

101 Ways to Use Third-Party Data to Make Smarter Decisions

AWS Data Exchange

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Introduction

As global digital transformation continues at an unprecedented rate, business leaders increasingly find themselves in need of guidance on how to make this transition as seamless and inexpensive as possible. Companies must not only keep up with technology and meet heightened consumer expectations, but also control costs and scale business growth. This requires a blend of people, processes, and technology working in unison to help build a winning strategy, brand, and culture.

A key part of today's digital business strategy involves managing data in the cloud. As the new currency, data is key to understanding the direction of the business and the behaviors of consumers. The surge in data has also made it critical for companies to quickly find, manage, and analyze their datasets to derive real-time business insights. Turning structured and unstructured data into actionable outcomes while keeping up with the responsibilities of running a business is both complicated and expensive. The question then immediately arises: How are today's business leaders supposed to easily find and subscribe to third-party data solutions in the cloud?

Enable your data-driven cloud strategy with real business examples

AWS Data Exchange helps address these challenges. It offers hundreds of commercial data products from category-leading data providers across industries such as financial services, healthcare, retail, media and entertainment, and more. To assist companies identify hundreds of data providers and solutions in AWS Marketplace, AWS Data Exchange is pleased to introduce an eBook with a new lens: **101 Ways to Use Third-Party Data to Make Smarter Decisions**. One of the best frameworks for building a successful business strategy is to examine the examples of other companies that have encountered and solved similar challenges. That is exactly what this eBook strives to accomplish. By presenting 101 real examples of how companies have successfully deployed third-party data products into their environments, this eBook attempts to help you envision pragmatic solutions. Whether using sustainability data to drive investment strategy or integrating weather forecasts to deliver targeted marketing tactics, the companies in these use cases have used third-party data to deliver results. This eBook was designed for leaders that want to see business impact.

101 Ways to Use Third-Party Data to Make Smarter Decisions is arranged as a broad compilation of use cases submitted by data providers across several industries. Each use case is designed to provide a short story of how a company solved a particular business challenge by using third-party data. As the example below shows, each company snapshot is organized into one of 13 AWS Data Exchange categories representing a wide range of business verticals. Tags are placed after each use case title to indicate its unique data type and data provider name.

Who benefits most from this publication?

101 Ways to Use Third-Party Data to Make Smarter Decisions is designed primarily for information technology (IT) leaders and technical targets involved in building digital transformation strategies for businesses and enterprises. AWS Data Exchange makes it easy to find, subscribe to, and use third-party data in the cloud. By referencing multiple case studies about real business environments, readers are encouraged to find solutions they can more easily and seamlessly identify with.

For example, a financial analyst struggling to keep up with the large volume of financial news may find assistance from the Brain Sentiment Indicator. The Brain Sentiment Indicator uses artificial intelligence (AI) to better understand financial media trends that directly impact stocks and investments. Similarly, a supply chain organization that would like to better understand the impacts of weather on product demand may consider Planalytics. By leveraging Planalytics' weather-based forecasting system, the company can save costs and reduce poor inventory placement, out-of-stocks, and overstocks due to weather impacts.

From business leaders to the more technical, this eBook is targeted for those that want innovative strategies to help their business grow and scale.

If you are a leader or a decision maker approaching this document with a macro-lens of your company's data strategy, the use cases are structured to help you answer your most critical question: How can this help us achieve our goals – **faster?** Product information like capabilities, recommended industries, data types and sources, geoavailability, and strategic alignment are listed within each use case to help you gauge value. The goal of this eBook is not to create awareness or nurture potential. This eBook was written to connect data-driven leaders with solutions that will help drive the most impact – **now**.

This eBook also supports your journey if you want to learn more about third-party data. If you're just diving into external data, this eBook is a great starting point. The use cases provide enough information to support you, if you are an influencer that's interested in understanding more about how third-party datasets are being used. They will give you a well-rounded perspective across most industries.

All of the use cases include technical details, charts, diagrams, and other content to support team members with more advanced skillsets or expertise. Data scientists, analysts, modelers, architects, and beyond may get the most by starting at the appendix or skimming through the table of contents. Both sections are clickable to provide you with quick access to specific companies, data types, categories, and use cases.



Consumer Insights Data

Businesses today must continually compete for customer attention across many channels, along with changing purchasing behaviors across multiple devices multiple devices. Understanding consumer behavior as it evolves is critical in order to stay relevant and competitive. Audience and consumer insights enable businesses to quickly gain a deeper understanding of consumer behaviors in real time to detect their wants and needs and communicate more effectively. Companies can collect demographic, financial, and lifestyle information on consumers. They can use this information to employ smarter analytics, modeling, targeting, benchmarking, and other quantitative methods to provide customers with the best experience possible.



Using mobile app insights data to drive better business decisions

Data type: Mobile app intelligence, Financial data

Data provider: Apptopia

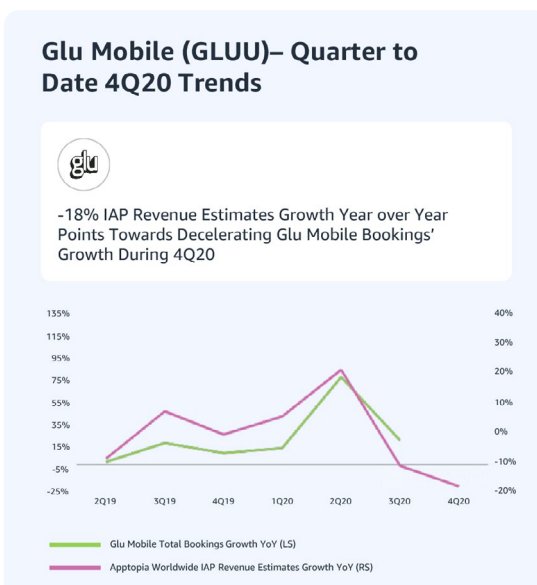
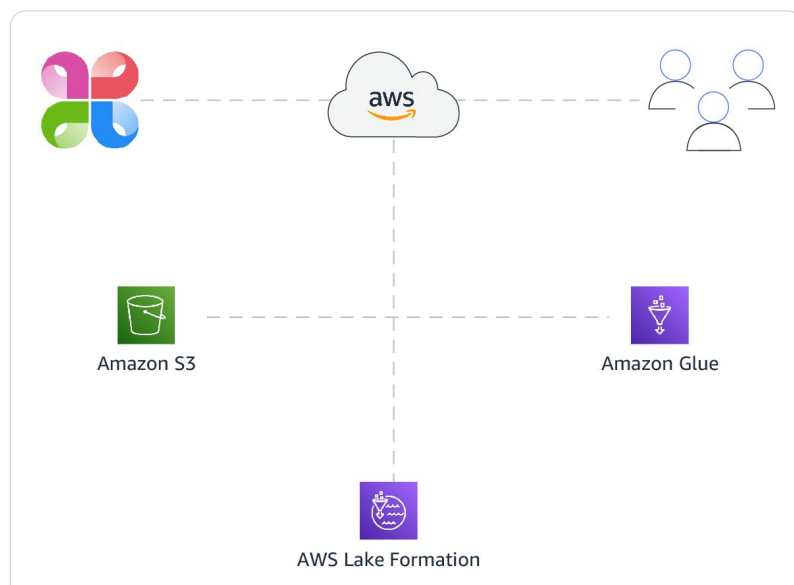
Apptopia provides services, in-app analytics, data mining, and business intelligence for the mobile industry, including performance estimates on over seven million apps in over sixty countries. A company turned to Apptopia data to help hedge fund analysts locate alternative data streams and help optimize their investment decisions. Through AWS Data Exchange, analysts can pull down Apptopia mobile performance data into their models to power every stage of the investment process. They use mobile data to generate new investment ideas, enhance investment decisions, and monitor current investments. Apptopia can also help to identify leading indicators of future company performance.

As a result of its comprehensive mobile intelligence, Apptopia can provide investors with a competitive edge in the financial marketplace. Over recent quarters, Apptopia's mobile data uncovered various positive signals four to six weeks ahead of the market consensus. Further, its data is characterized by accuracy, sustainability, and flexibility. These characteristics mean that Apptopia's mobile estimates provide strong performance indicators trusted by some of the biggest brands and financial institutions. Apptopia gives users the flexibility they deserve to work with data the way they want.

“With Apptopia, we now have the competitive intelligence to know if a specific feature is successful in driving revenue growth. Since using Apptopia, we've doubled our monthly revenue.”

*-Michael Witz,
CEO and Founder, Redemption Games*

How Apptopia's integration with AWS Data Exchange works



Etsy (ETSY)

Note From Our Equity Research Team:

- Active buyers are a key indicator of Etsy's revenue growth and overall business health; defined as a buyer who has made at least one purchase in the last 12 months.
- The correlation between Apptopia's data and Etsy reported active buyers strengthened considerably in 2019 as the percent of mobile gross merchandise sales (GMS) continues to increase over time.

Downloads grew by +50% Year over Year during 2Q20; which points towards a sharp increase in active buyers growth during the quarter.

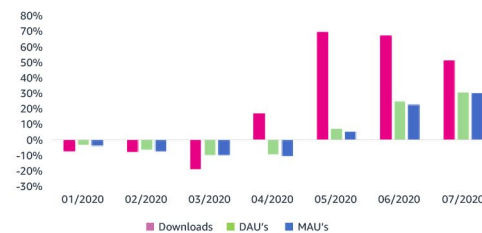
Is Etsy an attractive short opportunity?

The share price is up +254% since March lows despite the fact that the company doesn't seem to be retaining a significant number of new users.

