

Data Accuracy in Commercial Insurance

2017 Underwriting Collaboration Program
Chicago March 7, 2017



verisk
Insurance Solutions

SERVE | ADD VALUE | INNOVATE



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Agenda

Explore the impact of misclassification on the business of risk transfer

- **Premise:** Level set an understanding of the information we will explore and our premise
- **ProMetrix[®]:** Overview and how it informs our discussion today
- **Empirical Findings** on data quality
- **Potential Impact of Findings** on carriers
- **Discussion of Solutions** to the issues uncovered

Premise



Premise for our dialogue today

- **Inconsistent data** persists in commercial underwriting in terms of **quality, reliability, & completeness**. The impact is significant.
- Data **sources**:
 - Premium paying clients
 - Distributors
 - Insurance company resources
 - 3rd party vendors
- **Solutions** are coalescing which may begin to improve data quality

ProMetrix



Overview of ProMetric

- Level set an understanding
- Customer profile
- Field verified data
- Diagnostic tool – Portfolio Assessment



Level set an understanding of ProMetrix

ProMetrix: Database, reports, analytics, and order platform (formerly SPI+)

- ~ 3.7 million field verified commercial building locations
- ~ 3+ million from other sources
- ~ 26 million businesses
 - 7 million occupants
- Delivers specific Fire loss cost for buildings and other key analytics
- > 150M automobile sightings per month
- > 5+ million reports generated in 2016

Underwriting Markets Served:

- Commercial Property
- Businessowners
- Workers Compensation
- General Liability
- Commercial Auto

Customers:

- > 225+ insurance company clients
- 49 of the Top 100 Distributors based on revenue



Customer Profile

Insurance companies

- Standard lines companies
 - Admitted business
 - National and regional footprints
 - Publicly traded, privately held, or a mutual
- Excess and surplus lines companies
 - Non-admitted business
 - National or regional footprint
 - Publicly traded or privately held
- Specialty companies
 - Niche focus

Distributors

- Agents and brokers
- Wholesale brokers
 - Managing General Agents (MGA's)
 - Managing General Underwriters (MGU's)
- Program Administrators

We'll be sharing aggregate results of analysis we have been completing across the insurance company segments related to their data accuracy



Focus of Today's Discussion

- Client engagements have focused on Commercial Property until recently
- LOBs in development
 - General Liability
 - Commercial Auto
 - Workers Comp
 - Businessowners

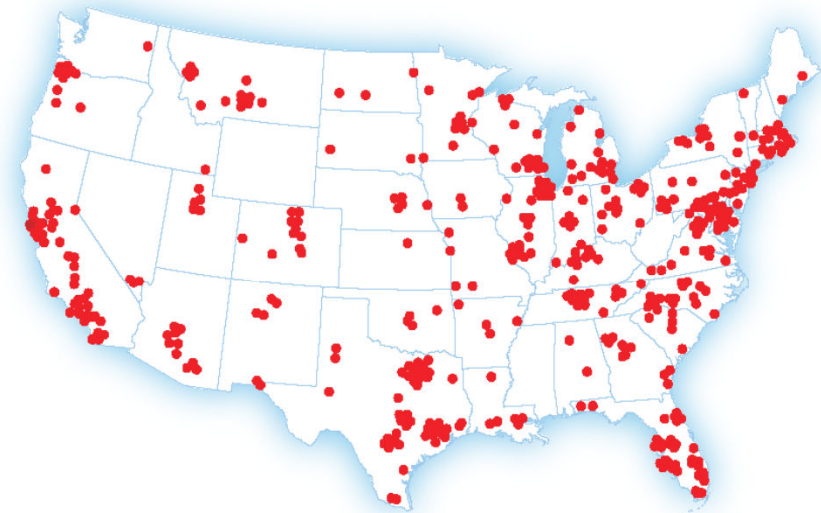
Similar Characteristics in Business Process, preliminary observations on additional lines of business



Field verified data

National breadth | Local depth

- **550 F/T Verisk field staff** with an average of **11+ years** conducting property evaluations
- **Property assessments** performed for lenders, insurers, government agencies, and community hazard mitigation
- Experience working across **all commercial property types**



● = Office or at least one Field Rep



Portfolio Assessment

– sophisticated diagnostic tool

- Snapshot assessment of book of business
- Analysis using both carrier and appended data

Portfolio Improvement

- Data quality assessment and verification
- Building and business information verification
- Risk profile
- Identify risk factors
- Benchmark characteristics against industry norms

Portfolio Expansion

- Cross sell opportunities
- New classes and/or geographies for expansion

Portfolio Analytics

- Benchmark key property metrics vs. state or industry
- Benchmark carrier loss cost, loss ratio, claim severity, claim frequency vs. peer group and/or vs. industry

