The Promise and Reality of Insurers' Use of Big Data

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The Center for Economic Justice

CEJ is a non-profit consumer advocacy organization dedicated to representing the interests of low-income and minority consumers as a class on economic justice issues. Most of our work is before administrative agencies on insurance, financial services and utility issues.

On the Web: www.cej-online.org

Why CEJ Works on Insurance Issues

Insurance is An Essential Financial Security Tool for Individual and Community Economic Development:

CEJ Works to Ensure Access and Fair Prices for These Essential Products and Services, particularly for Low- and Moderate-Income Consumers.

Insurance is the Primary Institution to Promote Loss Prevention and Mitigation:

CEJ Works to Ensure Insurance Institutions Maximize Their Role in Efforts to Reduce Loss of Life and Property from Catastrophic Events and to Build Sustainable Homes, Businesses and Infrastructure.

Big Data Defined

- Massive databases of information about (millions) of individual consumers

- Associated data mining and predictive analytics applied to those data

- Scoring models produced from these analytics.

Insurers were the original Big Data practitioners, collecting and analyzing large volumes of data about policyholders. With the advent of massive databases of non-insurance personal consumer information, Insurance Big Data has been transformed.

Insurers' Use of Big Data: The Promise

Big Data Can Enable Insurers to Employ New and More Transparent Pricing and Loss Mitigation Tools to Empower Consumers to Reduce Risk Exposure, Gain More Control over Insurance Costs and Build Sustainable Households, Businesses and Infrastructure.

Insurers' Use of Big Data: The Reality

Insurers' Collection and Use of Big Data is Opaque to Consumers, Largely Fails to Empower Consumers for Loss Mitigation and Creates New Risks for Consumers and Insurers Themselves.

Insurers' Use of Big Data: Promise vs. Reality

Promise	**Reality**
Transparency	Opaque
Loss Mitigation/Behavioral Change	Black-Box Risk Segmentation/Pricing
Competitive Advantage via Policyholder Partnerships	Competitive Advantage via Proprietary Pricing/Segmentation
Transparent Risk-Based Pricing to Empower Consumers	Modeling Prices on Factors Unrelated to Risk to Optimize Revenue/Profit
Promote Greater Availability and Affordability	Increased Prices for Most Vulnerable Consumers; Discriminatory Algorithms
Cybersecurity Protections	Cybersecurity Vulnerabilities

Insurers' Success Realizing the Promise of Big Data

- Life / Health Insurers Employing Personal Telematics
- Auto Insurer Telematics Providing Real Time Feedback to Drivers
- Property Insurer Telematics to Alert Residents to Impending Risk and Danger

Insurers' Failure to Realize the Big Data Promise

- Price Optimization Rating
- Black Box Telematics
- Consumers' Exposure to Insurer Data Theft

Insurance Big Data Example: LexisNexis Claims Tools

More Data Earlier: The Value of Incorporating Data and Analytics for Claims Handling at
http://www.lexisnexis.com/risk/insights/value-incorporating-data-analytics-claims-handling.aspx

LexisNexis (LN) seeks to provide a Single Point of Entry for delivering all of information directly back into a carrier's system whether from a marketing standpoint, underwriting process or especially the claims part.

LN has over 10,000 data sources that feed into its infrastructure each month and has contributed information from the industry.

LexisNexis Claims Tools

"Claims Data Fill" – deliver data and analytics directly into claims system in the claims process regarding parties, vehicles and carrier information. Used to verify information provided to insurers and provide indicators beyond the data to identify whether a social security number is an indicator of fraud or whether an address provided is a good address.

Has an analytic component at first notice of loss and throughout the claim, constantly monitoring the claim looking for fraudulent activities. Real time data verification and enhancement with fraud scoring and attributes

Example, insured was rear-ended; all I got was license plate:

Claims Data Fill takes that license plate, reach out to DMV to get vehicle registration to get VIN number, we have policy database and get the carrier and policy information, take the registered owner, go out to public records, pull back their address, date of birth, telephone number, social security, wrap that into a package and put it back into our system, 88% of the time done in less than 5 seconds.

Take minimum information provided at first notice of loss, provide a fraud score at the initial notice of loss. Daily monitoring of claim every time new information comes in, able to run various scores: fraud scores, severity score

CEJ Take-Away: Many databases and scoring models with little or no transparency to consumers and regulators and outside the scope of consumer protection laws like the Fair Credit Reporting Act.

