CLOUDERA

Insurance Underwriting

Assessing risk with data and AI

Table of Contents

CLOUDERA

Introduction

"The customers' world is changing, becoming more digital and interconnected via global supply chains. And with rapid digitization, the availability of alternative and predictive data is increasing, which makes risk selection increasingly competitive and facilitates more rapid adjustments to underwriting strategies."

Deloitte

Opportunities to Optimize Underwriting

Carriers are under pressure to improve underwriting and risk selection while at the same time provide an optimized customer experience. Innovations in the use of data, analytics and AI are driving advancements in key use cases.

Analyze the possible paths to improvement in each of these areas to identify and focus improvements in underwriting using Data, Analytics and AI:

- Risk Modeling
- Customer/Claim Segmentation
- Optimization of Physical Survey/Inspections
- Risk Similarity/Risk Profile
- Related Entity Analysis
- Multi-line "profitable" class code analysis
- Risk engineering automation

Digitized Underwriting Leveraging Data and Analytics:
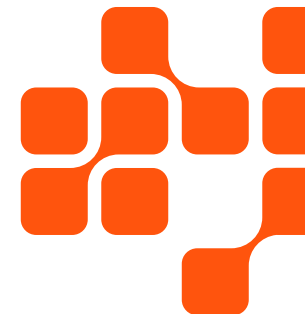
Improves loss ratios

3–5 PTS

Increases new business premiums

10%–15%

Increases retention

5%–10%

P&C EMEA and NA Carriers, McKinsey

CLOUDERA

# Underwriting Using Data — Make it More Science Than Art

To realize improvements, underwriters must assess risks within appetite at the right rates, terms and conditions. This means gathering the best possible data for an informed decision to be possible, including traditional batch sources and real-time data, in various formats - structured or unstructured.

Call Center	News Feeds	Drone Imagery
Chatbots	Telematics	Cyber Threat Metadata
Clickstream	Biometrics	
Geo Location	Sensors/Wearables	
Social Media	Video/Photo/Audio	

FNOL Intake	Claims Notes	Weather/Environment
Deposition	SIU	Seismic Data
Transcriptions	TPA	Catastrophic Event Data
Notes/Diary	Forms	Asset Descriptions
MRI/X-Ray	Bills	

Core	Agency	Terms & Conditions	Obituaries
Claims	CRM	Customer Profiles	Death Certificates
Underwriting	Risk	Submission	Claims Payments
Billing	Quotes	Capacity	Prescriptions
Policy	Rates	Reinsurance	Financial Statements

"

"When underwriters have better access to quality data, more advanced analytics and high-value risk insights will follow. Further, with intake processes digitized, underwriters can spend more time analyzing data, rather than gathering and manipulating it."
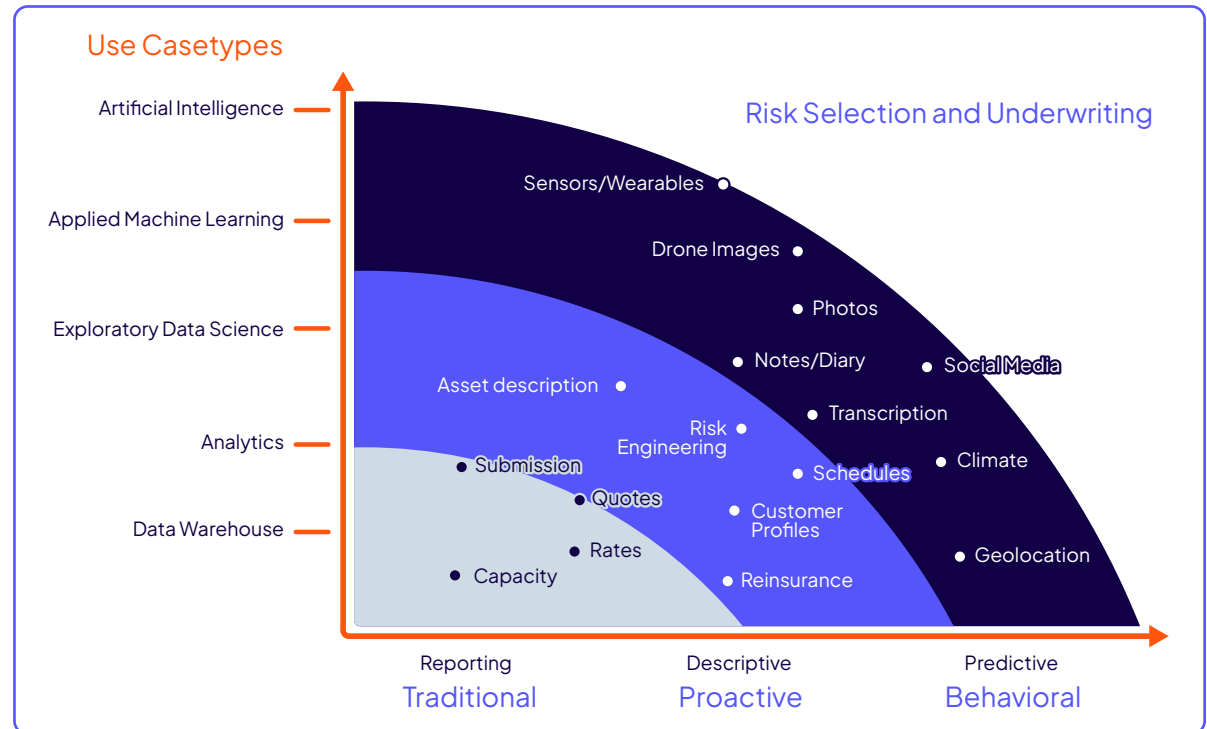
EY