Portfolio Efficiency

- Agency assessment
- Loss control



Portfolio Improvement

Services	Area of focus	Description
Portfolio Improvement	Building Characteristics	<ul style="list-style-type: none"> Verify policy listed characteristics of the building including size, construction, etc
	Address Verification	<ul style="list-style-type: none"> Verify policy listed address is the actual address where the business is located
	Business Classification	<ul style="list-style-type: none"> Identify businesses misclassified Identify additional lines of business that are undesirable
	Occupancy and Vacancy	<ul style="list-style-type: none"> Verify single or multi-tenant building Identify unreported occupants
	Verify Protection Systems	<ul style="list-style-type: none"> Verify policy stated protection systems – sprinkler systems, etc.
	Location Specific Information	<ul style="list-style-type: none"> PPC misclassification Crime exposure Policy holder distribution by geography PPC distribution
	Data Append for Cat Impact Analysis	<ul style="list-style-type: none"> Provide the key property characteristics needed for catastrophic modeling

Empirical Findings





Drivers in the marketplace

Competition

- New competitors and models
- Need to respond quickly
- General downward pressure on pricing and expansion of terms
- Consolidation

Technology

- Driving change – creating a gap in quality decision making or enhancing it?
- Fostering and enabling competitiveness in market
- Enabling higher volumes of work/transactions to be administered efficiently

Data

- Spectrum of sources in addition to Distribution channel and premium paying clients
- Shaping new predictive analytics
- Varying levels of data reliability
- Presenting a value proposition for more informed decision making – but is it?

Profitability

- Achieving technical underwriting profit in a low interest rate environment
- Efficiently handling the higher volumes presented
- Adherence to guidelines
- Risk insight and selection keys



Scope of analysis

- All Commercial Lines
 - ~ \$240B in Net Written Premium
- Commercial Property market size
 - ~\$35B in Net Written Premium
 - ~ 6.5M locations
- Analysis performed in database of ~3.7M field verified commercial property locations
- Analyzed ~2 million commercial property characteristics for variety of building types, sizes & locations
 - Hit rate ~65%



Overage vs. Leakage

	Exposure	Premium
Overage	<ul style="list-style-type: none">Net retention is <u>higher than expected</u>, impacting profitability and potentially reinsurance relationships	<ul style="list-style-type: none">Carrier lists a property as a frame construction building when it is actually a masonry building.
Leakage	<ul style="list-style-type: none">Premium calculated on inaccurate PPC will not reflect true impact on exposure and most likely be <u>inadequate for risk assumed</u>.	<ul style="list-style-type: none">Carrier lists a property as a having a PPC score of 4 when it should actually receive a score of 8.



Summary - Portfolio Assessment Analysis

Rating Information	Analysis Identified
Construction Class	<ul style="list-style-type: none"> • ~40% of the carriers' risks had incorrect construction class
Protection	<ul style="list-style-type: none"> • 15% of the carrier risk were listed in an incorrect PPC • Many of the sprinklered risks received sprinkler credit when not warranted
Square Footage	<ul style="list-style-type: none"> • ~80% of the carriers' risks had incorrect square footage. • Percentage decreased as allowance for error increased, but there are gross mismatches
Limits	<ul style="list-style-type: none"> • ~75% of the carriers' risks had underestimated limit for Insurance to Value

20% Underpriced risks and related exposure mis-statement
Adverse Selection

14% Overpriced Risks
Risk Retention Issues, and related exposure mis-statement

\$1.3B

In annual premium leakage and related exposure mis-statement



Select variables reviews

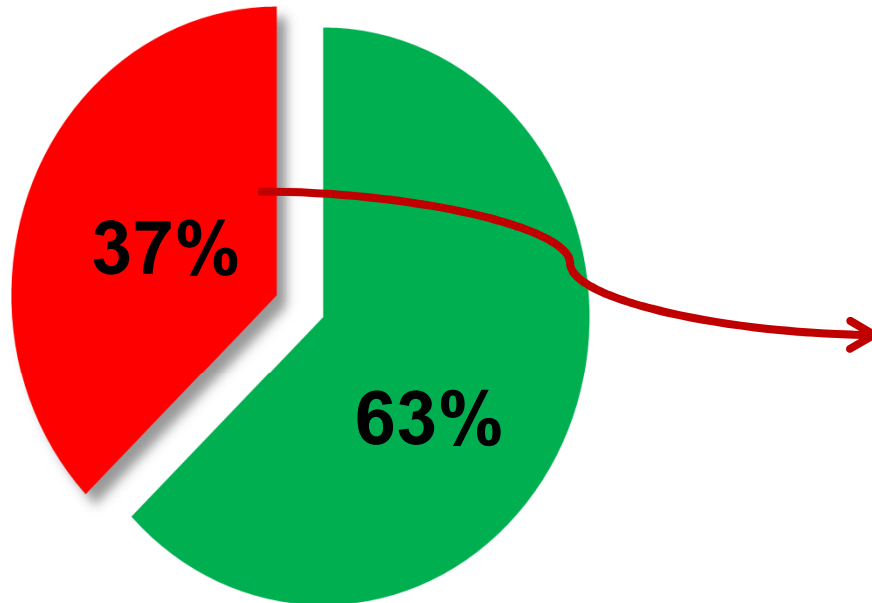
- Construction
- Protection
- Square footage
- Insurance to Value





