

# Maximizing the Payoff from Underwriting Engines and Straight-Through Processing

October 2018

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# Underwriter's view today



“Sorry, Ms. Agent. I have a score and a color. I have to decline your applicant.”



“What’s going to happen to my job?”



- “This guy is 5’ 10” 160 pounds? Yeah, right. And I don’t drink beer either

# Consumer view today



“No exam and my price is within 10% of Acme Insurance?!? Cool! I’m not a smoker today, baby.”



“10% less but 30 days to get a policy?!? This stinks!”



“Boy, the sales person at Acme Life is a real PITA!”

# Where do I start?

1. Start with what you know
  - current underwriting practices
  - underwriting decisions
  - mortality experience
2. Decide on desired client experience and retail pricing
3. What's the “give-up” in terms of requirements needed to achieve the desired experience
4. What's the impact on pricing?

# Automated underwriting: the questions matter

- Use common English
- Knock-out questions determine eligibility early
- No leading questions
- Do not repeat questions
- Limit the number of drill-down questions
- The right questions in the right order



- Predictive Underwriting (Modeling)
- Biometric Data (Wearables)



- Impact on customer buying experience
- Old paradigm



- Impact on customer buying experience
- Reduce drop-out rate
- New paradigm

## Streamlined/automated underwriting paradigm

- “Big data” vendors: thousands of data points
- Reinsurers: decades of mortality data
  
- Fully underwritten decisions
  - Real-time basis
  - Utilize non-FCRA data
  - 80% accuracy

- Requirements
  - Enterprise-wide solution
  - Align with client behavior and expectations
  - Reduced cycle time
- Quality rules engine
  - Easy to update by an underwriter (no IT involvement)
  - Up-to-date
  - Consistent with underwriting philosophy
- Interactive questioning with third party data sources
  - Can attain 80%+ hit rate on Rx searches
- Business analytics



# Now what?

1. Assess your internal abilities and develop a project plan
  - All at once or phases?
  - What expertise do I have? Can I allocate them to a project?
  - Go it alone or engage partners?
2. Develop baseline model to predict mortality using case data and a few other checks
  - Consider MIB, Rx, MVR, and possibly a score
  - Overlay known underwriting decisions
  - Predict the decision
  - Measure the difference in accuracy
3. Determine what new underwriting tools to bring in to bridge the pricing gap?
4. Perform a cost/benefit analysis – accuracy of the base model, expense savings versus present value of death benefits