2Q20 Active Buyers Net Adds Growth Quarter on Quarter Preview



Worldwide Downloads, DAU's and MAU's Estimates Year over Year

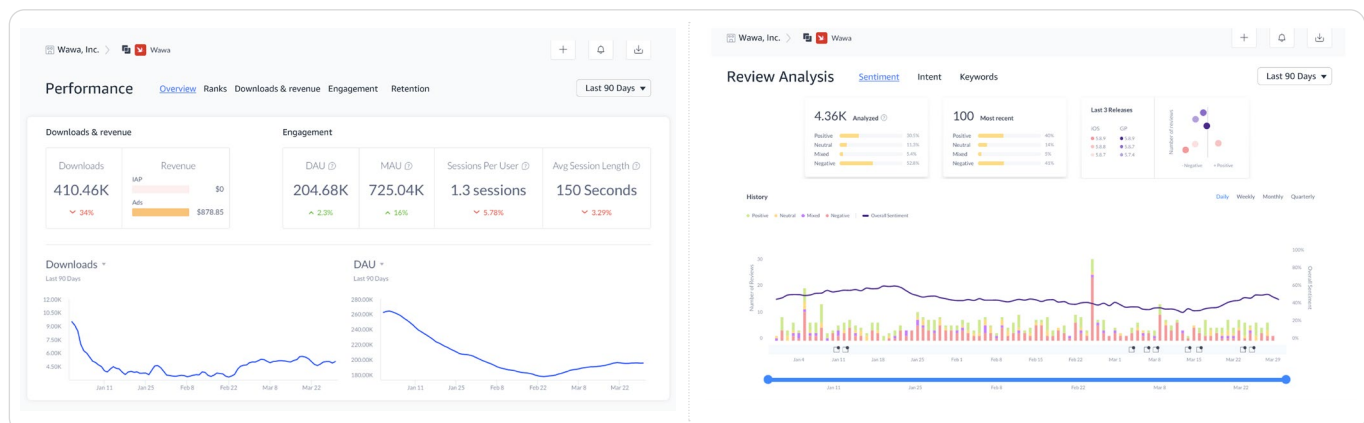


How mobile app data can power market share analysis

Data type: Mobile app intelligence

Data provider: Apptopia

Apptopia provides services, in-app analytics, data mining, and business intelligence for the mobile industry, including performance estimates on over seven million apps in over sixty countries. The executive team at a well-known convenience store chain was interested in market-share analysis and understanding their competitors' strategies in order to grow their user base. With this data, analysts can pull down performance, user, and cross-app usage data into Tableau to conduct competitive benchmarking and user analysis. Analysts can benchmark performance against competitors to understand where they are winning and losing. Analysts also gain insights into the customer's voice by examining user reviews and deploying this data to support their most critical business decisions.



Leveraging email data to drive retail business insights

Data type: Email receipt transactional data

Data provider: Foxintelligence

Foxintelligence is a leading consumer intelligence platform for eCommerce that leverages data from business-to-consumer (B2C) apps and web interfaces. The company supported a client who wanted to better understand the impact of the COVID-19 crisis on fast-food delivery platforms. The client's investors needed to know how these platforms have grown during the COVID-19 crisis and which platform is benefitting the most from the pandemic. Foxintelligence helped solve this challenge by enabling investors to compute unique market and consumer insights on any ticker traceable in emails received by customers. These tickers included retailers (Amazon), service providers (Uber), electronic brands (Samsung), streaming platforms (Netflix), and gaming editors (Activision Blizzard).

Based on transactional data from emails, Foxintelligence allows investors to delve deeply into the results and strategy of key tickers. These insights include growth rates, market shares, percentage of promotions, frequency, churn, and retention. For example, the fast-food market in France more than doubled between the first quarter of 2020 and the first quarter of 2021. Meanwhile, Uber Eats is confirming its leading position with around 60 percent of market shares in 2021.

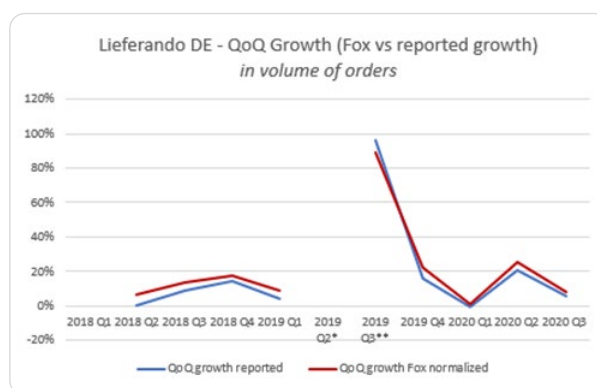
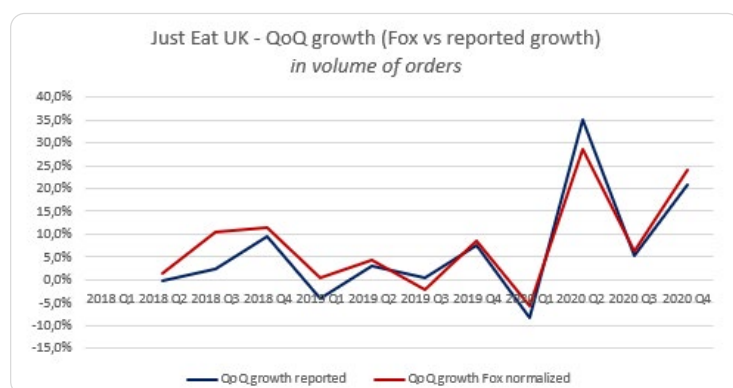
Consumer email data offers fresh insights on video streaming trend

Data type: Video streaming data

Data provider: Foxintelligence

Foxintelligence is a leading consumer intelligence platform for eCommerce that leverages data from business-to-consumer (B2C) apps and web interfaces. The company is present in the United Kingdom, France, Germany, and Spain, and it is quickly expanding to other countries, including Italy. Foxintelligence wanted to figure out why Netflix subscriptions have risen recently and how much of this growth is driven by free trials. By scraping data from emails, Foxintelligence was able to give investors a deep dive into the results and strategy of key tickers, such as Netflix. The analysis indicated that in France, for instance, while subscriptions grew between the third and fourth quarters of 2020, the percentage of free trials recorded did not grow between the two periods.

Backtesting of Just Eat UK Takeaways and Lieferando DE Foxintelligence data against reported data



Boosting user acquisition with mobile software development kit derived data

Data type: Mobile app and software development kit (SDK) derived mobile data

Data provider: Kochava

Kochava Collective is the world's largest mobile data marketplace and targeting platform consisting of SDK-derived data on over ten billion unique devices globally. A financial services brand wanted to drive user acquisition, increase subscriptions, and minimize fraudulent conversions by engaging with real human users. With an increasing focus on competition over industry share of voice, the company believed these metrics were important and impactful. Working with the Kochava Collective team, the company was able to determine the field of primary competitors in the same space. Using the Collective Audience Builder, they applied filtering criteria to isolate individuals with iOS devices that could support their financial technology (fintech) app features. The criteria also specified that devices had to have competitors' apps installed. Using demographic insight data, the user acquisition (UA) team worked to craft a relevant display ad with a unique special offer. By leveraging this focused targeting strategy, the company managed to achieve 4X return on ad spend. This was based on a 34 percent boost in subscription conversions from newly acquired, high-quality users.



Location intelligence provides unprecedented mapping accuracy

Data type: Consumer insights data, Location and marketing data

Data provider: Epsilon

Epsilon is a leader in interaction management, enabling brands to transform ordinary customer experiences into meaningful, human experiences. Epsilon has spent decades building our data assets with coverage of every marketable US household, providing comprehensive demographic, lifestyle, and transactional insights. These insights are critical for marketers challenged to reach, acquire, and retain consumers from the right cross-sections of neighborhoods. Epsilon provides data aggregated at the neighborhood ZIP+4 level to allow for detailed geographical analysis. The data includes spending behavior on over 900 brands, which helps marketers identify the neighborhoods that drive commerce. Its dataset also includes over 600 demographic, financial, lifestyle, and propensity variables. What's more, the data enables the use of accurate mapping to help marketers visualize trends in the neighborhood and larger environs it targets. Epsilon's Consumer Data Insights are built using actual person-and/or household-level information. They roll up to the geographic level to provide unprecedented accuracy when loaded into visualization tools.

Near real-time access to spending habits unlocks consumer insights

Data type: Financial and transactional
Data provider: Facteus

Facteus has developed a patent-pending synthetic data process that safely transforms raw financial transaction data from legacy systems to provide insights without compromising data privacy. The company was challenged to help its customers go beyond identifying trends in consumer spending – it sought to make information granular enough to be actionable. To achieve that granularity, Facteus safely transforms data from thousands of financial institutions and commercial programs, along with common datasets from legacy systems. This “clean” and secure data is suitable for machine learning, artificial intelligence (AI), and data monetization, and it can be used to support other customer strategies. Using common datasets such as spending profiles, brand preferences, cross-brand shopping, loyalty, and demographic information, the company provides in-depth, real-time views of consumer spending habits. As a result, Facteus delivers authentic consumer insights to help its customers unlock more value from their data. These insights and data can help them make smarter investments and better business decisions.

Facteus’ Synthetic Data = No Risk

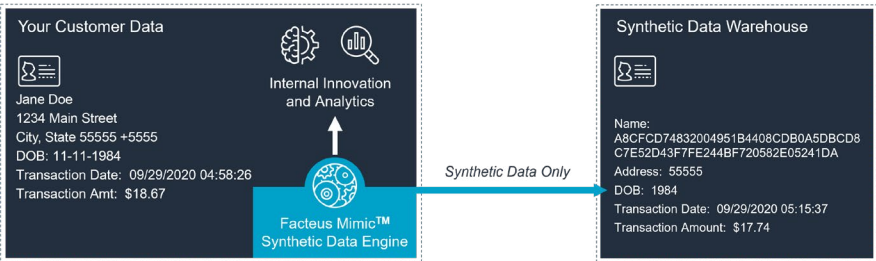
Altered fields cannot be reverse engineered
Synthetic Data maintains 99.9% accuracy
Facteus never sees, touches, interacts with your PII/sensitive data

Data Type:			
	Cleaned-Raw	Anonymous	Synthetic
Name	John Smith	Customer 123	Customer 123
Address	1234 Main St.	Removed	Removed
City, State, Zip	Los Angeles, CA 97007	Los Angeles, CA 97007	Zip Code
DOB	12/25/80	12/25/80	Year
TRX Date	01/19/20 08:45:23	01/19/20 08:45:23	01/19/20 09:15:13
TRX Amount	\$13.56	\$13.56	\$13.96
Risk	High	Low	None
Monetization Option	Internal Only	External, Internal	External, Internal

How Synthetic Data Works

- No “Real” Data Leaves Any Parties Firewalls.
- No User Information is Ever Shared
- Data Can Not Be Reverse Engineered to Re-Identify Users

Your Firewalls



Weather-based forecasting data drives value for the supply chain

Data type: Consumer data

Data provider: Planalytics

Planalytics is a global leader in business weather intelligence, helping companies effectively assess and proactively address how the weather impacts their business. The company has analyzed trillions of point-of-sale (POS) transactions across more than 200,000 product categories. Planalytics needed to help logistics and supply-chain organizations gain more accurate demand forecasts and eliminate poor inventory placement, out-of-stocks, and overstocks due to weather impacts. Planalytics addressed these challenges with a weather-driven demand (WDD) analytics platform that improves forecast accuracy and reduces waste in the supply chain. This solution improves product availability by factoring in the weather's impact on upcoming demand. It also increases sales and minimizes markdowns by aligning store inventories to weather-based shifts in sales. What's more, Planalytics provides scalable analytics for each product, time, and location. These analytics integrate into business technologies to support key functionalities such as forecasting, allocation, and replenishment. With Planalytics solutions in place, organizations can increase net income two to six percent annually, bring forecast accuracy improvements up 30 percent yearly, and reduce waste by 35 percent.