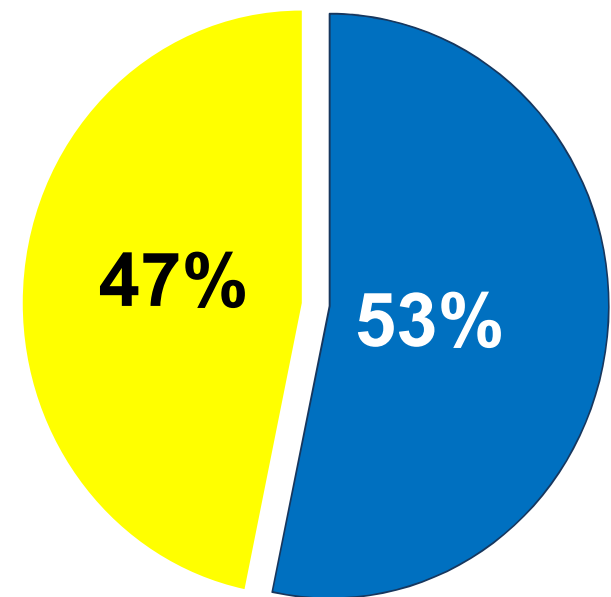
When compared to field verified data, nearly 40% of the records have incorrect construction class information

Verisk's Assessment of Carrier's Records



■ Verified Accurate ■ Incorrect

Inaccurate Records' Impact on Premium



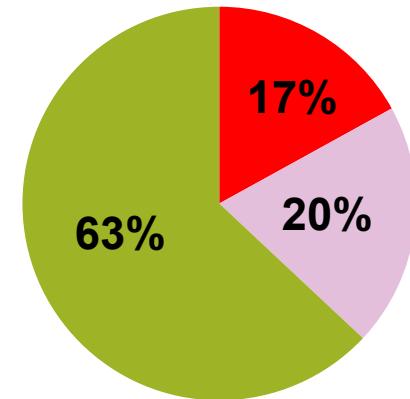
■ Prem Overage ■ Prem Leakage



Severity of Construction Class Mismatch

		Carrier Listed Construction Class					
		Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
Verisk Construction Class	Class 1	27.9%	5.8%	3.7%	1.6%	0.1%	0.1%
	Class 2	4.2%	13.7%	1.3%	2.1%	0.1%	0.1%
	Class 3	3.0%	1.9%	10.3%	1.8%	0.1%	0.2%
	Class 4	2.0%	3.5%	1.9%	9.4%	0.1%	0.2%
	Class 5	0.4%	0.3%	0.2%	0.3%	0.7%	0.1%
	Class 6	1.1%	0.4%	0.2%	0.4%	0.1%	0.8%

Impact on Premium



- Premium Leakage
- Premium Overage
- Match

Construction class:

Class 6 is the “better” construction class = lower rate or loss cost

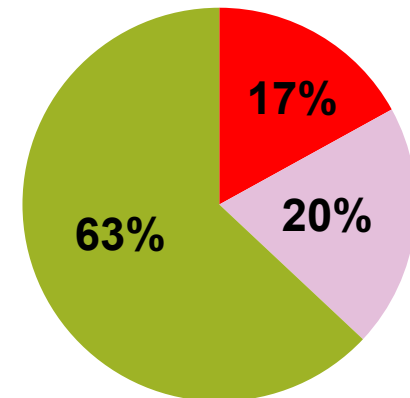
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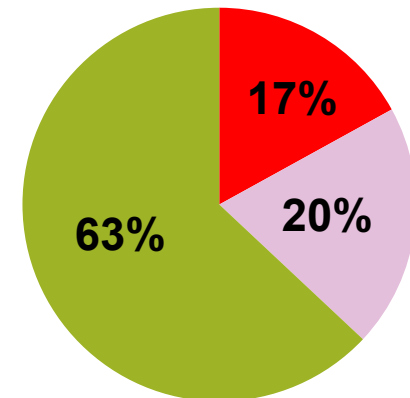
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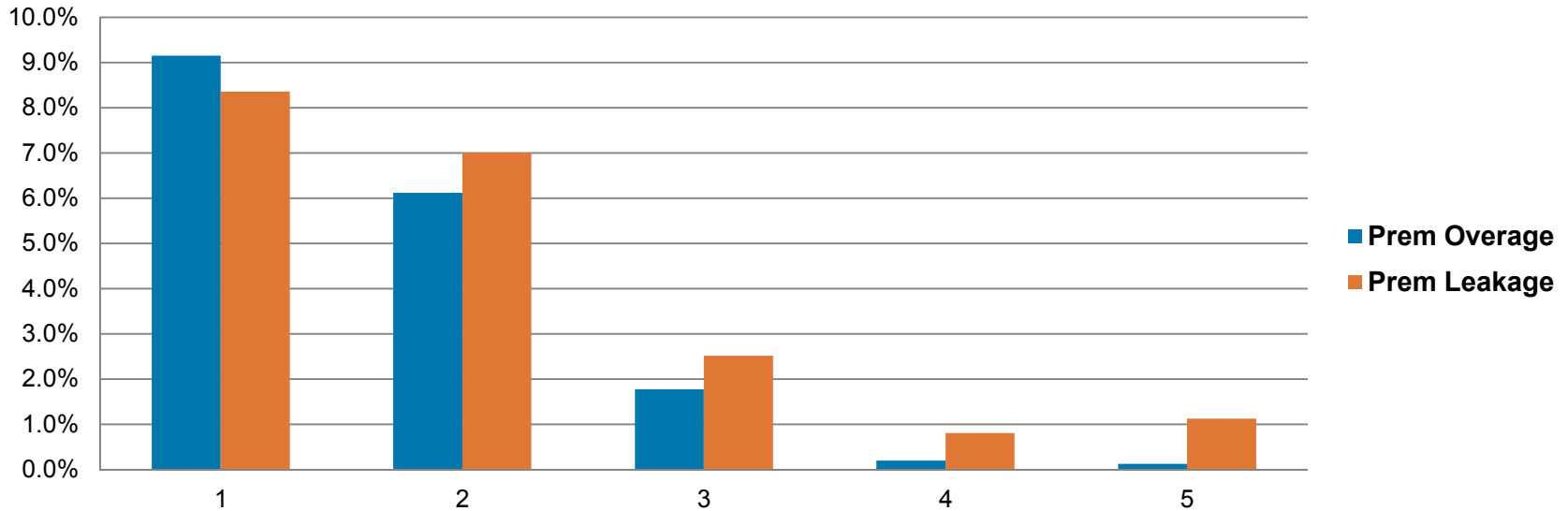
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Premium impact

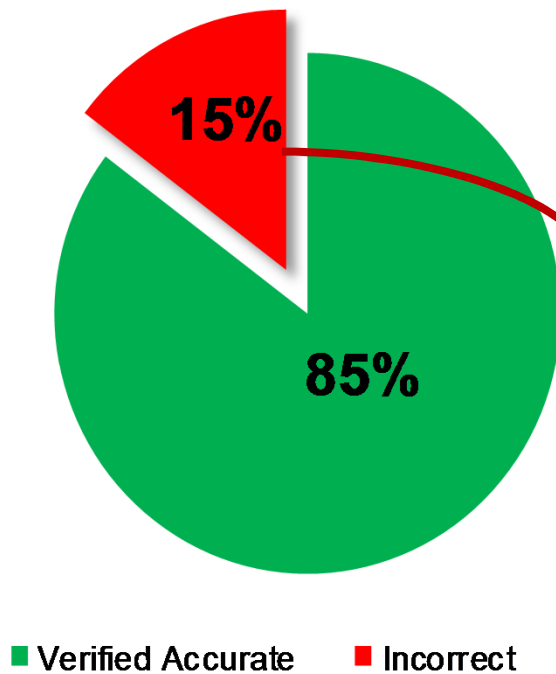


Actual Verisk Verified Construction Code	Percent of Risks Examined	Percent Premium Error
1	39.16%	-5.96%
2	21.53%	0.69%
3	17.23%	6.31%
4	17.09%	10.04%
5	1.97%	17.70%
6	3.02%	34.53%