CLOUDERA
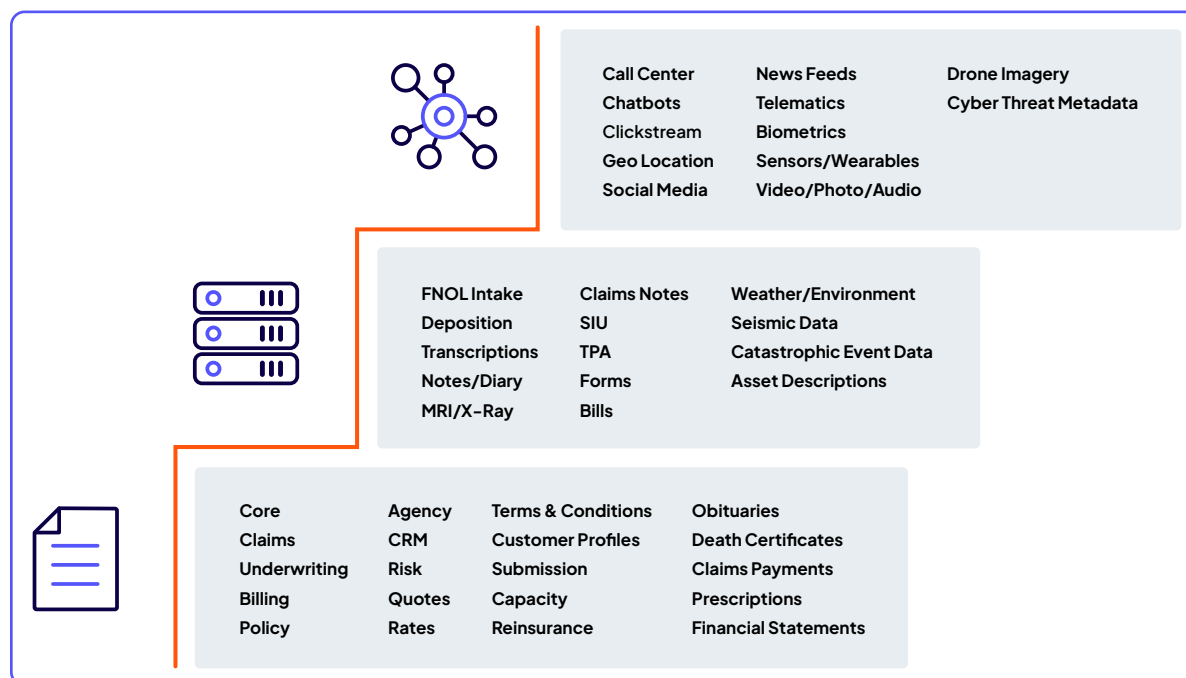
Embrace and Expand Machine Learning and AI

Applying Artificial Intelligence and Machine Learning to automate tasks and analyze greater quantities of data assists in better risk decisioning. Deploying AI and ML starts with enabling quality **reporting** — better understanding insureds and prospects. The next step leads to the ability to perform exploratory, **descriptive** analytics, "why is this happening", etc. Finally, the end goal is to enable proactive, predictive analytics — "what if" — using applied ML and AI to better predict what will happen and recommend action to prevent/manage activities as necessary.