Location ▲	Actual WDD % vs LY								Current		
								Last Week	This Week	Next Week	
	#6 02/06	#7 02/13	#8 02/20	#9 02/27	#10 03/06	#11 03/13	#12 03/20	#13 03/27	#14 04/03	#15 04/10	#16 04/17
TOP	+1.0	-1.5	-3.8	+1.7	-2.0	-0.9	-2.5	-0.2	+0.5	+1.6	+3.9
ATLANTA	-4.8	-1.8	-0.5	+8.0	-2.1	+1.3	-4.7	-1.7	-3.8	+2.3	+3.7
BIRMINGHAM	+6.1	+1.4	-5.3	+2.9	+1.1	+0.4	+1.6	+1.4	-3.3	+2.3	+7.2
BOSTON	+1.3	+2.0	-1.7	-2.1	-2.4	+4.6	-0.4	+6.8	+10.7	+4.0	+4.8
BUFFALO/ROCHESTER	+0.9	-0.2	+1.2	-0.0	-1.4	-0.5	-0.6	+5.4	-1.3	+5.3	+7.4
CHARLOTTE	+1.2	-3.1	-2.9	+2.5	+2.2	-0.8	-3.3	+3.0	-2.9	+0.4	+2.4
CHICAGO	+0.5	-3.2	-4.4	+1.5	-1.3	+2.2	-0.2	+2.2	-0.2	+3.4	+7.4
CINCINNATI	+0.8	-1.3	-4.0	+1.1	-2.0	+0.3	+0.2	+2.7	-2.2	+5.1	+12.4
CLEVELAND	0.0	-1.8	-2.8	+24.4	-1.5	-0.6	-0.5	+3.2	-0.2	+1.8	+6.0
COLUMBUS	+2.0	0.0	-0.8	+2.0	-2.4	-0.8	-0.1	+3.8	-1.0	+3.1	+7.5
DALLAS/FT. WORTH	+2.9	-6.1	-17.4	+3.5	-3.2	-0.3	-2.8	-3.8	0.0	+2.6	+10.1
DENVER	+3.6	-1.5	-1.2	-0.1	-0.4	+0.8	-0.8	-1.1	+4.8	+0.6	+10.0
DETROIT	+0.2	-0.6	-1.9	+1.5	-1.0	-0.7	0.0	+3.9	-0.3	+4.6	+9.3
HARTFORD/NEW HAVEN	+6.0	0.0	+0.6	-0.8	-2.9	-1.0	-1.4	+7.4	+1.4	+3.8	+5.5
HOUSTON	-4.0	-8.3	-28.6	+8.4	-3.4	-1.4	-2.0	-1.2	0.0	0.0	+4.1

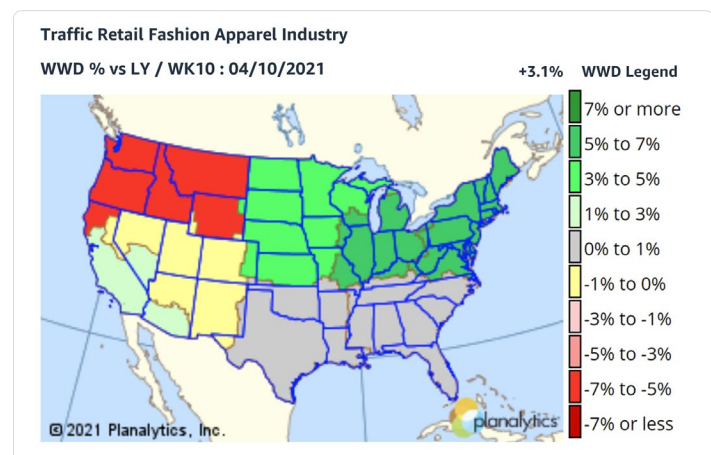
Weather-driven demand analytics provides a clearer view of retail performance

Data type: Consumer data

Data provider: Planalytics

Planalytics is a global leader in business weather intelligence, helping companies effectively assess and proactively address how the weather impacts their business. The company has analyzed trillions of point-of-sale (POS) transactions across more than 200,000 product categories. Weather impacts are unknown and tend to be incomparable across regions and product lines, and this uncertainty can make business decision-making and strategizing difficult. Planalytics needed to help organizations gain more accurate demand forecasts and eliminate poor inventory placement, out-of-stocks, and overstocks due to weather impacts.

Planalytics addressed these challenges with a weather-driven demand (WDD) analytics platform that offers insights not only by product category but also by store traffic. Planalytics enables customers to view the impact of weather in a quantifiable way. In addition, Planalytics data informs better decisions, including sales forecasting, budgeting, and labor planning. With Planalytics solutions in place, organizations can increase net income 2 to 6 percent annually and bring forecast accuracy improvements up 30 percent yearly. Planalytics solutions can also help organizations reduce waste by 35 percent. All of this demonstrates how weather-adjusted sales provide a clearer view of true retail performance.

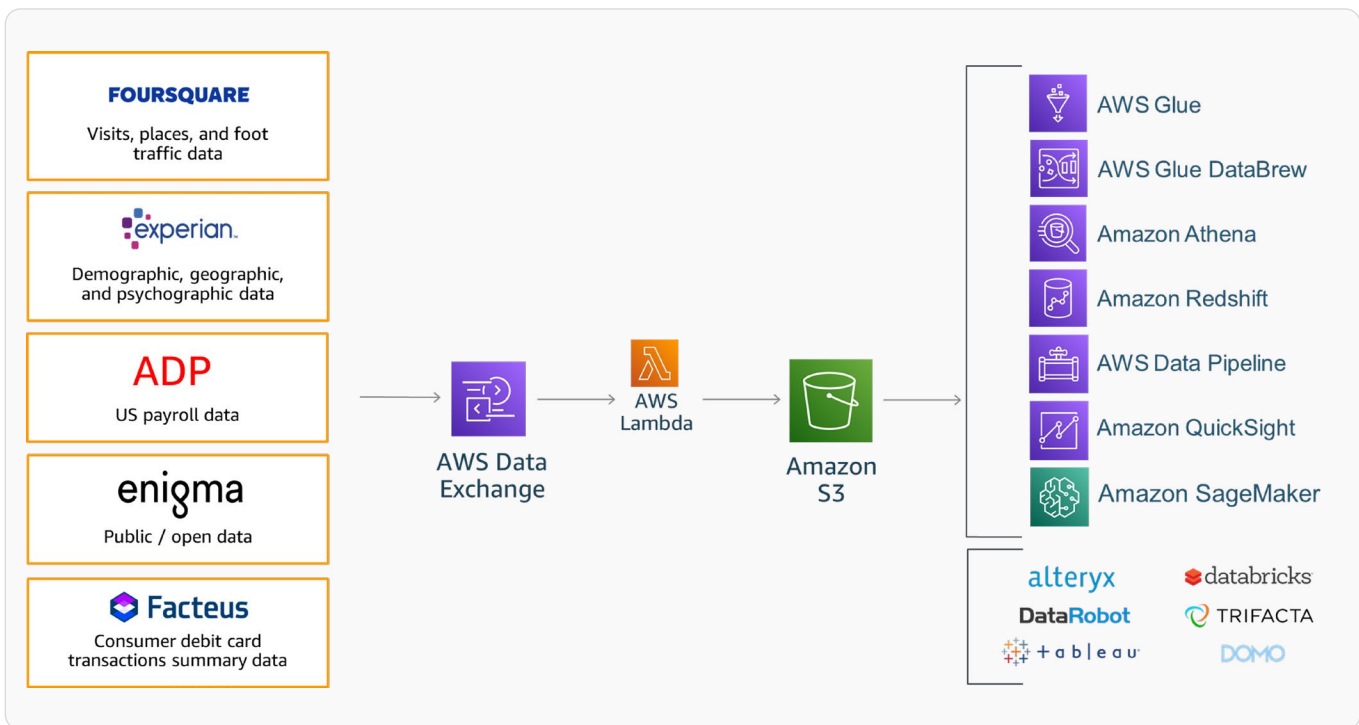


Next-day transaction data drives faster insights into market competitors

Data type: Financial and transactional

Data provider: Facteus

Facteus has developed a patent-pending synthetic data process that safely transforms raw financial transaction data from legacy systems to provide insights without compromising data privacy. The company safely transforms data from thousands of financial institutions and commercial programs along with common datasets from legacy systems. This data is suitable for machine learning, artificial intelligence (AI), and data monetization, and it can be used to support other customer strategies. For customers who are looking for support in defining and analyzing market competition, Facteus provides detailed transaction information at the company level. This information includes historic and ongoing transaction data that can be delivered as fast as one day following the transaction date. Data within this suite is available with multi-year history and delivered in a daily stream or at a merchant-summary level. Leveraging these datasets enables customers to analyze both wallet and market share, including trends, cross-shopping patterns, and shifts from one merchant to another. Customers gain in-depth, real-time views of merchant competition that can result in game-changing opportunities to make smarter business decisions.



Worldwide geodemographic data finds hotspots of affluence for ski center expansion

Data type: Geospatial data

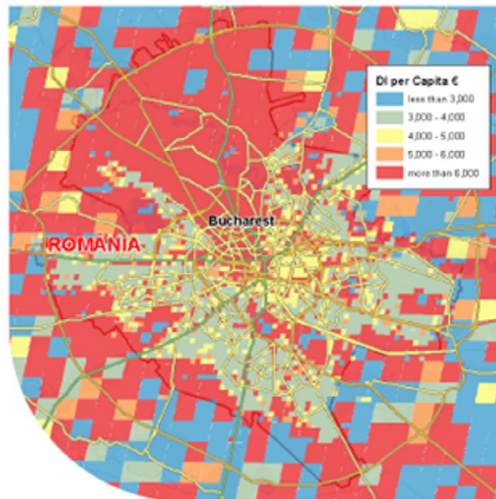
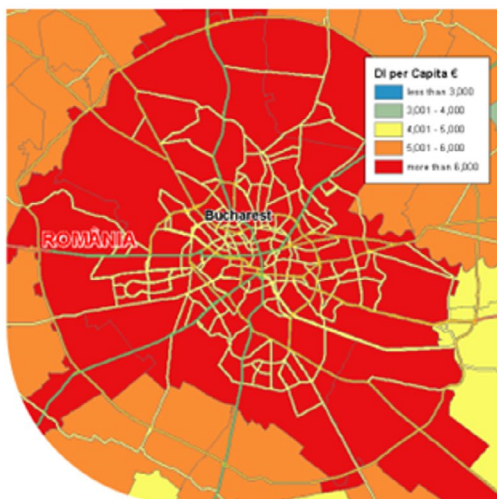
Data provider: Experian

Experian offers a pioneering combination of data, technology, and advanced analytics to help businesses unlock insights and take decisive action. It provides tools that help companies succeed in planning effective marketing campaigns, making responsible credit decisions, and creating a business optimization strategy. Those challenges are significant on their own, but more so in international markets that lack consistency in socio-demographic information, a reality that further complicates decision-making. To help, Experian offers WorldView, the first solution to deliver a socio-demographic dataset at a grid level of 250m × 250m consistently across multiple countries. It offers immediate access to consistent, consolidated, granular data concerning population, age, gender, income, and expenditure for billions of people worldwide.