Insurer Big Data Example: Price Optimization

Adjusting cost-based rate indications based on granular "demand models." Demand models are models of consumer price elasticity of demand and competitive alternatives. Price elasticity of demand is consumer willingness to pay in face of price change – how likely a consumer is to shop for new insurance in face of, say, 7% rate increase.

Allstate Complementary Group Rating Examples

- Drivers with same gender, rating territory and years with prior carrier but different rating classes based on "market considerations":

Birthdate	Rate Relativity	Rate Impact
4/16/1943	0.9803	
4/17/1943	1.0510	+7.2%
12/7/1980	0.9374	
12/8/1980	1.0252	+9.4%
7/4/1983	1.1784	+13.2%
7/7/1983	1.0406	

Big Data and Civil Rights: White House Report on Big Data

"Powerful algorithms can unlock value in the vast troves of information available to businesses, and can help empower consumers, but also raise the potential of encoding discrimination in automated decisions."

"Details on what types of data are included in these scores and the algorithms used for assigning attributes to an individual are held closely by companies and largely invisible to consumers. That means there is often no meaningful avenue for either identifying harms or holding any entity in the decision-making chain accountable."

Big Data and Civil Rights: White House Report on Big Data

"Because of this lack of transparency and accountability, individuals have little recourse to understand or contest the information that has been gathered about them or what that data, after analysis, suggests."

The civil rights community is concerned that such algorithmic decisions raise the specter of "redlining" in the digital economy— the potential to discriminate against the most vulnerable classes of our society under the guise of neutral algorithms.

NY Times: Secret E-Scores Chart Consumers' Buying Power

"These digital scores, known broadly as consumer valuation or buying-power scores, measure our potential value as customers. What's your e-score? You'll probably never know."

"A growing number of companies, including banks, credit and debit card providers, insurers and online educational institutions are using these scores to choose whom to woo on the Web. . . . They can determine whether a customer is routed promptly to an attentive service agent or relegated to an overflow call center."

"In effect, they (regulators/consumer advocates) say, the scores could create a new subprime class: people who are bypassed by companies online without even knowing it. Financial institutions, in particular, might avoid people with low scores, reducing those people's access to home loans, credit cards and insurance.

Public Policy Goals of Risk Classification

1. Protect Insurer Financial Condition by Minimizing Adverse Selection

2. Promote Loss Mitigation by Providing Incentives for Less Risky Behavior and Disincentives for More Risky Behavior

   Foundation of Risk Classification is Cost-Based Pricing

   Foundation of Statutory Standards for Rates – "Not Unfairly Discriminatory" – is Cost-Based Pricing

Big Data Reality

- Undermining Financial Stability of Insurers with Greater Modeling Risk

- Undermining Loss Mitigation Role of Insurance by Choosing Secrecy Over Transparency

- Exacerbating Availability and Affordability of Essential Insurance Products to Low- and Moderate-Income Consumers

- Creating New Risks for Consumers With Damage That Cannot Be Remedied

- Regulatory Tools for Oversight of Insurers' Use of Big Data Are Lacking

History of Insurer Big Data Use for Risk Classification

Old Old School Big Data: Advisory Organization Loss Costs. Oversight of Data, Advisory Organization, Analytic Techniques, Filings, Complete Transparency

Old School Big Data: Credit-Based Insurance Scores. Limited Consumer Protections for Completeness and Accuracy of Data via the FCRA, Limited Oversight of Modelers and Models, Limited Transparency

New School Big Data: Predictive Modeling of Any Database of Personal Consumer Information. No Consumer Protections for Completeness and Accuracy of Data, No Oversight of Modelers and Models, No Transparency to Consumers

Price Optimization, Other Insurer Big Data Models
Lack Key Consumer Protections

- Accuracy and Completeness of Data
- Regulatory Oversight of Data Bases
- Disclosures to Consumer: Data Used and How Used
- Consumer Ability to Challenge False Information
- Discrimination Against Low-Income and Minority Consumers
- Exacerbate Availability and Affordability Issues
- Undermine Insurance Pricing Role in Loss Mitigation

Regulatory Oversight of Insurers' Use of Big Data: Existing Risk Class Regulation Doesn't Work

Existing risk class regulation based on old old school big data, where regulators have oversight of all factors going into pricing and the data underlying the risk class analysis of rating factors and relativities.