# Cost benefit analysis – key benefits of automation

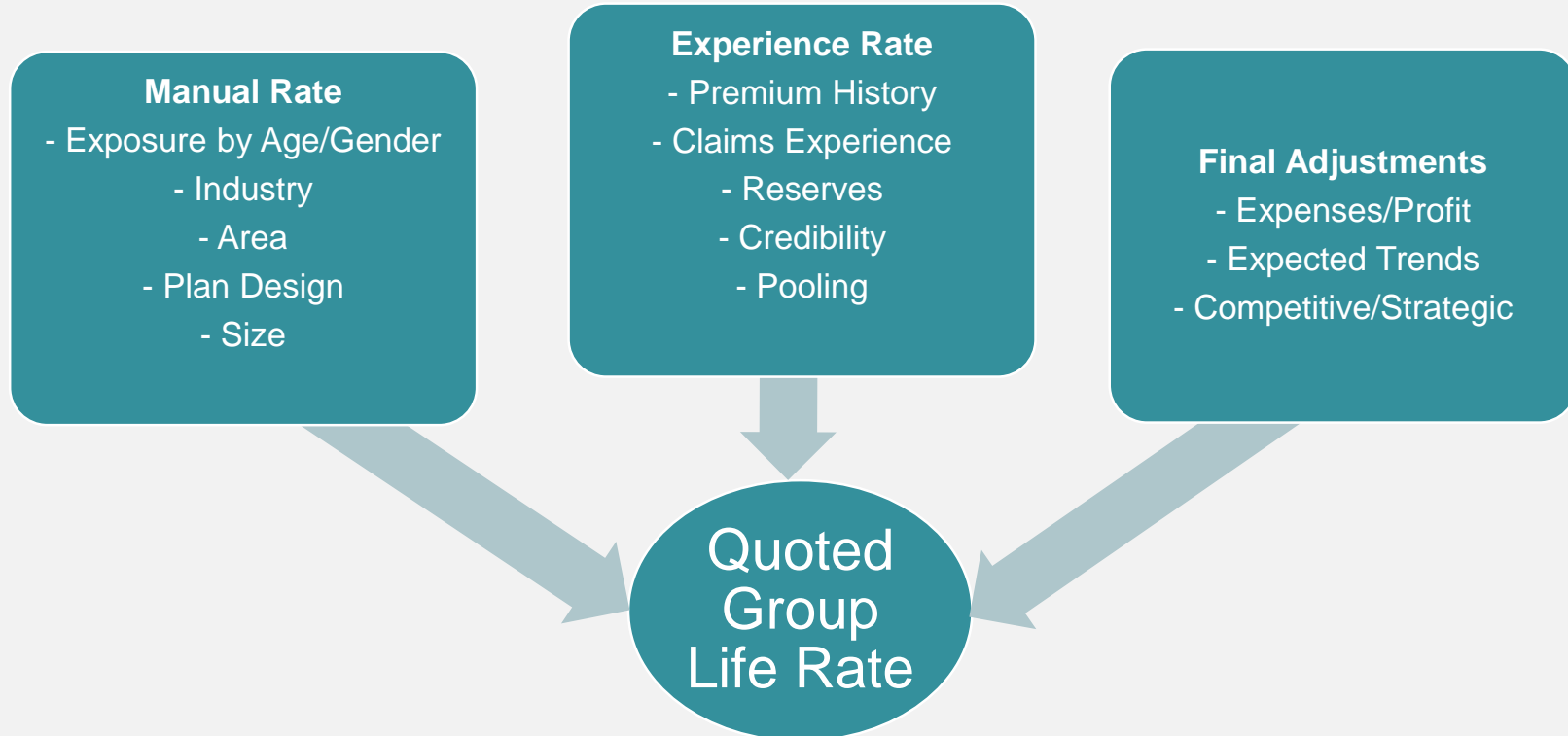
- Fewer cases requiring manual underwriting
  - ✓ Underwriter expertise on the right cases, at the right time, with the right information
  - ✓ Increased scalability with access to better data
- Reduced medical evidence costs
- Reduced not-taken rates
- Optimize teleinterview time
- Identify nondisclosure (mortality/morbidity improvement)
  - ✓ more consistent decisions
  - ✓ claim avoidance

- It's complex
- Set a vision that can be acted upon in stages
  - Account for all stakeholders
  - Educate, evaluate, communicate
- Leverage what you know
- Willing to partner
  - Traditional
  - New Paradigm
- Ability to pilot quickly

- Group life market continues to be highly competitive
- Focus on expense efficiency for price-sensitive products
- Emphasis on voluntary benefits with increasing Guaranteed Issue amounts
- Longer rate guarantees, but concerns about future mortality trends
- Revisions / Updates to Evidence of Insurability Requirements/Questions
- Products **must** be consumer focused with faster, simpler underwriting decisions (at the same or better price!)
- Major carriers investing in resources and technology to implement predictive models using “Big Data” in marketing, claims, pricing and underwriting Group Life

# Traditional underwriting approaches

## Group underwriting



**MIB**

- Majority of carriers utilize MIB as a screening tool
- Flag for adverse underwriting decisions, indicating need for further review
- Cannot be sole cause for declining applicant
- Studies estimate NPV of \$2-15 for each \$1 spent on group life MIB checking

**Rx**

- Standard practice for individual life, increasing utilization in group life
- Potential proxy for more intrusive medical underwriting approaches
- Strong correlation to mortality and increasing availability of prescription data

**MVR**

- Prevalent in individual life underwriting, utilized by several large group life carriers
- Predictor of risks not reflected in current health profile, particularly at younger ages
- Demonstrated strong correlation to all cause mortality

## NT-pro BNP

- New blood test used to screen for cardiac risk
- Strong correlation to Heart Disease and Diabetes
- Greatest impact at oldest ages

## Consumer Data

- Home ownership, professional licenses linked to lower mortality risk
- Bankruptcy, eviction, liens, felonies linked to higher relative mortality risk
- Self reported questions on E of I form are prevalent
- Group life carriers in exploratory phase of using consumer data in underwriting