An international indoor ski center identified opportunities to site additional centers across Western Europe, North America, and South America. They were looking for a means of identifying and prioritizing major cities where there was the greatest potential return. They used Mosaic USA and Mosaic UK classifications to profile their customer base. These profiles identified the key socio-demographic characteristics of their customers and their visit behavior. Characteristics were mapped using WorldView data to 19 additional countries to assess the number of estimated target consumers across 300 major cities.

The client's key customers were primarily affluent families and singles. The client used a report that ranked 300 major cities by the volume of these key customers and benchmarked them against their existing center locations. The client also used one-kilometer grid maps of target consumer hotspots to identify locations in each city closest to their key audience. As a result, the client was able to identify which of these cities had sufficient consumers to support a center and prioritize them for investment.

Area level demographics > Unique grid level demographics



Better targeting data enables increased share in new markets

Data type: Transactional

Data provider: Alliant

Alliant is a leading data company that captures and provides purchase activity from across more than 75M individuals and over 1,000 brands to build a picture of brand propensity. Such data is sourced from credit card transactions through more than 50 financial institutions, but that data only tells part of the story. When a leading quick-service restaurant (QSR) brand needed to increase brand awareness, it needed a better understanding of brand propensities to determine how to capture market share. Alliant delivers DataHub – built on billions of consumer transactions, advanced data science, and high-performance technology. It provides thousands of data points to create a more complete picture of prospective and current customers. DataHub enabled the QSR to target customers across multiple channels to build its brand in the new geography, resulting in increased market share.

Location intelligence provides unprecedented mapping accuracy

Data type: Consumer insights data

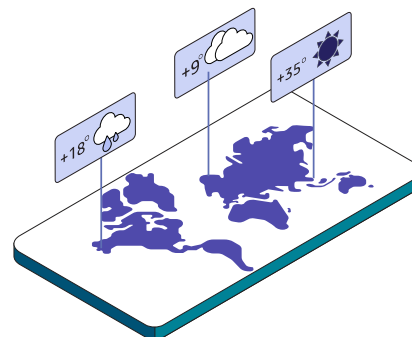
Data provider: Epsilon

Epsilon is a leader in interaction management, enabling brands to transform ordinary customer experiences into meaningful human experiences. Epsilon has spent decades building its data assets with coverage of every marketable US household, providing comprehensive demographic, lifestyle, and transactional insights. These insights are critical for marketers challenged to reach, acquire, and retain consumers from the right cross-sections of neighborhoods. Epsilon provides data aggregated at the neighborhood ZIP+4 level to allow for detailed geographical analysis. The data includes spending behavior on over 900 brands, which helps marketers identify the neighborhoods that drive commerce. Its dataset also includes over 600 demographic, financial, lifestyle, and propensity variables. What's more, the data enables the use of accurate mapping to help marketers visualize trends in the neighborhood and larger environs it targets. Epsilon's Consumer Data Insights are built using actual person- and/or household-level information. They roll up to the geographic level to provide unprecedented accuracy when loaded into visualization tools.

Marketing and Segmentation Data



Marketing and segmentation data enables marketers and analysts to segment, portrait, and analyze consumers and markets. The results support better business decisions through customer insights. Segmentation can enhance business outcomes by helping decision-makers identify behavior patterns, understand customer choices, target niche populations, and ultimately tailor better experiences.



Observing patterns in online behavior enable improved customer journey

Data type: Geodemographic postcode segmentation

Data provider: CACI

CACI is a UK-based company that provides a range of data products and solutions around customer data. It provides insights that help clients define and deliver appropriate targeting strategies across all consumer-facing sectors. CACI can provide insights to organizations trying to understand their existing customers or catchment areas, develop propositions, plan investments, or allocate resources effectively. Demographic insights enable businesses to make better decisions about their customers and the market, including:

- Insights into customers and why they behave the way they do across platforms
- Development of customer segments for campaign and journey creation
- Understanding the market to help develop propositions and accurately predict take-up
- Understanding the types of customers in your catchment areas to improve network efficiency, range planning, and media planning

For an insurance business that provides an online quote application, it's important to understand when and why certain consumers drop out of the quotation process. With Amazon Brand Analytics by Acorn segments, insurers can gain insight into which demographics drop out at each stage of the quote journey. Insurers can then adjust the messaging and user journey. For example, a person in the Comfortable Senior demographic may need more support and reassurance during an online quote process than a person in the City Sophisticate demographic. By identifying these patterns, insurers can tailor the customer experience and thereby achieve a higher completion rate.

Segmentation by lifestyle enhances product recommendations across product types

Data type: Geodemographic postcode segmentation

Data provider: CACI

CACI is a UK-based company that provides a range of data products and solutions around customer data. It provides insights that help clients define and deliver appropriate targeting strategies across all consumer-facing sectors. CACI can provide insights to organizations trying to understand their existing customers or catchment areas, develop propositions, plan investments, or allocate resources effectively. Demographic insights enable businesses to make better decisions about their customers and the market, including:

- Insights into customers and why they behave the way they do across platforms
- Development of customer segments for campaign and journey creation
- Understanding the market to help develop propositions and accurately predict take-up
- Understanding the types of customers in catchment areas to improve network efficiency, range planning, and media planning

Marketing teams are challenged to provide unique content appropriate for a range of audiences based on their geographic location. CACI delivers Acorn, which is a powerful classification that can connect segmented product recommendations based on demographic data. For example, on a grocery website, the Lavish Lifestyles Acorn segment might be showing premium products and expensive bottles of wine, while the Student Life Acorn segment might be showing instant noodles and discounted alcohol.

For a financial services company, the Mature Money Acorn segment might be showing investment products, while the Starting Out Acorn segment might be showing first-time buyer mortgage products.

The tools enable organizations to analyze, visualize, and target the appropriate products and services to customers using Acorn's demographic segments.

USE ACORN TO AMEND THE MESSAGING AND OFFER HIERARCHY

CITY SOPHISTICATES

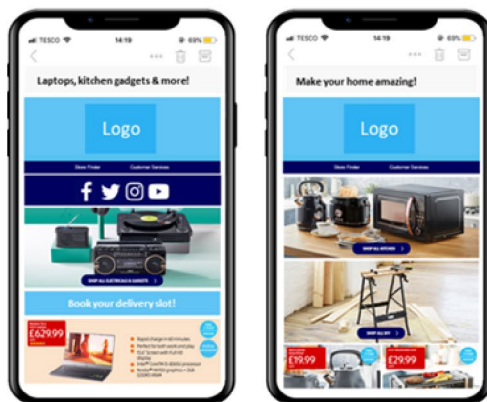
Younger individuals enjoying the city lifestyle with lots of opportunities to socialize and spend

Love buying new gadgets and appliances.

Use social media frequently and engage with brands online.

Don't have children at home and privately rent flats in urban areas. They are less likely to have a garden.

Have a busy life, both with work and socially — convenience is key.



SUCCESSFUL SUBURBS

Home-owning families living comfortably financially, in suburban and semirural locations.

More interested in DIY and they own their own home.

Own detached or semidetached houses in rural areas. BBQ and garden products are relevant.

Have busy family lives with younger children.

Personalization improves marketing efforts

Data type: Consumer insights data

Data provider: Epsilon

Epsilon is a leader in interaction management, enabling brands to transform ordinary customer experiences into meaningful human experiences. Epsilon has spent decades building its data assets with coverage of every marketable US household, providing comprehensive demographic, lifestyle, and transactional insights. These insights are critical for marketers challenged to reach, acquire, and retain consumers from the right cross-sections of neighborhoods. Epsilon provides data aggregated at the neighborhood ZIP+4 level to allow for detailed geographical analysis. The data includes spending behavior on over 900 brands, which helps marketers identify the neighborhoods that drive commerce. Its dataset also includes over 600 demographic, financial, lifestyle, and propensity variables. As a result, companies can personalize marketing and messaging, enabling brands to make more meaningful connections with consumers. Leveraging Epsilon's data allows marketers to speak to consumers on a personal level, boosting overall campaign performance with higher conversion and return on investment (ROI).

Aggregated geobehavioral data increases targeting accuracy and marketing performance

Data type: Consumer insights data

Data provider: Epsilon

Epsilon is a leader in interaction management, enabling brands to transform ordinary customer experiences into meaningful, human experiences. Epsilon has spent decades building its data assets with coverage of every marketable US household, providing comprehensive demographic, lifestyle, and transactional insights. These insights are critical for marketers challenged to reach, acquire, and retain consumers from the right cross-sections of neighborhoods. Epsilon provides data aggregated at the neighborhood ZIP+4 level to allow for detailed geographical analysis. The data includes spending behavior on over 900 brands, which helps marketers identify the neighborhoods that drive commerce. Its dataset also includes over 600 demographic, financial, lifestyle, and propensity variables. As a result, companies can match the right offers with the right people across channels, increasing the performance and return on investment (ROI) of marketing campaigns.

Customer segmentation provides key to breakthrough customer experience management

Data type: Demographic, Financial, Lifestyle, Interest, Home, Auto

Data provider: Merkle

Merkle is a leading data-driven customer experience management (CXM) company that enables Fortune 1000 brands to deliver privacy-safe and real-time interactions across the total customer experience. The company's challenge was how to help brands meet the rigorous and demanding critical CXM needs of the twenty-first-century consumer. Merkle offers capabilities including data management, consumer insights, targeting, and personalization.

It isolates and combines the leading sources of data on the market. By doing this, Merkle maximizes depth and breadth, achieves consensus, and drives tangible lift in predictive power for clients. To objectively test and compare the hundreds of data assets in the ecosystem, Merkle employs its Data Valuation Lab analytical framework, called DataSource, to grade data assets. This analysis applies across four key performance indicators (KPIs): coverage, accuracy, descriptive power, and predictive power. By using rich data to identify the statistically distinct subgroups within a customer population, clients can deliver more relevant and personalized experiences. These experiences drive increased engagement, retention, and conversion rates.

A large consumer association benchmarked Merkle DataSource against its incumbent data product across three core dimensions. It found that Merkle delivers a six percent lift in predictive models and outperforms with coverage of 81 percent versus 45 percent across key attributes. In addition, Merkle provides a more consistent dataset, as measured by the strength of correlation between attribute pairs. Attribute pairs include education and income, income and home value, income and marital status, and income and number of children.