> **"As companies critically examine their underwriting, many have observed that the 80/20 principle holds true: much less information is required to place applicants into the current rating categories, especially when new data and analytical techniques are employed. Yet the industry continues to adhere to the status quo, using a sledgehammer to crack a nut."**
>
> McKinsey

Use Casetypes

Risk Selection and Underwriting

- Artificial Intelligence
- Applied Machine Learning
- Exploratory Data Science
- Analytics
- Data Warehouse

Sensors/Wearables · Drone Images · Photos · Notes/Diary · Social Media · Asset description · Transcription · Risk Engineering · Climate · Submission · Schedules · Quotes · Customer Profiles · Rates · Reinsurance · Capacity · Geolocation

Reporting — Traditional
Descriptive — Proactive
Predictive — Behavioral

Commercial Lines Underwriting
— An Illustration

Commercial insurance is an early adopter of advanced techniques to improve risk assessment and monitoring. Providers are maturing in the use of new data and analytical techniques. These advanced techniques lead to increased underwriting precision and competitive pricing including incentives and premium discounts.

Traditional approaches use standard categories and historical data

Proactive approaches layer on the addition of interactive, preemptive programs.

Behavioral coverage includes interactive streaming data and activity monitoring enabling coverage based upon specific workstyle and behaviors.

Use Casetypes

Risk Selection and Underwriting

Artificial Intelligence

Applied Machine Learning
- Geolocation

Exploratory Data Science
- Interactive Work Safety Programs
- Biometrics

Analytics
- Video Promotion

Data Warehouse
- Class Codes
- Loss History
- Safety Quiz
- Regulated Work Safety Programs

Reporting — **Traditional**
Descriptive — **Proactive**
Predictive — **Behavioral**

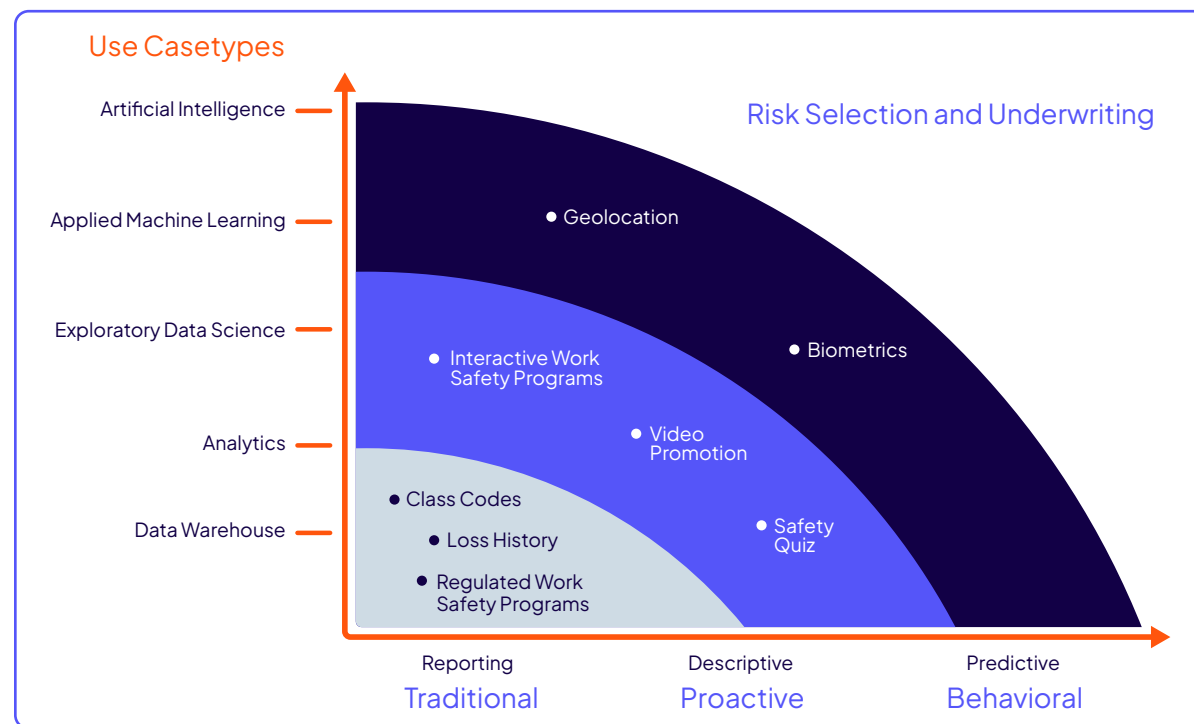## Commercial Underwriting is Undergoing Major Change:

80%

of executives expect BIG change in 5 years

94%

in 10 years

SMA Research, The Current State of P&C Underwriting Preparedness for Digital Transformation

CLOUD≡RA

Cloudera

Enhance Underwriting With an End to End Data Lifecycle

Cloudera is a hybrid data platform that delivers faster and easier data management and data analytics for data anywhere, with optimal performance, scalability, and security. Cloudera enables modern data architectures with a unified data fabric, open data lakehouse and scalable data mesh.

**Cloudera Data Flow —** Collect any type of data (quotes, video, sensor or customer information) in batch or streaming modes.

Cloudera Data Engineering — Normalize raw data into a common representation for downstream application use.

Cloudera Data Warehouse — Store all transactional data, enterprise data and related elements to create a historical reference repository, or access using APIs.

Cloudera Operational Database — Update your proprietary applications with a modern open source database.

Cloudera AI — Build and train models, create behavioral scoring model to identify anomalies based on customer data (claims data, policy information, etc.). Apply network and/or graph analysis to anticipate and predict unlikely behavior.

Shared Data Experience — Enable a Shared Data Experience; consistent security and governance.
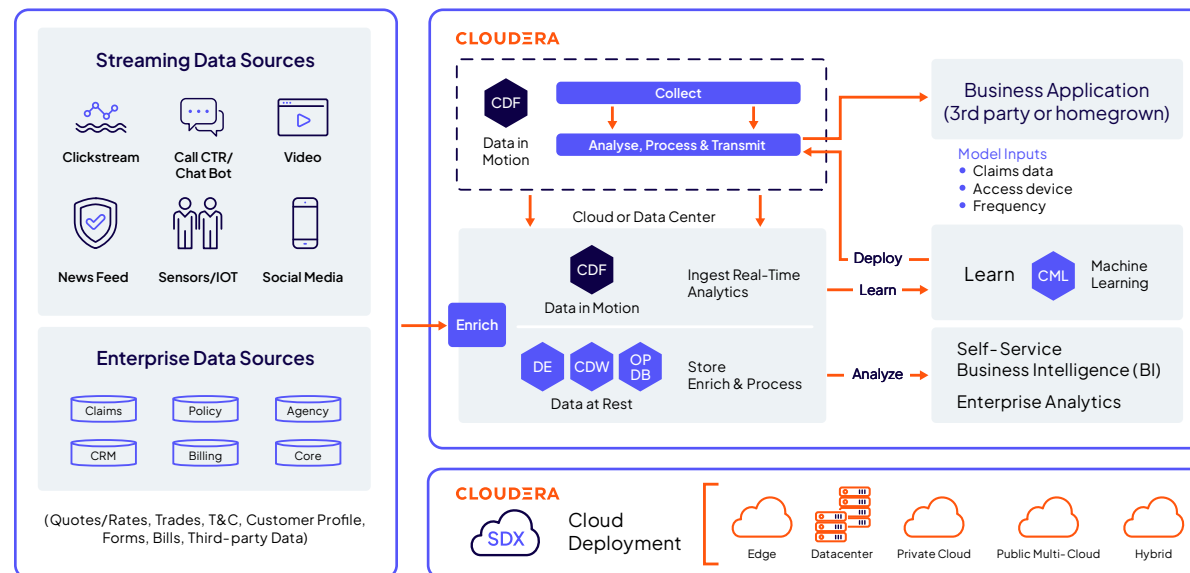
CLOUDERA

Analytics In Action

Insurance providers around the globe use <u>Cloudera</u> as a foundation to improve underwriting and claims processing, create personalized products and more efficiently address regulatory requirements.