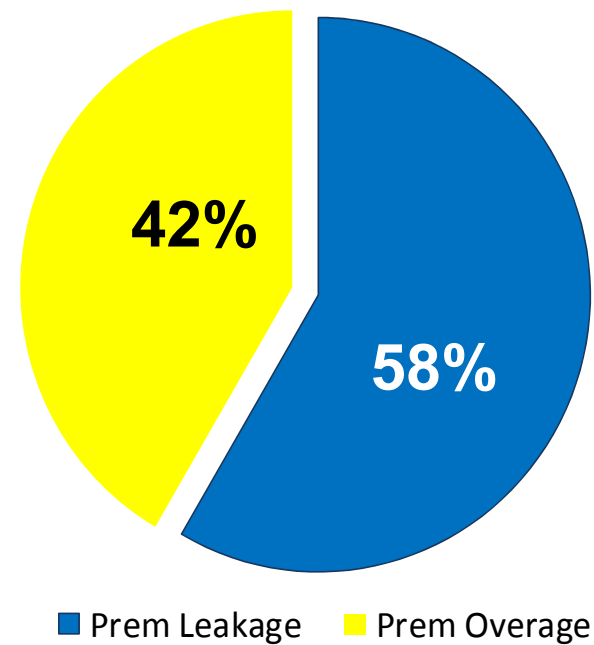


When compared to Verisk field verified data 15% of the records have incorrect PPC information

Verisk's Assessment of Carrier's Records



Inaccurate Records' Impact on Premium





Mild Mismatches

PPC scores tend to gravitate towards more favorable scores over time ,thus accounting for a large percent of the premium overage we see.

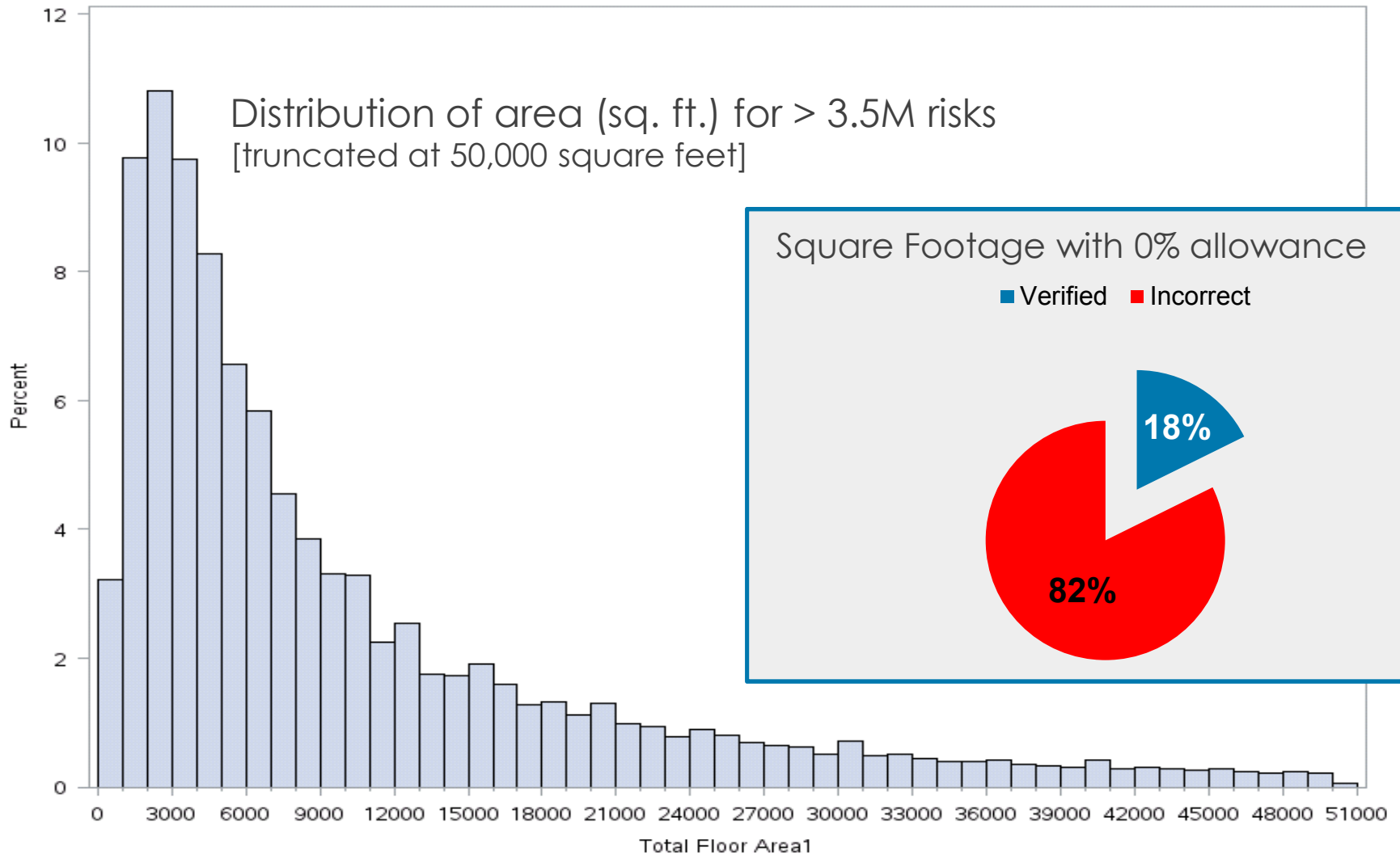
Frequency of PPC score update may be a concern. For instance, upon renewal.