Download a copy of Merkle DataSource™

<https://www2.merkleinc.com/merkledatasource>

Download Merkle Data Solutions datasheet

<https://www2.merkleinc.com/merkledatasolutions>

Leading Brands Build With Merkle



100+
DATABASE
INSTALLATIONS



16B Million
CUSTOMER RECORDS
ENHANCED ANUALLY



2,500+
STANDARD DATA
ELEMENTS



Private Graph
CONNECTED &
ACTIONABLE
CROSS-CHANNEL

Market segmentation brings location-based data to life

Data type: Data products (Consumer)

Data provider: NielsenIQ

NielsenIQ (NielsenConsumer LLC) provides consumer packaged goods (CPG) manufacturers and retailers with accurate, actionable information and insights based on a complete picture of today's changing marketplace. Businesses face an ultracompetitive market. One of the challenges NielsenIQ faced was how to help businesses understand their footprint in comparison to competitors' stores within a specific market area. For example, what is their proximity to the competitor locations, and what type of stores are they – in the case of locations selling alcoholic beverages? NielsenIQ offers the TDLinx dataset as a comprehensive store reference across all retail locations. This dataset includes attributes such as name and address, trade channel, longitude and latitude, marketing group, and corporate ownership for every store and outlet. It also includes the TDLinx code attribute, which is a unique identifier and integration key. The TDLinx data shows all stores and outlets within a market segmentation, the characteristics of each, and any ownership or common banner associations. As a specific market focus, the TDLinx on-premises database provides a refined focus around locations that serve alcoholic beverages.

The TDLinx dataset is a critical component of analysis for several business strategies like third-party services strategies, expansion strategies, and real estate assessments. When those are combined with its extensive location attributes, TDLinx enables businesses to organize, integrate, aggregate, and communicate using any location-based data across any industry and vertical.

Audience segmentation comes alive with this new first-party data platform

Data type: Digital behavior and interest

Data provider: ShareThis

ShareThis is a social data platform designed to process first-party data in real time. This platform makes behavioral data actionable for any business that requires a holistic view of customers. The company needed a way to help organizations better understand consumer behavior with more effective personalized marketing campaigns that maximize return on investment (ROI) and reduce wasted spending. By building out ShareThis Audience Segments, the company began to leverage raw data feeds using select keywords, entities, categories, and concepts. These segments helped them build custom audiences. With these insights, ShareThis enables brands to gain more precise targeting, personalization, and segmentation as part of their strategic marketing campaigns. These insights can be filtered by vertical and include shares, clicks, searches, page views, URLs, keywords, category data, and more. ShareThis can also provide lookalike and custom audiences. In addition, ShareThis offers data across all verticals and industries, including retail, business-to-business (B2B), automotive, healthcare, finance, travel, and more. ShareThis offers website tools and a sharing plugin used by over three million websites. ShareThis provides marketers with the audience segments and insights they need for successful marketing campaigns.

Brand propensity data provides targeted, competitive insights

Data type: Transactional

Data provider: Alliant

Alliant is a leading data company that captures and provides purchase activity from over 75 Million United States individuals and more than 1,000 brands to build a picture of brand propensity. Such data is sourced from credit card transactions through more than 50 financial institutions, but that data only tells part of the story. Alliant delivers DataHub – built on billions of consumer transactions, advanced data science, and high-performance technology. DataHub provides thousands of data points to create a more complete picture of prospective and current customers, including which customers have high overlap across certain brands. When a leading quick-service restaurant (QSR) lacked visibility into how its customers overlap with competitive brands, it needed a more robust picture of the data. Using DataHub, the QSR was able to update its customer relationship management (CRM). It could then choose the right messaging to better reach its target audience with a more effective, competitive marketing campaign.

Segmented loyalty messaging drives increased retention and spend from core customers

Data type: Transactional

Data provider: Alliant

Alliant is a leading data company that captures and provides purchase activity from over 75 Million United States individuals and more than 1,000 brands to build a picture of brand propensity. Such data is sourced from credit card transactions through more than 50 financial institutions, but that data only tells part of the story. Alliant delivers DataHub – built on billions of consumer transactions, advanced data science, and high-performance technology. DataHub provides thousands of data points to create a more complete picture of prospective and current customers, including which customers have high overlap across certain brands. When a leading travel brand needed deeper insights into their own first-party customer relationship management (CRM) data, the company licensed Alliant attributes. Alliant attributes enable an accurate understanding of the demographic profiles and purchasing behavior of current and potential travelers. The travel brand can now send high-income travelers messaging around luxury accommodations, and other travelers can receive information about discounted deals or other budget-focused messaging. With Alliant, brands can segment loyalty messaging differently for different key customer groups, leading to increased retention and spend from core customers.

Achieving aggressive sales goals with new product launch

Data type: Transactional

Data provider: Alliant

Alliant is a leading data company that captures and provides purchase activity from over 75 Million United States individuals and more than 1,000 to build a picture of brand propensity. Such data is sourced from credit card transactions through more than 50 financial institutions, but that data only tells part of the story. Alliant was recently ranked number one against ten other auto data providers for identifying ownership by car type, with particular strength in identifying luxury car owners. A leading auto marketer turned to Alliant when introducing a new line with aggressive order and sales goals within the launch timeframe. By leveraging Alliant Auto audiences, including in-market for a new vehicle, brand loyalists, and defectors from competitive brands, the company was able to target likely buyers across channels. Ultimately, the company was able to drive higher spend by accurately identifying consumers who were both in-market and brand-loyal.

Helping data scientists seamlessly gain real-time data insights

Data type: Digital behavior, Interest

Data provider: ShareThis

ShareThis is a social data platform designed to process first-party data in real time. This platform makes behavioral data actionable for any business that requires a holistic view of customers. The company wanted to help data scientists pull raw data into their data lakes and customize it based on their own unique datasets and needs, quickly and seamlessly. By leveraging the ShareThis Data Feed, organizations can customize attributes and build curated data feeds for additional customer insights, personalization, and campaign optimization. Data scientists can use this feed to pull information into their data lakes and apply customized insights. With seamless Direct Support Professional (DSP), Data Management Platform (DMP), and Continuous Data Protection (CDP) integration, ShareThis can help you identify key trends and focus on what's most important. Data insights include shares, clicks, searches, page views, URLs, keywords, category data, and more. The ShareThis Data Feed provides data scientists with the right data at the right time to quickly access the insights they need.

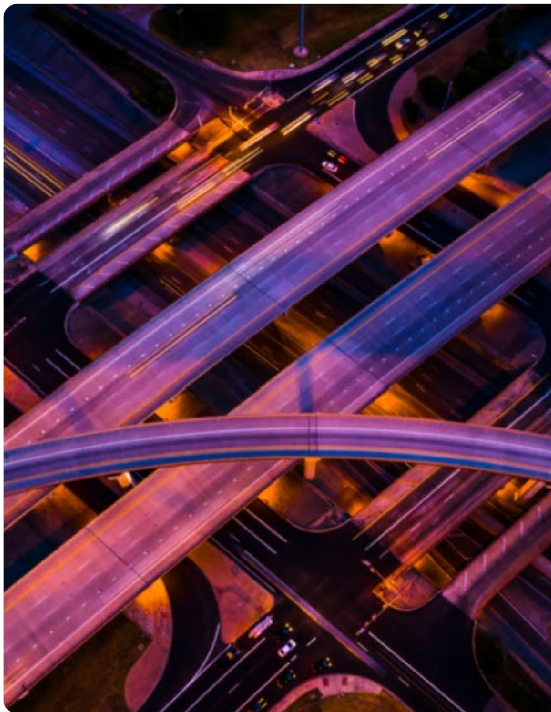
Breakthrough creative platform streamlines content curation and moderation

Data type: Computer vision: Image and object recognition

Data provider: Shutterstock

Shutterstock is an intelligent creative platform that helps creative professionals from all backgrounds and businesses of all sizes produce their best work with incredible content and innovative tools. Shutterstock's library consists of 360 million images, over 20 million video clips, 100,000 music tracks, and one million 3D models. A challenge for many companies and large platforms is how to scale their content moderation to effectively manage, curate, and

moderate millions of user-generated content assets. Shutterstock's large set of clearly labeled image metadata includes sensitive and editorial content backed by over 1.6 million contributors representing 150+ countries, to help minimize implicit bias. This collection enables customers to build, train, and automate image recognition models for curation and to enforce content policies. With automatic curation and moderation now taking mere milliseconds, companies and large platforms can also prevent reputation damage by automating the removal of violent or sensitive content.



WHY SHUTTER STOCK



The only library backed by both human and computer Review with consistent metadata standards for **17+ years**



Freshest content library with **1M+** new assets and Metadata uploaded weekly



1.6M contributors in **150+** countries capturing diversity and authentic moments within their local context



Complete, accurate, and stable image dataset allows partner to **build visual recognition algorithms faster**

SIMPLE IMAGE DETAILS API RESPONSE

Sample categories returned

```
{
  "categories": [
    {
      "id": "8",
      "name": "Holidays"
    },
    {
      "id": "11",
      "name": "The Arts"
    }
  ]
}
```

Sample keywords returned (21 language support)

```
{
  "has_property_release": true,
  "keywords": [
    "abstract",
    "art",
    "artistic",
    "asian",
    "autumn",
    "background",
    "bunny",
    "calligraphy",
    "celebration",
    "china"
  ]
}
```

```
{
  "id": "46011689",
  "upload_date": "2018-08-07",
  "aspect": 0.6561,
  "assets": {
    "image": {
      "display_name": "Rupa",
      "dpi": 300,
      "file_size": 600000,
      "format": "jpg",
      "height": 4000,
      "is_licenseable": true,
      "width": 1567
    },
    "vector": {
      "display_name": "Vector",
      "format": "svg",
      "is_licenseable": true
    },
    "preview": {
      "height": 400,
      "url": "https://image.shutterstock.com/image_jpg_with_logo/584880/60011689/stock-vector-happy-autumn-festival-background-with-golden-glitter-moon-and-hand-drawn-moon-rabbits-vector-46011689.jpg",
      "width": 1567
    }
  },
  "categories": [
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      "id": "8",
      "name": "Holidays"
    },
    {
      "id": "11",
      "name": "The Arts"
    }
  ],
  "contributor": {
    "id": "1564880",
    "description": "Happy Mid Autumn Festival background with golden glitter Moon and hand drawn Moon Rabbits. Vector illustration",
    "image_type": "vector",
    "is_auth": false,
    "is_illustration": true,
    "has_property_release": true,
    "keywords": [
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      "art",
      "artistic",
      "asian",
      "autumn",
      "background",
      "bunny",
      "calligraphy",
      "celebration",
      "china"
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    "media_type": "image",
    "url": "https://www.shutterstock.com/image-vector/60011689"
  }
}
```

Insights across credit lifecycle enhance targeting and account management

Data type: Consumer wealth data

Data provider: Equifax, Inc.