## Wearables

- FitBit, smartphones, etc. allow opportunity to access vast amount of individual data
- Progressive's Snapshot® and John Hancock's Vitality® are making forays into using wearable data in underwriting

- Underwriting methods are evolving at an individual and group level
- Vast quantities of medical and consumer data provide opportunities for more competitive and profitable group life business
- Practical considerations such as cost, availability of data and privacy concerns need to be addressed in order to implement change
- Further study of the impact of new approaches on mortality risk will help actuaries and underwriters assess the true value of using big data in group life underwriting





Piecing it together





## Increased mortality

- No fluids
- No paramed
- No APS
- Non-disclosure
- Loss of sentinel effect



## Decreased mortality

- Tele-underwriting
- App quality
- Electronic DBs
- Business Analytics
- Predictive modeling



- Target market
- Distribution
- Marketing approach

# Pricing - how do we measure progress?

- Customer experience - requirements, time needed to place the policy, premium rates, . . .
- Target market demographics
- Issue ages
- Face amounts
- Preferred classes
- Automation – processes and requirements
- Products
- Mortality

# Self-reporting $\neq$ full disclosure

- Height and weight
- Cryptic smokers
- Avocations
- Family history
- Medical history

# “Survey shows many Americans fine with lying to the IRS, or their insurer.”

- One-in-five people surveyed\* said it is acceptable to lie about the number of miles driven each year to receive lower auto insurance rates.
- 16 percent of Americans believe it's acceptable to lie about smoking marijuana to receive lower life insurance rates.
- 11 percent of respondents say it is acceptable to lie about tobacco smoking habits to receive lower life insurance rates.

P.S. 24 percent of people are OK with withholding information about extra income from the IRS

\* February 2016 survey conducted by NerdWallet

- 2013 study published in the Journal of Insurance Medicine: **19.3%** of life insurance applicants who tested positive for cotinine self-reported as non-tobacco users.
- Impact on mortality (example)
  - Fully underwritten program: 80% non-tobacco; 20% tobacco
  - Accelerated underwriting program:
    - 1 out of 5 tobacco users does not disclose their tobacco use
    - 84% “non-tobacco”; 16% tobacco
    - Assume tobacco mortality is 200% of non-tobacco
  - “Non-tobacco” mortality will increase by **4.8%** due to nondisclosure

# And... pricing questions everywhere

- What's the value of labs?
- What's the impact of Rx, MVR, and MIB?
- Is there value in a tele-interview?
- How do I blend requirements to achieve pricing metrics and the desired customer experience?
- What's the protective value of a new data source?

*I'm being approached by a startup telling me that shoe size and choice of footwear predicts mortality.  
How do I assess?*

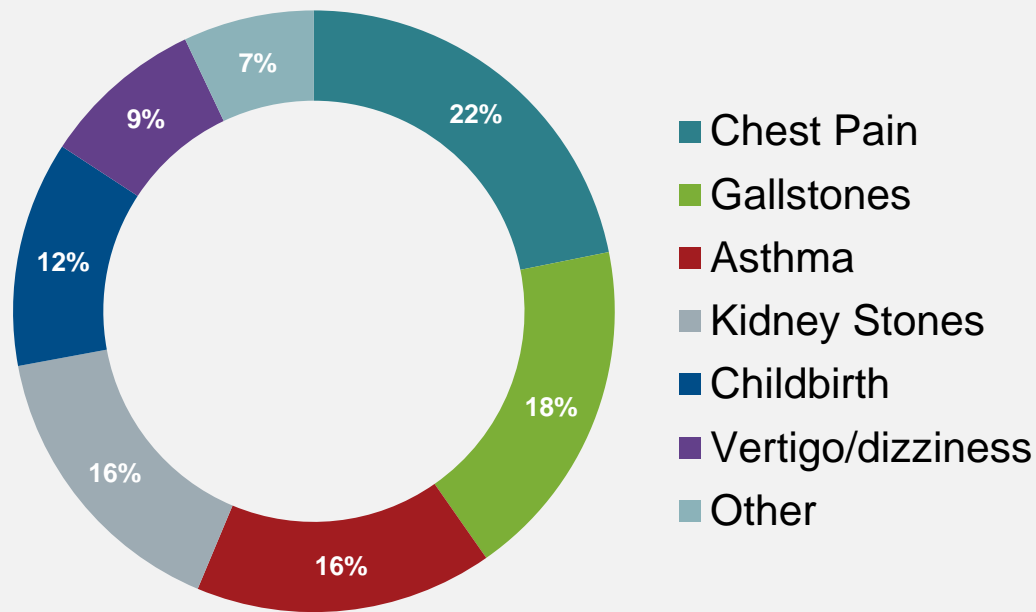
- Can I use this new data source in making an underwriting decision?
- How far can I go in using data in my target marketing?
- How do I quantify the impact of a predictive model?
- Will **Electronic Health Records** solve all my problems?

