to 599
- 74% for 600 to 799
- 56% for 800 to 997

— 70 to 79 —
For 70-79 year olds, the high risk group SMR is **2.7 TIMES HIGHER** than the low risk group.

- 196% for 200 to 399
- 111% for 400 to 599
- 77% for 600 to 799
- 74% for 800 to 997

**LexisNexis® Risk Classifier Scores, age 50-79. Life Insured Population set of 1.8M individuals**

**Expected deaths from the 2008 Primary VBT. SMR calculated as A/E divided by overall population A/E.**
SMR across age ranges on life insured population

LexisNexis® Risk Classifier Scores, age 20-79. Life Insured Population set of 1.8M individuals. Expected deaths from the 2008 Primary VBT. SMR calculated as A/E divided by overall population A/E.
Fully Underwritten Risk Class Shifting (debts / credits) Using Predictive Modeling with Alternative Data

<table>
<thead>
<tr>
<th>LexisNexis Risk Classifier</th>
<th>Preferred Non-Tobacco</th>
<th>Standard Non-Tobacco</th>
<th>Tobacco</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 to 350</td>
<td>163%</td>
<td>220%</td>
<td>140%</td>
</tr>
<tr>
<td>351 to 525</td>
<td>90%</td>
<td>122%</td>
<td>125%</td>
</tr>
<tr>
<td>526 to 715</td>
<td>61%</td>
<td>80%</td>
<td>93%</td>
</tr>
<tr>
<td>716 to 997</td>
<td>61%</td>
<td>61%</td>
<td>77%</td>
</tr>
<tr>
<td>Total</td>
<td>70%</td>
<td>92%</td>
<td>102%</td>
</tr>
</tbody>
</table>

*Inforce policies, age 50-79.*

*Expected deaths from the 2008 Primary VBT. SMR calculated as A/E divided by overall population A/E.*
The Future: Face Amounts >$5M using Predictive Modeling with Alternative Data
The Future: Face Amounts >$5M using Predictive Modeling with Alternative Data

- APS Driven Process (Attending Physician Statement)
- Accelerated Underwriting with Public Records Based Predictive Modeling
- Predictive Modeling with Alternative Data and Electronic Health Records
LexisNexis Risk Classifier results — Elliott C. Wallace

Score and Messages

<table>
<thead>
<tr>
<th>Score:</th>
<th>908</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model:</td>
<td>L511</td>
</tr>
<tr>
<td>Model Description:</td>
<td>Life Underwriting V1.1 – FCRA – Public Records, MVR, NCF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code:</th>
<th>Reason Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>L061:</td>
<td>Ownership Status of Address Provided</td>
</tr>
<tr>
<td>L060:</td>
<td># of Addresses in Relation to Length of Residency</td>
</tr>
<tr>
<td>0105:</td>
<td># of Open Accounts with High % of Balance to Credit Limit</td>
</tr>
<tr>
<td>0225:</td>
<td># of Retail Consumer Initiated Inquiries in the Last 24 Months</td>
</tr>
</tbody>
</table>

- General credit inquired
- Open credit union account
- Open bank installment accounts and finance accounts
- Three properties owned
- Two properties sold
- Four-year degree found
- One moving violation: speeding ticket in VA was neutral
- None of the following present: criminal history, foreclosures/liens/judgements, bankruptcy, late payments, collections
Score and Messages with **Electronic Health Records Incorporated**

<table>
<thead>
<tr>
<th>Score:</th>
<th>900</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model:</td>
<td>L511</td>
</tr>
<tr>
<td><strong>Model Description:</strong> Life Underwriting V3.0 – FCRA, <strong>HIPAA</strong> – Public Records, <strong>Electronic Health Records</strong>, MVR, NCF</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code:</th>
<th>Reason Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>L061:</td>
<td>Ownership Status of Address Provided</td>
</tr>
<tr>
<td>L060:</td>
<td># of Addresses in Relation to Length of Residency</td>
</tr>
<tr>
<td><strong>H305:</strong></td>
<td><strong>Diabetic — Well Controlled</strong></td>
</tr>
<tr>
<td>0225:</td>
<td># of Retail Consumer Initiated Inquiries in the Last 24 Months</td>
</tr>
</tbody>
</table>

- **Diabetic had a negative impact on score offset due to being well controlled**
- **Open credit union account**
- **Open bank installment accounts and finance accounts**
- **Three properties owned,**
- **Two properties sold**
- **Four-year degree found**
- **One moving violation: speeding ticket in VA was neutral**
- **None of the following present: criminal history, foreclosures/liens/judgements, bankruptcy, late payments, collections**
Let’s look at today and tomorrow at different points in the life insurance continuum
Insurance fraud: An $80B market

HEALTHCARE FRAUD

$100B

FRAUDULENT CLAIMS:

$80B

Source: Coalition Against Insurance Fraud http://www.insurancefraud.org
Expanding the scope beyond claims data with relationship mapping

Data
Leverage multiple sources of data, including non-health care data, to identify new and previously unknown relationships.