Equifax Inc. is an Atlanta-based solution provider with strong outsourced relationships in businesses, government, and consumers. It provides commercial information such as credit scoring, modeling, portfolio analytics, and fraud detection, along with mortgage, financial marketing, and identity management services. Its customers seek ways to boost marketing efforts by improving messaging and better aligning credit offers with their own ideal customers based on estimated credit usage and needs. Equifax delivers CreditStyles Pro to provide additional measures, scores, and credit variables to help. Information such as risk scores, intent indicators, and aggregated FICO® scores down to the ZIP+4 level gives customers critical insights on credit usage. These insights are based on availability, need, and usage throughout the customer lifecycle. Through CreditStyles Pro, Equifax provides customers the analytical muscle they need to optimize prospecting and targeting and to improve account management.

Improved targeting and response rates drive more efficient customer acquisition

Data type: Geodemographic postcode segmentation

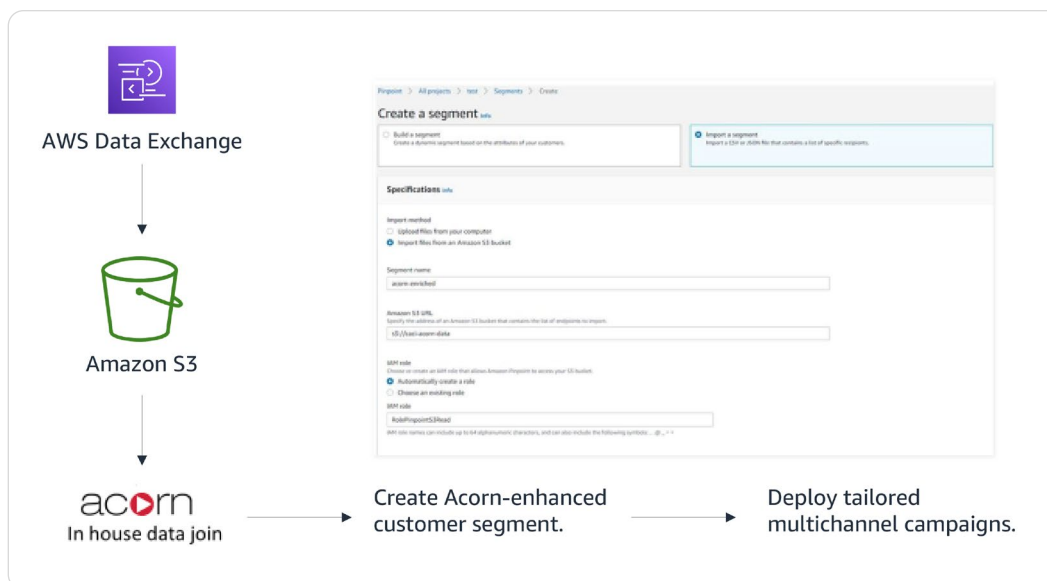
Data provider: CACI

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- Insights into customers and why they behave the way they do across platforms
- Development of customer segments for campaign and journey creation
- Understanding of the market to help develop propositions and accurately predict take-up
- Understanding of the types of customers in catchment areas to improve network efficiency, range planning, and media planning

Marketing campaigns are not inexpensive, and organizations are challenged to improve their return on that investment. Building demographic profiles that enable a business to customize its message to the right consumer segment is critical for increasing response rates. Acorn profiles provide demographic insights based on location, interests, attitudes, and channel preferences. With Amazon Pinpoint and Acorn's Knowledge matrix, a business can run a targeted campaign across different channels based on customer preferences, use A/B testing to try out

different creatives or send times, compare results, and continue to refine campaign mechanics. As a result, businesses can improve response rates and drive more efficient customer acquisition.

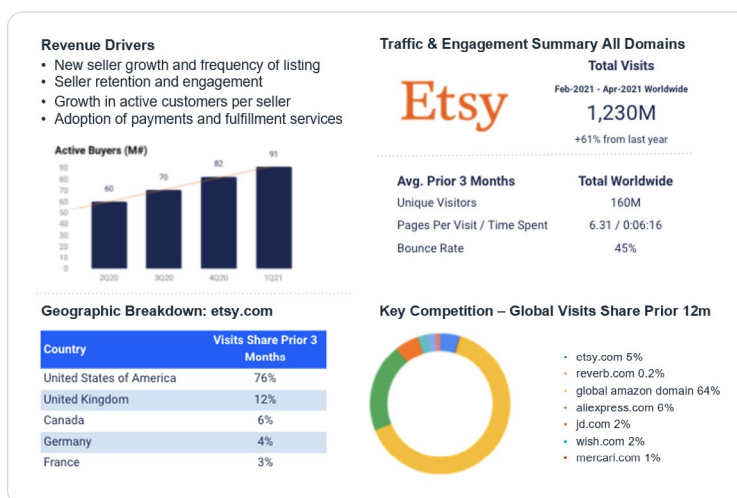


Visibility into online retailer helps drive accurate valuation

Data type: Retail, location, and marketing data

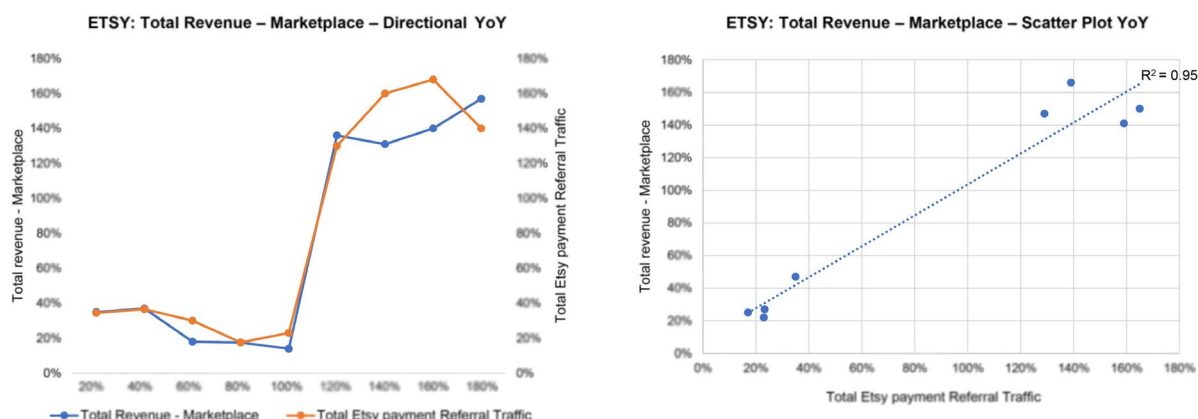
Data provider: Similarweb

Similarweb is one of the most trusted platforms for understanding online behavior. Millions of people use Similarweb's insights daily to strengthen their knowledge of the digital world. These insights allow organizations and individuals to make smarter decisions by understanding why things happen across the digital ecosystem. A hedge fund sought visibility into the digital performance of the two-side marketplace, Etsy, which connects millions of passionate and creative buyers and sellers. Etsy's revenue is primarily from transaction, listing, and payment-processing fees, as well as on-site advertising and shipping services. However, much



of the company's value lay in less tangible forms. The company claimed significant value based on its niche space and high seller loyalty. The brand also saw itself as the dominant market leader for handcrafted and vintage goods. Similarweb was able to create a Stock Brief on Etsy, giving the hedge fund insights into Etsy's digital footprint. The brief included insights into Etsy's revenue drivers and company key performance indicators (KPIs). Similarweb also created a data feed to provide the hedge fund nearly continuous monitoring of Etsy's performance. The additional insights provided by this report helped inform this hedge fund's investment strategy to increase the growth of its portfolio. It also helped give the hedge fund an edge over the competition, providing a deep understanding of Etsy's performance.

Visual Relationship of Reported Company KPIs and Similarweb Digital Metrics



Key KPI Relationship: Etsy's growth in marketplace revenue has a high historical correlation with growth in outgoing traffic to payment providers, such as PayPal. Adjusted R^2 is approximately 0.95, with a MAE of 15%.

Analyzing online behavior guides strategy at different stages of the purchase path

Data type: Retail, location, and marketing data

Data provider: Similarweb

Similarweb is one of the most trusted platforms for understanding online behavior. Millions of people use Similarweb's insights daily to strengthen their knowledge of the digital world. These insights allow organizations and individuals to make smarter decisions by understanding why things happen across the digital ecosystem. A leading toy manufacturer wanted to understand the consumer journey in the toys category to help inform their strategies for fine-tuning its eCommerce store. It also needed this information for working with its various retail partners to efficiently increase traffic and conversions to their products. However, it lacked insights into the consumer journey of toy shoppers, especially on third-party retailers. That gap in visibility prevented it from being able to form a comprehensive and cohesive strategy to influence potential customers at each stage of their shopping journey. Similarweb was able to analyze key digital behaviors at every stage of the path to purchase. These behaviors included key searches for toy brands and products on search engines and which sites were winning that traffic. It took a deep dive into key toy retailers, including traffic levels and how retailers acquire that traffic. It also looked at share of voice within these retailers in terms of both search and product and brand views.

These insights informed this brand's strategy when working with retail partners to increase its share of voice and, ultimately, its share of wallet. It also helped clarify the strategy for its direct eCommerce team by identifying key areas of focus. These areas included avoiding unnecessary competition with their retailers and targeting areas where consumer needs were not being fulfilled during their journey.

How do shoppers search for toys on major retailers?

Among the top toy searches Amazon, the majority mention a specific toy brand. The highlights the importance of investing your brand building in partnership with retail partners.

Top Amazon Toy Search Keywords
October 2018 to March 2018

Overall	
Keyword	Traffic share
lego	0.29%
board games	0.19%
pokemon cards	0.14%
funko pop	0.13%
nerf guns	0.13%
toys	0.11%
pokemon	0.10%
legos	0.09%
nerf	0.09%
lol surprise dolls	0.08%
beyblade	0.07%
marvel legends	0.07%
puzzle	0.07%
harry potter	0.07%
dice	0.06%
squishies	0.06%
monopoly	0.06%
games	0.06%
hot wheels	0.06%
nerf gun	0.06%

How do shoppers search for toys on search engines and who receives this traffic?

Puzzles dominates non-branded searches and are mentioned in 15.7% of all toy searches. This highlights the importance of being able to compete with these products for a significant audience that is interested in "solving" things.