Success Stories

P&C/General Personal Lines Carrier

Monetization of Connected Car Data

This US carrier launched a stand-alone division to provide telematics analytics capabilities to third parties as part of a new market opportunity related to Data as a Service (DaaS).

With Cloudera, they are using new data sources such as driving behavior, GPS data, route risk and road network safety to enhance analytical capabilities. For home and life, they monitor activities related to the home environment and fitness/health tracking.

### European Multinational Insurance Company

Central ML and AI Factory

Finding ways to be more efficient for both customers and insurance advisors to connect and collaborate is paramount. This carrier had a need for a central machine learning artificial intelligence factory across data science teams to collaborate and access use cases. The company turned to the Cloudera running on Microsoft Azure. By implementing this new platform they created self-service data and compute environment. Teams now had the same user experience between on premises and cloud enabling consistent and secure experiences no matter when and where data scientists need to work. Now with this new modern data architecture with Cloudera, the company has been able to build a central AI factory across all teams.

Read the success story.

"There's value in knowing what happens next. We're pushing the boundaries of predictive analytics, leveraging data and modeling expertise to help you evaluate driving risk and make smarter decisions in real time. It's how we're revolutionizing transportation — and that's just the start."

CEO & President
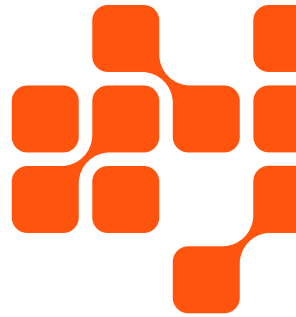
CLOUDERA

Cloudera for Insurance

Effective, efficient underwriting requires a modern, flexible approach to manage customer profiles and risk appetite variables. Effective data management means the ability to collect, process, store, and analyze any type of data, including structured and unstructured, whether it lives at the edge, in the data center, public cloud, or a hybrid cloud. With the ability to analyze batch and streaming data, insurance organizations can use machine learning, advanced analytics, and AI technologies to identify patterns, detect anomalies and better assess risk.

Cloudera empowers insurance providers to get clear and actionable insights from complex data anywhere. It provides the flexibility to run modern analytic workloads anywhere, regardless of where the data resides. It offers the ability to move those workloads to different cloud environments — public or private — to avoid cloud concentration and vendor lock-in. This is maintained with a common security and governance framework to enable data privacy and compliance.

Learn More

Underwriting is a discipline that will always maintain an element of uncertainty, yet results can be improved by applying greater accuracy of prediction. It is now more critical than ever to implement a flexible data and analytics strategy that can meet the demands of the next wave of insurance innovation.

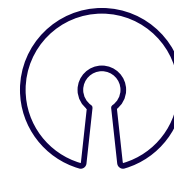Visit Cloudera.com/Insurance to learn more about how Cloudera supports Insurance.

Edge 2AI

Any Cloud   **Multi-Function**   SDX **Secure & Governed**   **Open**

CLOUDERA

About Cloudera

Cloudera is the only true hybrid platform for data, analytics, and AI. With 100× more data under management than other cloud-only vendors, Cloudera empowers global enterprises to transform data of all types, on any public or private cloud, into valuable, trusted insights. Our open data lakehouse delivers scalable and secure data management with portable cloud-native analytics, enabling customers to bring GenAI models to their data while maintaining privacy and ensuring responsible, reliable AI deployments. The world's largest brands in financial services, insurance, media, manufacturing, and government rely on Cloudera to be able to use their data to solve the impossible — today and in the future.

To learn more, visit **Cloudera.com** and follow us on **LinkedIn** and **X**. Cloudera and associated marks are trademarks or registered trademarks of Cloudera, Inc. All other company and product names may be trademarks of their respective owners.