Today, regulators simply do not have the resources to monitor all the databases and scoring models used by insurers nor access to the data underlying these new models.

If it is unrealistic to expect regulators to provide the type of historical review of advisory loss costs to new pricing tools, what is the way forward?

Regulatory Oversight of Insurers' Use of Big Data:

The current approach of allowing insurers to use any factor they want unless specifically prohibited does not fit with current data availability and technology. Regulators and legislators need to consider an approach of pro-actively identifying permissible risk classifications based not only on actuarial considerations, but also public policy goals of loss mitigation and availability.

Regulatory Big Data for Monitoring Market Outcomes

If regulators' ability to monitor what goes into marketing, sales, pricing and claims practices is realistically limited, then monitoring market outcomes is essential:

- Who is offered what insurance products at what prices in what locations?

- How are different groups of consumers treated in claims settlement?

Regulatory Big Data as a tool and strategy to improve effectiveness, efficiency and uniformity of insurance market regulation.

Big Data, Cyber Threats and the Need for International Regulatory Cooperation and Coordination

Insurers today collect and maintain far more personal information in electronic format than even five years ago, let alone 15 years ago. In addition to insurers collecting far more granular data about their insureds and their insureds vehicle and properties, insurers now obtain large amounts of non-insurance personal information from data brokers for marketing, underwriting, pricing and claims settlement. Data brokers can provide information on consumer shopping, web browsing, government records and more.

The collection and use of much of these data by insurers is completely opaque to consumers. Consumers do not know what personal information is collected, what it is used for, how long it is maintained.

Consequently, consumers have limited ability to protect themselves from loss of the data by the insurer at the same time that the potential damage from cyber theft has increased due to the significant growth in the volume and breadth of personal information collected by insurers.

While some personal data have a limited shelf life – credit card numbers – other data have no shelf life and can be used to scam or harm consumers as long as they live and even beyond. A SSN or information on medical conditions can be used for many, many years. And the nature of the harm can be different from identity theft. For example, use of the data to target scams on vulnerable populations, such as elderly with specific medical conditions promised a miracle cure. A year or two of monitoring a consumer's credit information will be inadequate assistance to consumers for losses of certain type of personal information.

Consumers need greater understanding and control over the personal data collected and maintained by insurers. Clearly, some personal information is essential for insurers to operate – to sell and administer policies. Other information, however, is not essential and consumers should have the right to opt in to allow insurers to collect and house non-essential personal consumer information.

Consumers have the right to expect that regulators will require -- and insurers will implement -- safeguards as strong for personal consumer information as for the monies that consumers pay insurers for premium. A regulator would not allow an insurer to operate if the insurer could not demonstrate an ability to account for and protect the funds collected by insurers from consumers.

Personal consumer information is as valuable or more than the monies consumers give to insurers and regulators should require strong minimum standards for data protection and data breach response. An insurer who is unable to meet these minimum standards should not be allowed to operate, just as an insurer who could not account for and protect consumer funds would not be allowed to operate.

International Regulatory Cooperation Is Essential.

Many insurers operate in multiple jurisdictions, offshore data processing and/or utilize third-party vendors operating in other jurisdictions. An insurer's cyber defense is only as strong as its weakest link and strong, consistent international cyber protection protocols are necessary for the protection of both policyholders and insurers.

Consumer Bill of Rights for Disclosure and Protection of Personal Information Collected and Maintain by Insurers

1. Transparency of Information Collected and Maintained:-You Have the Right to Know What Personal Information is Collected and To Require Destruction of Non-Essential Data

2. Strong, Minimum Standards for Data Protection: You Have the Right to Adequate and Reasonable Safeguards of Your Personal Information by the Insurer.

3. Prompt and Full Disclosure of Data Theft—You Have the Right to Be Fully and Promptly Informed If Your Personal Information Are Stolen or Lost.

4. Assistance to Consumers to Deal with Data Breach – You Have the Right to Assistance and Restitution from an Insurer Who Fails to Protect Your Data

5. Regulatory Oversight of Personal Cyberinsurance – You Have the Right to Meaningful Benefits from Personal Cyberinsurance Policies.