Insuretech Legal & Regulatory Challenges

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New Data & Technology Challenging Traditional Insurance

Real-time, granular data (IoT, Telematics, Apps, Social Media, etc.)

Increased computing power

Algorithms, ML, Predictive Analytics
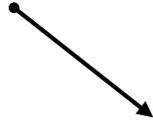
Particularized modeling

Granularized risk pooling

Specialized offerings (e.g., usage-based, on-demand, pay-as-you-go)

Straining Insurance Fundamentals:
Information Symmetry
Solidarity Principle
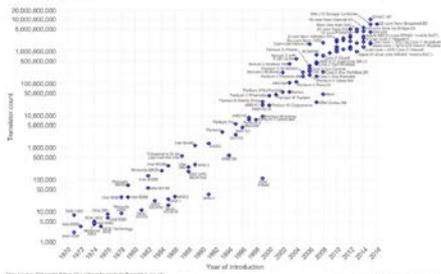
Insuretech – Benefits

Benefits:

- More timely risk evaluation
- Improved accuracy
- Rectifies some information asymmetries
- Minimizes some forms of human error (or bias)
- Enables greater pricing precision
- Creates new markets for insuring and pricing new risks

Risks

- Cyber security
- Algorithmic bias / red-lining
- Diminished / unclear culpability
- Opaqueness, obscurity of increasingly complex processes
- Reification of autonomous machine
- Technology is only as good / reliable as its design
- Privacy, Data Protection, & Consumer Rights

Insuretech – Risks

Benefits:
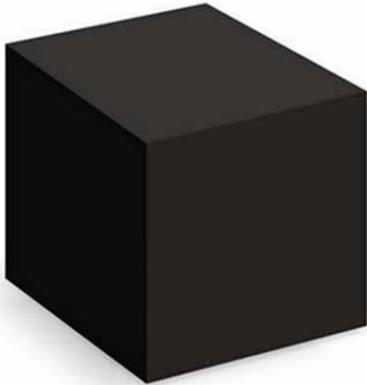
Risks

- Cyber security

- Algorithmic bias / red-lining

- Diminished / unclear culpability

- Opaqueness, obscurity of increasingly complex processes

- Reification of autonomous machine

- Technology is only as good / reliable as its design

- Other privacy, data protection, & consumer rights concerns

LEGAL & REGULATORY CHALLENGES

Bias / Disparate Impact

Unfair bias can creep up in various stages of machine learning and algorithmic modeling:
- Training data bias reflecting historical, systemic inequities
- Poorly designed algorithmic modeling methodologies introducing deliberate or non-deliberate biases
- Biased application of model outcomes can lead to unintended consequences

Lawmakers seek answers on auto insurance rates
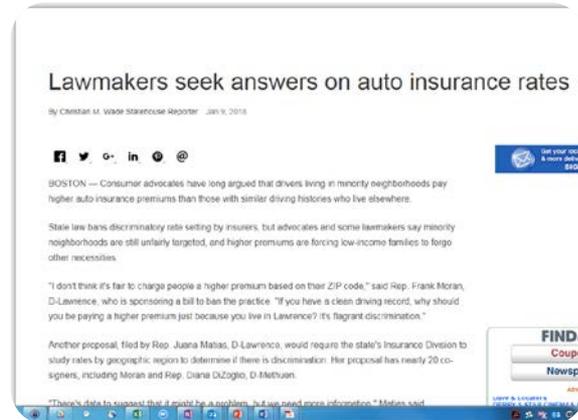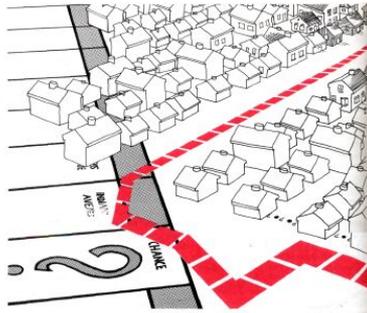
LEGAL & REGULATORY CHALLENGES

Prohibition on Solely Automated Profiling

GDPR Art. 22: Automated individual decision making, including profiling

1. The data subject shall have **the right not to be subject to a decision based solely on automated processing**, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her.
2. Paragraph 1 shall not apply if the decision:
   (a) is necessary for entering into, or performance of, a contract between the data subject and a data controller;
   (b) is authorised by Union or Member State law to which the controller is subject and which also lays down suitable measures to safeguard the data subject's rights and freedoms and legitimate interests; or
   (c) is based on the data subject's explicit consent.
3. In the cases referred to in points (a) and (c) of paragraph 2, the data controller shall implement suitable measures to safeguard the data subject's rights and freedoms and legitimate interests, at least **the right to obtain human intervention** on the part of the controller, to express his or her point of view and to contest the decision.
4. Decisions referred to in paragraph 2 shall **not be based on special categories of personal data** referred to in Article 9(1), unless point (a) or (g) of Article 9(2) apply and suitable measures to safeguard the data subject's rights and freedoms and legitimate interests are in place.