- Critical component of a well-designed program
- Robust and flexible
- Real time monitoring
  - STP rates
  - Impairments
  - Customer profile
  - Distribution
- Partner and share with your technology and reinsurance partners



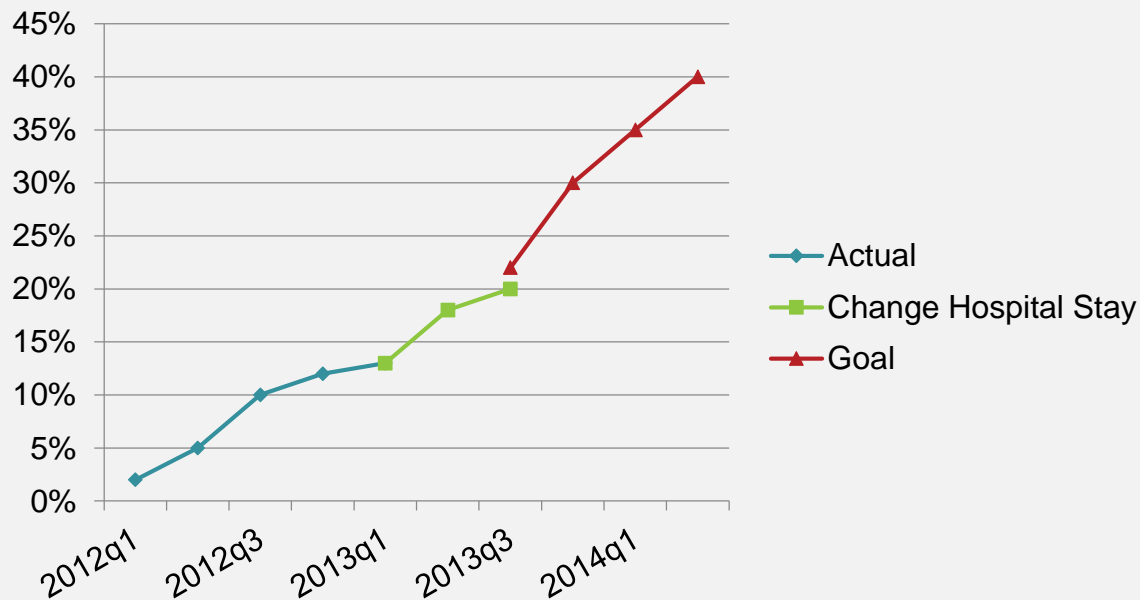
# Top reasons why cases were referred to an underwriter

### Self-reported hospital stay



# Business Analytics: Straight-Through Processing rates

### STP Rate Analysis



# Business Analytics: Improved risk selection

Reasons for Automatic Decline  
Issue ages 18-35, face amounts < \$300,000

Cause	% of Total
Prescription Drug Check	21.4%
Prescription Drugs – self-reported	12.1%
Hospital Stay	10.1%
License Suspended	7.4%
Employment	5.7%
Criminal Activity	5.2%
Change of Address	4.7%
Public Records	4.5%
MVR Check	4.3%
Insurance Application Declined	3.2%
Anxiety	2.0%
Depression	1.9%
Other	17.4%
Grand Total	100.0%