Large Mismatches

PPC scores are typically geographically determined at the community level.

Buildings with a needed fire flow greater than 3,500 gallons/minute deserve a second look to evaluate the water, fire flow availability, hydrant spacing, and the Fire Department to determine if the community based PPC score should be reduced for that specific building.

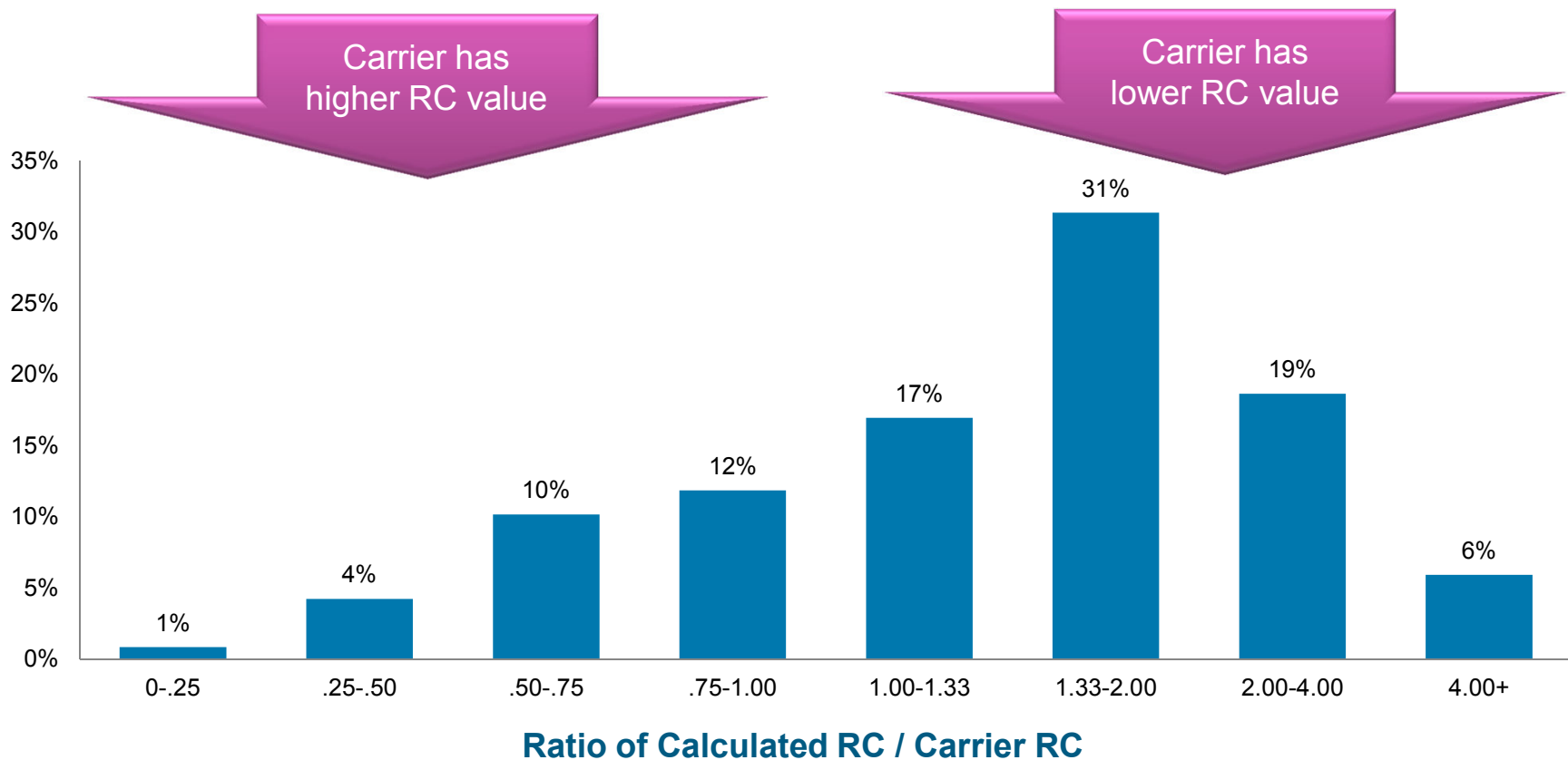






The majority sample risks are written at Replacement Value Costs that are likely too low

The replacement cost amount represents the estimated cost to rebuild the structure (s) in the geographic market in accordance with current building codes following a total loss. Replacement cost amounts includes pricing for labor, materials and contractor's overhead and profit; it does not include costs for excavation or land value.