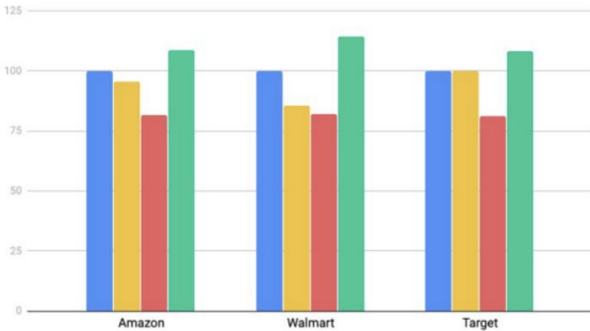
Top Toy Search Keywords
October 2018 to March 2020

Non-Branded		Branded	
Keyword	Traffic share	Keyword	Traffic share
jigsaw puzzle	5.46%	scrabble word finder	4.57%
jigsaw puzzles	2.68%	webkinz	3.74%
car games	1.71%	lego	3.55%
puzzles	1.39%	build a bear	1.53%
puzzle	1.09%	yahtzee	1.49%
logic puzzles	0.83%	uno	1.09%
games for girls	0.63%	magic 8 ball	0.98%
puzzle game	0.57%	american girl	0.96%
toys	0.30%	funko pop	0.85%
diamond painting	0.24%	scrabble	0.83%
hot toys	0.17%	monopoly	0.78%
jig saw puzzles	0.16%	american girl doll	0.72%
toddler games	0.16%	lol dolls	0.68%
custom puzzles	0.15%	barbie	0.59%
jigsawpuzzles	0.14%	beyblade	0.57%
teddy bear	0.12%	hasbro	0.56%
custom puzzle	0.12%	lego store	0.54%
jigsaw puzzles	0.12%	nerf guns	0.53%
jig saw puzzles	0.12%	baby yoda plush	0.52%
toy	0.10%	funko	0.48%

How are toy types converting on different retailers?

Passions toys have the highest conversion rate on all domains and Intellectual Property toys have the lowest conversion rates. Passion toys are often priced lower than IP toys, which may drive the higher conversion rate. This indicates that price is a key factor for the toy shopper and needs to be carefully considered in your retailer strategy.

Toys Conversion Rate ALL Categories



Retail Data



Retail data helps companies better understand shopper segmentation, improve channel strategy, expand product offerings, and optimize marketing campaigns. Organizations can use aggregated demographics and visitation data to size target market segments and identify where to invest in more capital. Retailers can use weather forecast data to anticipate customer needs and optimize inventory planning. Visitation data can also help retailers adjust staffing levels to meet fluctuations in demand for their retail locations.



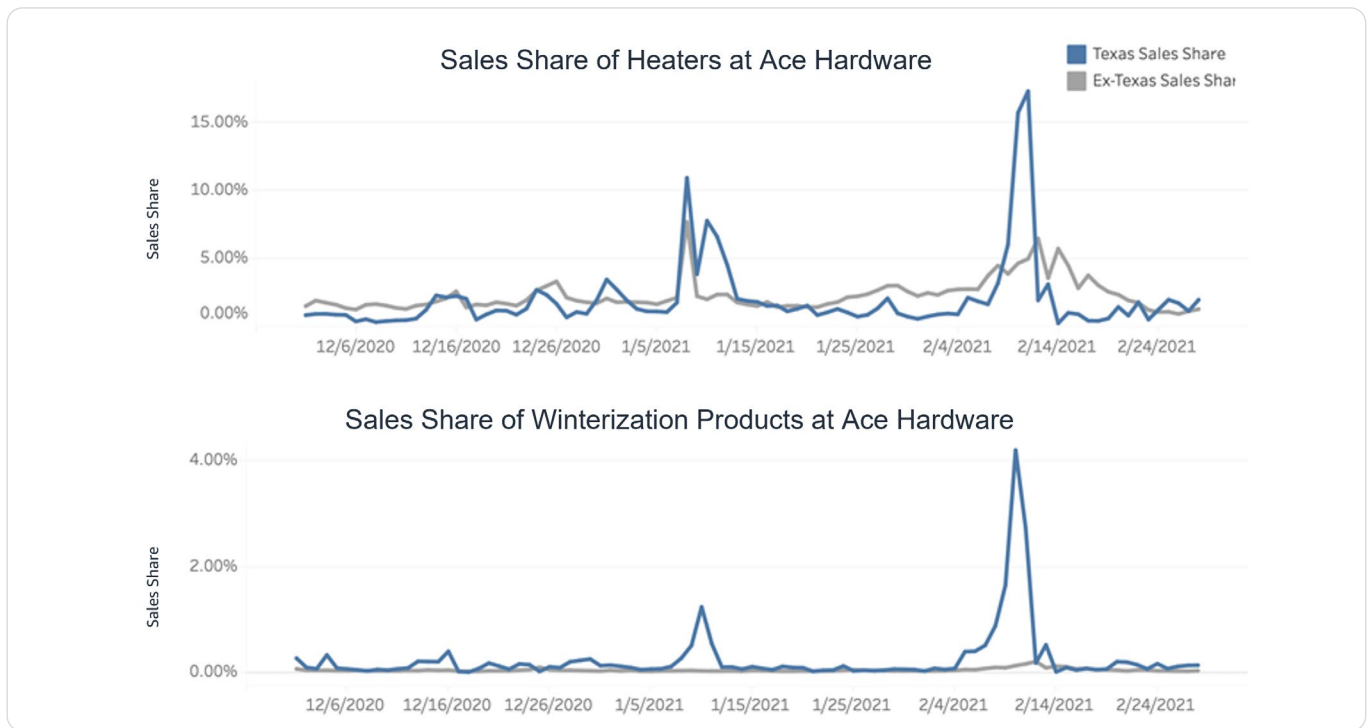
Tracking sales during extreme weather events gives a big edge to retailers

Data type: Inventory data

Data provider: Viscacha

Viscacha provides data to help professional investors and industry leaders make smarter and faster decisions. The company's flagship datasets provide a unique level of detail on the inventory and sales of consumer goods retailers and manufacturers. These retailers and manufacturers are concentrated in the big-box and specialty retail space. Seasonal weather trends, like average temperature and snowfall, and extreme and unpredictable weather events, like hurricanes and major snowstorms, can have significant effects on retail sales. Extreme weather can be challenging for retailers to respond to if they are not tracking sales and inventory at a high frequency. Granular, real-time inventory data at the product and store level allows retailers and investors to see changing sales and supply-chain disruptions for every category and product. Following extreme weather events such as the atypical Texas snowstorms in early 2021, retailers and investors can use Viscacha to gauge the effects of the event. Within 24 hours, users can see which product categories spiked and by how much. The short lag enables retailers to rapidly restock in-demand products, and the category granularity allows retailers to better anticipate demand trends for similar future events.

Viscacha's inventory data enables both retailers and investors to understand how to respond to extreme weather events. For retailers, granular inventory data can help in changing supplies during the middle of weather events, as well as anticipating demand for future weather patterns. For investors, understanding the magnitude of weather's impact on sales can give an edge in anticipating a retailer's performance. This edge becomes even sharper in a quarter with repeated extreme weather occurrences.



Real-time, comparative sales data reduces performance uncertainty for major retailers

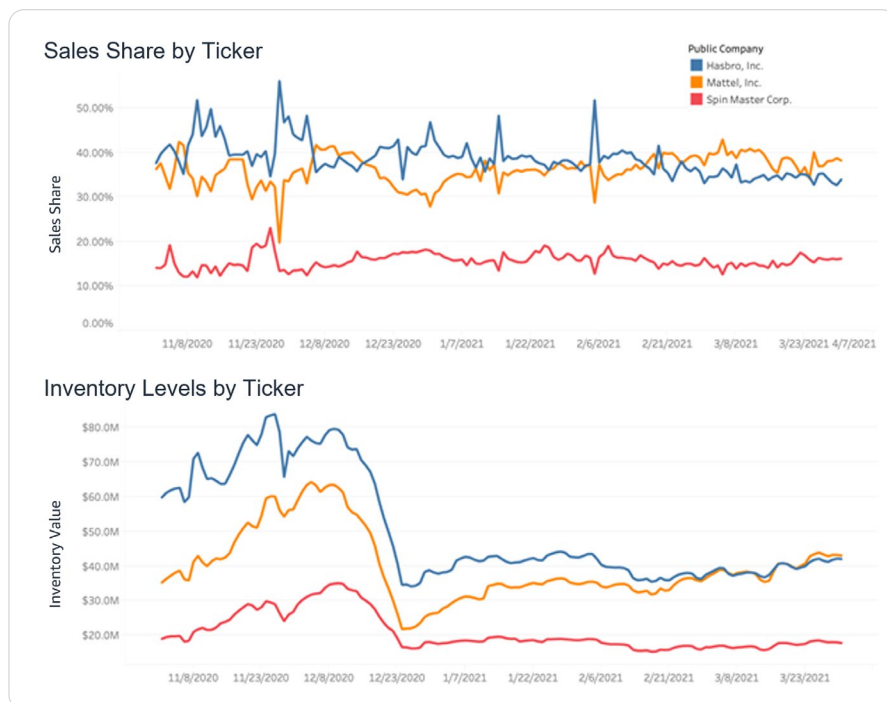
Data type: Inventory data

Data provider: Viscacha

Viscacha provides data to help professional investors and industry leaders make smarter and faster decisions. The company's flagship datasets provide a unique level of detail on the inventory and sales of consumer goods retailers and manufacturers. These retailers and manufacturers are concentrated in the big-box and specialty retail space. Major big-box retailers like Target carry products from hundreds of publicly traded companies. For a number of these companies, revenue from Target and similar stores represents a significant share of their total sales. This sales data can provide a valuable signal for company performance. However, many existing sources might provide such data do so with a significant time lag or with less detail. These shortcomings make it harder to capitalize on potential trading opportunities.

Viscacha's retail inventory data allows investors to see publicly traded companies' daily sales at Target. Investors can see sales by region, subcategory, or other levels for further granularity. In addition to viewing absolute sales, investors can also see market share changes within a sector for major categories. These changes can indicate how companies are doing relative to their competitors in similar retail contexts. With Viscacha's dataset, investors can easily do similar analyses for companies by subcategory. Analysis by subcategory is insightful for large companies with diversified category presences such as Unilever or Procter & Gamble. This can help to assess whether companies' announced expansions or changes in category focus are profitable.

Viscacha's inventory data provides essential insights for investors interested in the performance of publicly traded retail companies. The data can be easily tailored to an investor's interest in long-term trends versus recent sales shifts. It can also show sector competition versus one company's performance across several categories.



Healthcare and Life Sciences Data



The goal of healthcare and life sciences organizations is to build a sustainable model for healthcare delivery. This model should balance improving the quality of patient care with lowering costs. Data-based decision-making plays a critical role in this quest and impacts everything from accelerating innovation to detecting diseases faster to ensuring patient data remains secure. Optimizing the data value chain also requires careful analysis, storage, and protection of assets to improve the patient, provider, and member experience across the care continuum.



Advanced analytics is driving new breakthroughs in the quality of patient care

Data type: Healthcare provider clinical patterns

Data provider: Lexis Nexis Risk Solutions

LexisNexis Risk Solutions provides customers with solutions and decision tools that combine public and industry-specific content with advanced technology and analytics. Together, these resources help to assist customers in evaluating and predicting risk and enhancing operational efficiency. One of the challenges life sciences organizations face today is understanding the therapeutic journey of patients. An important determinant in this journey is the role that healthcare providers play in advising the patient.