Claims
- High volume/dollars
- Utilization outliers

Provider
- Sanctioned
- Expired license
- Locations
- Affiliations
- Deceased
- Criminal
- Bankruptcy
- Property

Individual

Business
- Owners
- Locations
- Liens/judgments

Non-healthcare
- Auto insurance accidents
- Identity fraud
Expanding the scope beyond claims data with relationship mapping

Leverage multiple sources of data, including new and previously unknown relationships, to identify patterns of behavior. Uncover schemes quickly, increasing automation.

**Data**

**Linking**

**Claims**
- High volume/dollars
- Utilization outliers

**Provider**
- Sanctioned
- Expired license
- Locations
- Affiliations

**Individual**
- Deceased
- Criminal
- Bankruptcy
- Property

**Business**
- Owners
- Locations
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**Non-healthcare**
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- Identity fraud
Expanding the scope beyond claims data with relationship mapping

Data
Leverage multiple sources of data, including non-healthcare data, to identify new and previously unknown relationships.

Linking
Identify key players, connections and frequently missed patterns of behavior. Uncover schemes quickly, increasing automation.
Expanding the scope beyond claims data with relationship mapping

**Data**
Leverage multiple sources of data, including non-health care data, to identify new and previously unknown relationships.

**Linking**
Identify key players, connections and frequently missed patterns of behavior.
Uncover schemes quickly, increasing automation.

**Visualization**
Simplify understanding level of involvement of individuals and criminal organizational hierarchies.
Accelerate response to potential schemes and efficiently allocate resources.

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Claims
Provider
Individual
Business
Non-healthcare
Relationship mapping dashboard: Who, what and where
Relationship mapping dashboard: Who, what and where
Value delivered Life, DI, and LTC

Relationship Mapping improves ROI by significantly increasing efficiency

- Uncover collusive schemes and relationships quickly
- Process good claims quickly with confidence
- Allocate resources and reduce manual investigative effort
Let’s look at tomorrow across the continuum
Data, data everywhere!

By 2020, up to 50 billion connected devices (compared to 8 billion people on the planet).\(^1\)

Those devices will be generating 194,000 exabytes per month by 2020 (an exabyte is 1 billion gigabytes).\(^2\)

Sources: 1. Cisco; 2. Aite, May 2017
Recognized Value of “Hot Topic” Areas at US Insurers

<table>
<thead>
<tr>
<th>Category</th>
<th>ROI &gt; 50%</th>
<th>ROI &lt; 50%</th>
<th>No formal ROI, but value widely recognized</th>
</tr>
</thead>
<tbody>
<tr>
<td>SaaS, Ancillary</td>
<td>5%</td>
<td>19%</td>
<td>41%</td>
</tr>
<tr>
<td>Analytics, Reporting</td>
<td>7%</td>
<td>11%</td>
<td>59%</td>
</tr>
<tr>
<td>Analytics, Modeling</td>
<td>8%</td>
<td>8%</td>
<td>54%</td>
</tr>
<tr>
<td>IaaS/PaaS</td>
<td>4%</td>
<td>9%</td>
<td>23%</td>
</tr>
<tr>
<td>Digital</td>
<td>4%</td>
<td>4%</td>
<td>55%</td>
</tr>
<tr>
<td>Analytics, Scoring</td>
<td>4%</td>
<td>4%</td>
<td>37%</td>
</tr>
<tr>
<td>SaaS, Core</td>
<td>3%</td>
<td>4%</td>
<td>22%</td>
</tr>
<tr>
<td>Mobile for Policyholders</td>
<td>8%</td>
<td></td>
<td>37%</td>
</tr>
<tr>
<td>Social Media, Internal</td>
<td>7%</td>
<td></td>
<td>40%</td>
</tr>
<tr>
<td>Social Media, Marketing</td>
<td>3%</td>
<td></td>
<td>37%</td>
</tr>
<tr>
<td>Mobile for Distributors</td>
<td>3%</td>
<td></td>
<td>26%</td>
</tr>
<tr>
<td>Mobile for Adjusters/Others</td>
<td>3%</td>
<td></td>
<td>25%</td>
</tr>
<tr>
<td>Social Media, Data Analysis</td>
<td></td>
<td></td>
<td>21%</td>
</tr>
<tr>
<td>IoT/Wearables</td>
<td>2%</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Big Data</td>
<td></td>
<td>12%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Novarica Survey of 91 Insurer CIOs, 2016Q4
LexisNexis 2017 Study: IoT and the State of the Insurance Industry