## The future of accelerated underwriting: Thoughts, observations, and predictions

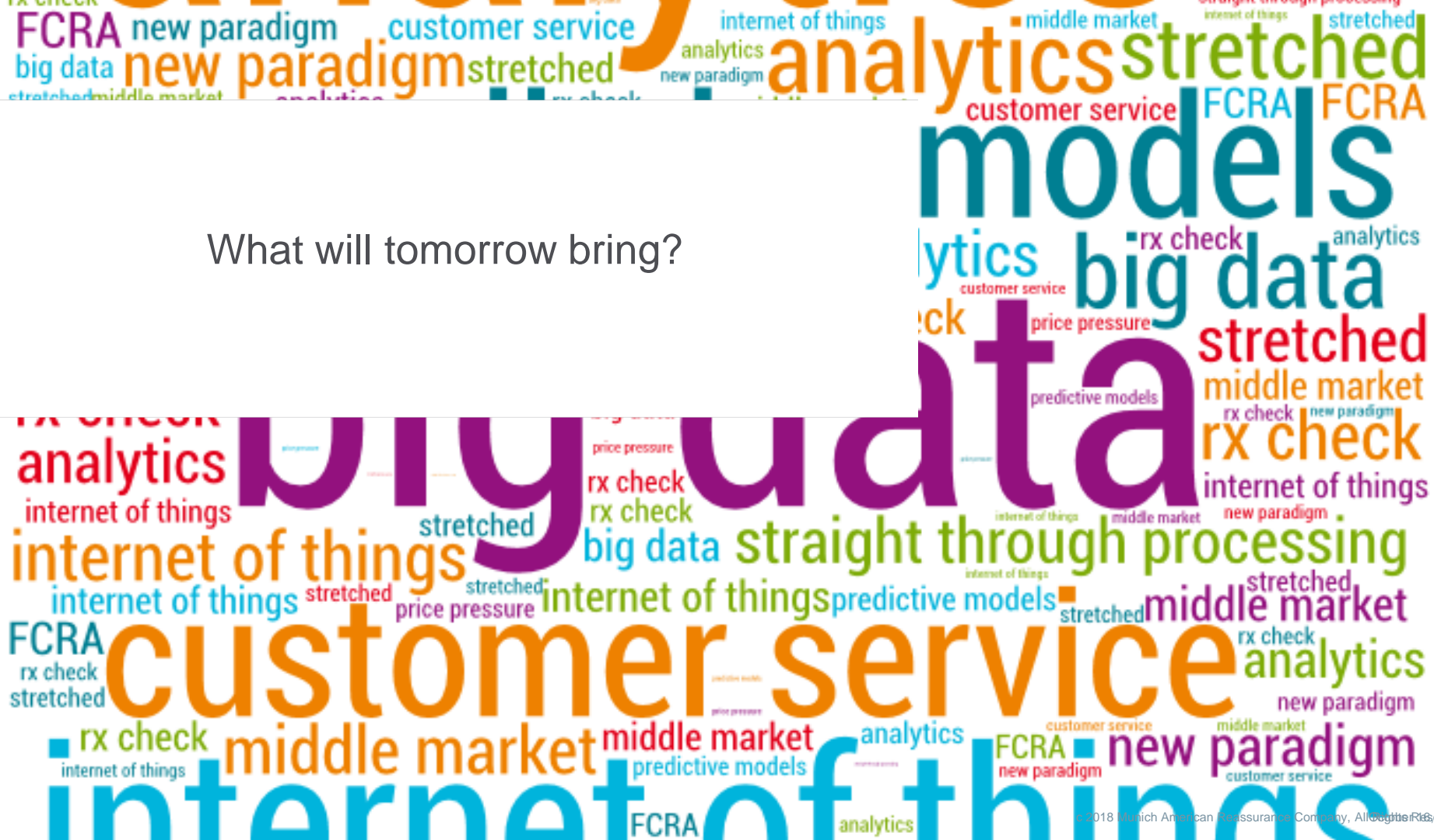
- Easy to hypothesize on how it should be done; not nearly so easy to do
- New data sources will help
  - Wearable devices
  - The “internet of things”
  - Electronic Health Records
- Predictive Underwriting / Modeling
- Effective use of Business Analytics is essential
- Some distribution channels work better than others
- Be prepared to make adjustments – you won’t get it right the first time

# The future of accelerated underwriting: Thoughts, observations, and predictions

## Predictions:

- As an industry we will get to fully underwritten pricing using accelerated underwriting
- If we don't figure it out, somebody else will  
(i.e. watch out for Google and Amazon)

What will tomorrow bring?



Thank you