Impact of misclassified data

- Exposure
- Pricing
- Internal insurer information and data going forward
- Risk decision making
- Source of misclassification – systemic





Exposure impact example

Bound Info on 1/1/2016

- Occupancy – Commercial Real Estate - Motel
- Construction – Joisted Masonry
- Protection – Sprinklered structure
- Public Protection Class – 4
- Values Insured - \$5,000,000 (Building and Contents)
- Coinsurance – None
- Annual Gross Written Premium (GWP) - \$5,000
- PML – 15% - \$750,000
- MFL – 60% - \$3,000,000
- Net Retention – 100%

Claim on 3/3/2016

- Loss - \$3 million after deductible
- Sprinklers response inadequate
- Construction – Frame
- Public Protection Class – 8

Impact of Misclassification

- UW guidelines for a Frame risk call for a mandatory 50% cession to a quota share reinsurance facility.
- In this scenario, net retention would be \$1.5 million versus \$3.0 million
- Though nominal, lost ceding commission income



Additional LOBs we are delivering
solutions for:
General Liability and Commercial
Auto





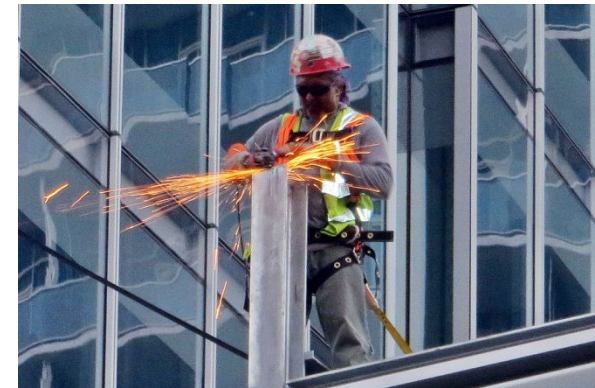
NAICS Accuracy

40-50% of 2-digit NAICS is typically classified incorrectly

- ProMetrix has information on 26 million businesses
- Supported by manual verification by a strategic business partner



OR

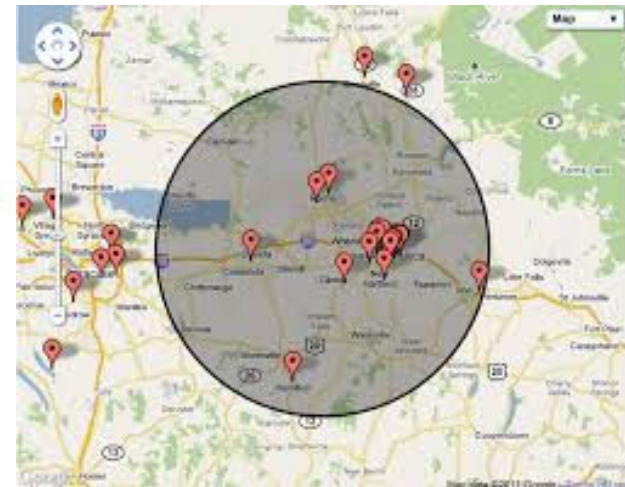


Recent engagements evidenced over 48% of a business's 2-digit NAICS were classified incorrectly; 79% of 6-digit NAICS were incorrect.



Commercial Auto - Visual Insights

Identify potential radius and territory mis-representation for each vehicle on a policy



- Over 150 million sightings per month
- Picture of the vehicle and license plate

- Date / time stamp
- Lat / Long
- Analytics to identify vehicles with potential radius and territory mis-representation



Commercial Auto - Severity matrix

Basic rules can prioritize potential premium leakage due to radius misclassification

Violations	≥10	-	-	-	-	-	-	-	-	-	-	26
	9	-	-	-	-	-	-	-	-	-	-	-
	8	-	-	-	-	-	-	-	4	-	-	-
	7	-	-	-	-	-	-	6	1	-	-	-
	6	-	-	-	-	-	17	3	-	-	-	1
	5	-	-	-	-	15	2	-	-	-	-	1
	4	-	-	-	30	2	2	-	1	1	2	-
	3	-	-	38	5	3	1	1	1	1	-	-
	2	-	132	19	8	3	2	1	1	-	1	-
	1	338	53	33	15	8	2	2	-	2	6	-
	0	1,780	766	476	247	122	99	51	39	24	151	-
		1	2	3	4	5	6	7	8	9	≥10	
		Sightings										