LEGAL & REGULATORY CHALLENGES

Right of Access

GDPR Art. 15: Right of Access by the data subject

1. The data subject shall have the right to obtain from the controller confirmation as to whether or not personal data concerning him or her are being processed, and, where that is the case, **access to the personal data and the following information**:
    a) the **purposes** of the processing;
    b) the **categories** of personal data concerned;
    c) the **recipients** or categories of recipient to whom the personal data have been or will be disclosed, in particular recipients in third countries or international organisations;
    d) where possible, the envisaged period for which the personal data will be stored, or, if not possible, the criteria used to determine that period;
    e) the existence of the right to request from the controller rectification or erasure of personal data or restriction of processing of personal data concerning the data subject or to object to such processing;
    f) the **right to lodge a complaint** with a supervisory authority;
    g) where the personal data are not collected from the data subject, any available information as to their source;
    h) the existence of automated decision-making, including profiling, referred to in Article 22(1) and (4) and, at least in those cases, **meaningful information about the logic involved**, as well as the significance and the envisaged consequences of such processing for the data subject.

LEGAL & REGULATORY CHALLENGES

Governance & Accountability

Who takes responsibility for data integrity issues?
- Device/App Manufacturer?
- Third-party data retailer?
- Device/App User?
- Intermediary Processers?

Who is at fault when new underwriting decisions fail/discriminate/breach?
- Algorithm Engineer?
- Data Administrator?
- Underwriter?
- Supervisor?
- Underwriting Officer?
- Executive?

Are novel organizational roles needed to assess new risks, perform accountability, oversight, & compliance operations, and respond to breaches and other failures?

POSSIBLE MITIGATION STRATEGIES

Addressing Insuretech challenges may require a comprehensive approach to categories of concern.

1. **Data Review** – If algorithmic bias partially reflects historical bias in the data that is used to develop the algorithms, then measures should be explored to understand and correct data bias.
2. **Algorithmic Introspection** – Understanding the inner logic or "explainability" of the algorithm may be essential to answering complaints about discriminatory outcomes or other breaches. Providing operational tools for "introspecting" into the algorithm, providing a lay explanation of its operations, and showing auditable records of how the algorithm has operated over time may help mitigate these concerns.
3. **Human Review** – Underwriting and pricing mechanisms may incorporate human-in-the-loop with ultimate decision making authority (including discretion to override) residing with human agent.
4. **High Level Outcome Review** – Overall metrics and other key performance indicators can be periodically evaluated against strata of sensitive groups / protected categories to determine if unacceptably discriminatory outcomes are emerging.

OPPORTUNITIES

Companies across financial services industries are grappling with these challenges.

New roles: E.g., "These new professionals [Algorithmists] would be experts in the areas of computer science, mathematics, and statistics; they would act as reviewers of big-data analyses and predictions. Algorithmists would take a vow of impartiality and confidentiality, much as accountants and certain other professionals do now. The would evaluate the selection of data sources, the choice of analytical and predictive tools, including algorithms and models, and the interpretation of results. In the event of a dispute, they would have access to the algorithms, statistical approaches, and datasets that produced a given decision."*

New operational controls: E.g., Underwriter responsibilities are re-directed at evaluating algorithmic scores against a summary view of customer profiles to confirm consistency with case specific details. Underwriter discretion can override algorithmic suggestion and feed back into the modeling environment to refine predictions.

Augmented oversight: Traditional process-oriented reviews may be overlaid with outcome-oriented oversight to ensure that high level outcomes (e.g., No. Quotes provided to sensitive category communities) are consistent with regulatory and ethical considerations.

Other:?

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* Viktor Mayer-Schoenberger & Kenneth Cukier, Big Data: A Revolution That will transform how we live, work, and think (p. 180).

Conclusion / Takeaways

✓ New data sources, new analysis and predictive methodologies, and new modes of customer interaction significantly **alter the traditional modes of insuring against risk**.

✓ Highly tailored, **individualized customer profiles** and assessments **create** potential **benefits**, but also sizeable **risks**.

✓ **Regulatory regimes** are likely to place increasingly onerous constraints on managing data, infrastructure, and addressing consumer rights.

✓ Concerns extend **beyond underwriting to risk modeling, pricing, fraud, detection, cross-product marketing, etc.**

✓ Traditional compliance models focused on process may no longer provide sufficient oversight and accountability. A **new or augmenting focus on outcomes may be required for compliance and accountability**.

✓ Good data science practices can provide a **roadmap for ethical use of novel data and other Insuretech innovations.**

// THANK YOU //

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