600 insurance professionals surveyed from top 100 carriers in auto, home, life and commercial

Job functions:

- Marketing
- Underwriting
- Product Management
- Claims

We covered Perceptions and Preparedness for the Insurance industry related to the Internet of Things:

- Telematics data (Auto)
- Data from connected homes (Home)
- Wearables/personal technology (Life)
- Telematics data and connected property data (Commercial)
Very few have a defined IoT strategy in place today …

<table>
<thead>
<tr>
<th>% that have a defined strategy for the IoT TODAY</th>
<th>% “Yes”</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>21%</td>
</tr>
<tr>
<td>BY LINE OF BUSINESS</td>
<td></td>
</tr>
<tr>
<td>Personal Auto</td>
<td>17%</td>
</tr>
<tr>
<td>Home</td>
<td>23%</td>
</tr>
<tr>
<td>Life</td>
<td>29%</td>
</tr>
<tr>
<td>Commercial</td>
<td>15%</td>
</tr>
<tr>
<td>BY FUNCTION</td>
<td></td>
</tr>
<tr>
<td>Marketing</td>
<td>21%</td>
</tr>
<tr>
<td>Underwriting / Actuarial</td>
<td>13%</td>
</tr>
<tr>
<td>Pricing / PM / PD</td>
<td>19%</td>
</tr>
<tr>
<td>Claims</td>
<td>27%</td>
</tr>
<tr>
<td>BY CARRIER RANK</td>
<td></td>
</tr>
<tr>
<td>Top 20</td>
<td>52%</td>
</tr>
<tr>
<td>Top 21-50</td>
<td>27%</td>
</tr>
<tr>
<td>Top 51-100</td>
<td>4%</td>
</tr>
</tbody>
</table>

Q4A Does your company have a defined strategy for the Internet of Things (IoT) today? Q4B Does your company have a strategy for the Internet of Things (IoT) for 3 to 5 years from now? Base: Total Answering (n=480) Personal Auto (n=120) Home (n=120) Life (n=120) Commercial (n=120) Mktg (n=160) Claims (160) Pricing/PMPD (n=80) UW/Act. (n=80) Top 20 (n=75) Top 21-50 (n=205) Top 51-100 (n=200)
Beyond IoT
What would bold change look like?
Getting comprehensive data about the proposed insured from multiple alternative data sources, not only at time of application, but in regular intervals after policy issue.
Non-invasive and real-time predictive modeling with alternative data in lieu of traditional fluids
This is How We Do It (For Now) — Embracing Innovation in the Life Industry, Today and Tomorrow

Integrated Infrastructure
Alternative data is platform and software agnostic implement with legacy systems or new

TOMORROW
- Continuous Underwriting with Predictive Modeling with Alternative Data
- Predictive Modeling with Alternative Data and EHR
- Predictive Modeling with Alternative Data – 60+
- Predictive Modeling in conjunction with Fully Underwritten – Risk Class Switching
- Claims Relationship Mapping

TODAY
- Predictive Modeling with Alternative Data

FCRA, Non-FCRA, GLB, Non-GLB DPPA, HIPAA, etc.

CONFIDENTIAL
Next steps

October 11

4Q 2017

2018

2018 & 2019

Talk to your leadership team

Identify entry point or expansion point while ensuring regulatory compliance

Implement or expand Predictive Modeling with alternative data — drive consumer focus

Expand your alternative data strategy across the Life Insurance Continuum
Let’s work together to Embrace Innovation in the Life Industry, Today and Tomorrow!

By properly using alternative data, life carriers are streamlining processes across the life insurance continuum — Marketing, Application, Underwriting, Compliance, Service and Claim. These carriers are seeing a reduction in expenses while also protecting mortality. Early adopters of LexisNexis public records solutions have been able to issue policies in near real time at better than simplified issue rates improving the producer and consumer experience.
Thank you

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