5 vehicles were sighted 4 times – 3 of which were outside the policy radius

Recent engagements reflected over 80% of businesses classified as local delivery (NAICS 48411) are actually long distance trucking companies (NAICS 48412)

Impact of Our Findings





Areas affected by poor data quality

- Profitability
 - Exposure assessment
 - Rate Adequacy – Earned Premium generation
 - Potential reinsurance need and expense
- Operations
- Claims administration
- Regulatory compliance



Profitability - Exposure Assessment

- Exposure Assessment
 - Setting terms, conditions and rate
 - Validation of exposure basis
 - Risk survey or safety plans
 - Loss estimates and accumulation of risk
 - Capital allocation



Profitability - Rate Adequacy

- Earned Premium base
 - Sustainability of a portfolio
 - Positioning in the market
 - Key financial ratios
- Distributor relationships
- Sustainability of the business



Profitability - Reinsurance need & expense

- Aggregate limits purchased and their cost
- Individual risk retentions and the benefit to ceding underwriter
- Type of coverage purchased - following form versus carve out protection
- Allocation of treaty cost



Additional impacts

Operations

- Re-work
- Mis-coding
- Cash flow
 - Collection issues
 - Non admitted penalties to surplus
- Allocation of resources

Claims Administration

- Application of coverage and reserve setting
- Clarity among named insureds' and additional named insured's
- Aggregate erosion
- Efficient and compliant claims handling and adjustment
 - Definition and/or application of "Occurrence"
 - Aggregate Erosion record keeping
 - Bad Faith
 - Ex Gratia Payments

Regulatory Compliance

- Using appropriate Loss Cost
- Claims payment completeness and timeliness
- Achieving contract compliance efficiently
- Achieving Broker or Agent Licensing standards
- Condition of portfolio's for Market Conduct examinations

Possible Solutions





Solutions available today for Commercial Lines underwriters to improve quality

- Policy Life Cycle Solutions
 - Rate, Quote, Bind and Issue – provides ability to scale, develops consistency, positions future automated workflows
- Consumption of 3rd Party data, replacing traditional sources
 - Embedding 3rd party data in the business process
 - Delivering data through Application Programming Interface (API) solutions directly to point of sale
- Data sources can be consolidated
- Frees distributor time for other more value added activity– bringing more focus to their efforts



Considerations when using 3rd Party data

Proliferation of data and analytics can help streamline the underwriting process to achieve accuracy, scale and profitability

Potential methods to assess the **reliability** of 3rd party data?

- Depth & Breadth
- Source of 3rd party data
- Pre-verified by data supplier?
- Currency of the data
- Reputation and reviews
- Results of spot checks
- Use of for the data
 - portfolio vs. policy level
 - Marketing vs. Pricing
 - Intended use vs. creative application



Define your risk tolerance for reliability of data in advance – measure solutions against this value



Embed reliable 3rd party data in the business process

Application Programming Interface (API)

- Market responsiveness - Speed
- Elimination of manual entry improves quality
- Improving underwriting productivity
- Agent friendly – frees up time





Considerations when implementing API

- Match Rate
- Address, Business Level differentiation
- IT constraints
- Cost/Benefit
- Where is the “cut-off” when using analytics
- Automate Edits/Checks
- Minimizing #of vendors/Maximizing Quality
- Licensing commitment



Case Study: Straight Through Processing Implementation

- **Client Type**
 - Mid size commercial writer using a web portal for Distributor access to a newly introduced product
- **Business Scenario**
 - Revenue and profit targets were not being achieved
 - Random underwriting and operational audits had identified data quality issues in the business process
 - Distributors were unhappy with the number of times they were able to fully utilize the portal for a complete transaction.
- **Client Request**
 - Assist their diagnosis of situation and recommend solutions which would optimize the web portal, capture the benefits of improved data quality in their business process, and reduce the internal cost of generating a commercial package policy
- **Verisk Deliverables**
 - Gap analysis of current state for submission to bind steps in business process, with recommendations for improvement.
 - Application Programming Interface delivery of Verisk ProMetrix data and analytics into our clients cleared submission que and rating process
 - Development of more detailed underwriting guidelines to better communicate market interest.
 - Business rules facilitating straight through processing of 100% of targeted risks meeting underwriting guidelines and a referral process for targeted risks not meeting Underwriting guidelines
- **Result**
 - Within 90 days of our engagement client was able to begin to achieve their planned metrics on newly submitted business.

Thank You

