Today’s Purpose

Big Data and the Role of the Actuary

JUNE 2018

American Academy of Actuaries
Big Data Task Force

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Today’s Purpose

- Two Issues Emerged:
  - Ethical and professional issues are emerging with the increasing use of Big Data
  - Actuaries, statisticians and data scientists are involved with projects using Big Data
Big Data generally includes the “5 V’s”:

- **Volume**: Large amounts of data are collected and processed.
- **Velocity**: Data is available and must be processed at lightning speed, frequently instantaneously.
- **Variety**: The data being used comes in different forms.
- **Veracity**: The reliability of the data is not uniform.
- **Value**: The data being extracted must be usable or be able to be monetized.
Introductions

- **Dorothy Andrews**, ASA, MAAA, CSPA
  Consulting Actuary, Merlinos & Associates

- **Jed Frees**, PhD, FSA, Fellow of ASA
  Professor of Risk & Insurance, Wisconsin School of Business

- **Jim Gusczca**, PhD, FCAS
  Chief Data Scientist, Deloitte Analytics

- **Victoria Stodden**, PhD
  Assistant Professor, Columbia University

Agenda

- Overview of the Academy Report
- Discuss issues raised by the application of Insurance Technology a.k.a InsurTech
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Victoria Stodden, PhD
Assistant Professor of statistics, Columbia University

Agenda

• Discuss the leading challenges seen emerging in life insurance underwriting methodologies
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**Agenda**

- Discuss the leading challenges seen emerging in group policies, such as Worker’s Compensation
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  Chief Data Scientist, Deloitte Analytics

- **Victoria Stodden, PhD**
  Associate Professor of Statistics, Illinois School of Information Sciences

**Agenda**

- Discuss the leading challenges seen emerging with regard to privacy concerns in using big data in insurance practice areas
Professionalism for Actuaries

- The Code of Professional Conduct
- U.S. Qualification Standards (USQS)
- Actuarial Standards of Practice (ASOPs)
- Actuarial Board for Counseling and Discipline (ABCD)
REGULATORY CONSIDERATIONS

Existing Regulatory Framework

- Two categories of regulatory requirements to govern the use of Big Data:
  - To protect consumers in general
  - To prohibit discrimination against certain protected classes of individuals
REGULATORY CONSIDERATIONS
Emerging Regulatory Developments

- NAIC Big Data (EX) Working Group
- Regulatory Sandboxes – A regulatory environment designed to encourage innovation in a regulated industry
PRIVACY AND BIG DATA

Existing Regulations

Two Protected Areas:

- Financial Data
- Health Data

Insurance Data Security Model Law

*Draft Approved 2017*
What will a future without secrets look like?
Chief Media Ethicist

- Independent Agent
- Develop Ethical Brand
- Incorporate Universal Standards
- Operationalize Brand Ethics
- Monitor Company Ethical Behavior
- Identify Ethics Violations
- Remedy Ethics Violations
- Continually Evolve the Brand
The Future of Insurance Is Predictive

BY DOROTHY L. ANDREWS
InsurTech Observations

Observation 1: The Rules of Engagement have changed

Observation 2: New areas of risk have emerged

Observation 3: Advanced technology may present conflicts
InsurTech Observations

Observation 4:  Simplified U/W viewed as post-claim U/W

Observation 5:  Increase in regulatory market conduct scrutiny

Observation 6:  Regulators have a steep learning curve
InsurTech Applications

Source: https://pixabay.com/en/wearables-trackers-fitness-2316471/
The Psychology

The Vitality program operates as a health model rather than a disease model using mobile devices mediated via a technology platform.

By linking wearable devices to the Vitality program, John Hancock tied a powerful tool to self-efficacy to drive the desired outcome, improved health.

- Albert Bandura, Ph.D., Social Psychology
- Pamela Rutledge, Ph.D., Media Psychology
InsurTech Applications

Source: https://byte-technology.com/blog/tis-the-season-making-it-easy-to-give-year-end-donations/
The Psychology

Dr. Robert Cialdini would likely say this relationship is one of reciprocity intrinsically linked to social validation. Millennials solicit brands that invest in social causes they care about.

- Robert Cialdini, Ph.D., Social Psychology
Chatbots give “the illusion of companionship without the demands of friendship.”

- Liraz Margalit, Ph.D.
  Social Psychology
Big Data and the Role of the Actuary, June 2018
American Academy of Actuaries, Big Data Task Force

The Panel Discussion

Jim Guszcza
Jed Frees
Victoria Stodden
Questions