LexisNexis MarketView Influence Networks uses its network of connections to identify engagement trends between patients and providers in a given market. This allows healthcare organizations to identify opinion leaders and target the right physicians for clinical integration, while limiting patient leakage with the increased visibility into their behaviors. LexisNexis Healthcare also improves healthcare outcomes through consumer, provider, and claims data analytics. With Lexis Nexis Risk Solutions, customers can target and better understand how physicians in a given area influence their peers, the industry, and patients – helping to reduce risk, enable compliance, increase patient engagement, and improve outcomes.

Community-based approach to illness data transmits value for consumer health

Data type: Business insights, Consumer insights, Event detection, Geolocation, Healthcare data, Social media data

Data provider: Sickweather

Sickweather has developed the world's first early warning system for commonly shared illnesses. The company focuses not only on infectious and environmental illnesses but also on common illnesses that have little or no social stigmatization associated with them. This means that a significant number of people in a location are likely to speak about them openly. Sickweather has built, grown, and validated the largest illness crowdsourcing community of its kind – processing over 6 million reports of illness each month. The company uses a patented algorithm to track and map 20 illnesses, including the common cold, flu, and COVID-19. Users of the application can tell what types and severities of sicknesses are breaking out in communities near their location.

GSK-Theraflu needed a granular, community-based approach to illness data, in order to maintain brand awareness. As a solution for GSK-Theraflu, Sickweather identified sick people and modeled a SickScore for integration with its Trade Desk that powered programmatic activation across the web. Users exposed to Sickweather's patented approach were two times more likely to convert to the Theraflu solution, resulting in a four percent increase in sales and a commitment from Theraflu to increase spending for community-based illness detection.

Innovative cold and flu tracking lead to a healthier market for consumer wellness

Data type: Business insights, Consumer insights, Event detection, Geolocation, Healthcare data, Social media data

Data provider: Sickweather

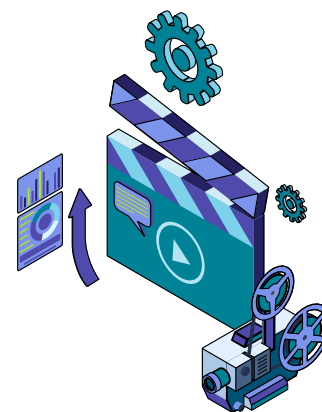
Sickweather has developed the world's first early warning system for commonly shared illnesses. The company focuses not only on infectious and environmental illnesses but also on common illnesses that have little or no social stigmatization associated with them. This means that a significant number of people in a location are likely to speak about them openly. Ketchum created a flu campaign for their client Clorox around the concept of #FluFOMO (Fear of Missing Out). Ketchum needed to adjust timing and tone based on the severity of the flu season. If the flu season was too severe, the messaging would need to be dialed back or rescheduled. If it were not particularly severe, the messaging would need to be more fun and scheduled to line up with Sickweather's data. Sickweather provided an integrated solution with weekly forecast updates pulled from its own software as a service (SaaS) product, SickweatherPro. Ketchum in turn used this data to steer the campaign and power infographics, messaging, promo production, and campaign intelligence. A variety of trackers, tools, and graphics enhanced the value of Sickweather's offer.

The Sickweather and Ketchum partnership closed a feedback loop with Clorox brand messaging within Sickweather's own app that resulted in nearly six times the click-through rate (CTR) of industry standards. This included a Clorox-branded "sympathy" button within Sickweather Groups that performed as well as the nonbranded version. Clorox delivered timely prevention tips to consumers, which enabled Ketchum's #FluFOMO campaign for Clorox to be the first of its kind to combat future flu activity. Ketchum managed budgets to ensure that funds were still available as flu season progressed to higher levels in February. Sickweather's real-time data was used to more precisely manage activity around the peak week of flu activity.

Media and Entertainment Data



Media and entertainment customers face wide-scale disruption. Companies are reinventing how they create content, optimize media supply chains, and compete for audience attention across streaming, broadcast, and direct-to-consumer platforms. Data plays an important role in this process. It helps media businesses find faster ways to drive innovation, strengthen security, accelerate production launches, and achieve time to value.



Robust content evaluation tools enable subscription growth and increased customer engagement

Data type: Media and entertainment data

Data provider: IMDb

IMDb is the world's authoritative source of global entertainment information, powering experiences for millions of customers across IMDb's consumer sites and apps. These include IMDbPro, BoxOfficeMojo, the Prime Video X-Ray experience for movies and TV, and localized entertainment-related knowledge for Alexa. IMDb's consumer sites and apps also include third-party sites and services spanning media and entertainment. Despite all the entertainment content available, organizations find it challenging to manage discovery, recommendations, and the decision of "what to watch." IMDb provides a consistent canon of global entertainment that spans movies, TV, and over-the-top (OTT) media shows. It offers both in- and out-of-catalog search. It powers a metadata engine for deep and informed content recommendations. The IMDb star rating system is recognized as a trusted source of fan-voted relevancy and popularity. IMDb's data powers content valuation modeling, programming and acquisition strategy, competitor and intellectual property (IP) performance, and investment analysis. On screen, IMDb's data powers rich content recommendations, search, and discovery features to increase consumer engagement and retention, and to drive purchase and subscription growth.

Media investors gain return on investment and competitive advantage with improved valuation capabilities

Data type: Media and entertainment data

Data provider: IMDb

IMDb is the world's authoritative source of global entertainment information, powering experiences for millions of customers across its consumer sites and apps. These include IMDbPro, BoxOfficeMojo, the Prime Video X-Ray experience for movies and TV, and localized entertainment-related knowledge for Alexa. IMDb's consumer sites and apps also include third-party sites and services spanning media and entertainment. Organizations that need to analyze entertainment investments often are challenged to efficiently manage content valuation and performance. IMDb enables investors to leverage global box-office receipts and star ratings from more than 200 million engaged entertainment fans across the world. It also offers deep metadata, including genres, subgenres, parental guides, countries, and languages. IMDb's combination of fan data, box-office receipts, and deep metadata enables investors to make better decisions around global programming and acquisition. As a result, organizations can turn more informed decisions into increased return on investment (ROI) to gain a powerful competitive advantage.

Image recognition and classification drives next-level growth for eCommerce

Data type: Computer vision: Image and object recognition

Data provider: Shutterstock

Shutterstock is an intelligent creative platform that helps creative professionals from all backgrounds and businesses of all sizes produce their best work with incredible content and innovative tools. Shutterstock's library consists of 360 million images, over 20 million video clips, 100,000 music tracks, and one million 3D models. A challenge many eCommerce companies face is how to simplify their product categorization process. The ability to recommend similar or complementary products is critical to deliver more value and improve the user experience, not to mention increasing revenue opportunities. Shutterstock's image and 3D model datasets help eCommerce and retail companies build, train, and automate image recognition models to enable improved product discovery, cataloging, recommendations, and bundling. Companies can automate image classification for an apparel catalog, for example, or improve online product discovery for a shoe retailer. Stronger product discovery and recommendations provide eCommerce companies an increase in average order value and an overall improvement in business results.

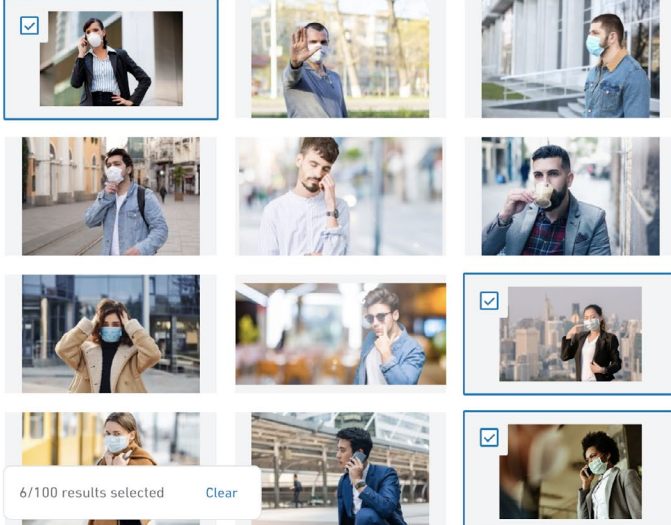
Keyword tool

Editing 1



Search

All images



Keyword suggestions

Most relevant

[Add all](#)

safety + adult + people +
coronavirus +

More options

protective mask + wear +
concept + young + influenza +
background + dust +
respiratory + contagious +
danger + girl + asian +
protect + surgical + pollution +
air + flu + businesswoman +
caucasian + bad + quarantine +
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2019ncov + syndrome +
pneumonia + world + problem +
immunity + global + save +

My keywords

Keywords

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medicine × mask × city ×
medical × outdoors × health ×
wearing × disease × illness ×
street × virus × dangerous ×
infection × care × protective ×
person × epidemic × prevention ×
pandemic × sickness × outside ×
face × female × public ×
sick × protection × woman ×
walk × male × risk ×

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Telecommunications Data



The broad-scale adoption of mobile phones has created growing stores of collected data that provide invaluable consumer and behavioral insights. The data consists of mobile phone usage, mobile location, server logs, call detail records, network equipment, social networks, and more. Companies collect this data to drive crucial business insights and improve customer experiences.



Cloud-based subscription data uncovers key performance indicators that may impact revenue

Data type: Artificial intelligence models and data, B2B data, Private company data

Data provider: DataPulse

DataPulse is a joint venture of leading technology risk consultancy JAS Global Advisors and advanced analytics simMachines experts. JAS Global Advisors has developed a strong reputation for research and development and professional services in cybersecurity, domain protection, and internet infrastructure technology. The company's network, resources, and analytics expertise have provided revenue insights for selected cloud-based offerings, including enterprise user information. Cloud-based technology companies find it increasingly difficult to discover who their customers are and how they are distributed. To respond to that challenge, DataPulse provides these businesses with information on their customers that might impact revenue. It provides metrics that are highly correlated to company key performance indicators (KPIs) including revenue, the number of high-paying customers, and the number of customers at each subscription level. As a result, these census-level datasets enable companies to predict the impacts of trends on their long-term health and viability.

Providing global investors with real-time insights into customer churn

Data type: Consumer insights data, IoT data

Data provider: TMT Analysis Ltd

TMT Analysis supplies leading investment management firms, hedge funds, and asset managers daily market insight and analysis on telecom networks and mobile device penetration around the world. One of the pain points that the company needed to solve was providing investors globally with insights on how one telco network is performing against another network. TMT Analysis can identify Internet of Things (IoT) devices in a way that helps investors see how a brand, chipset manufacturer, or network carrier performs. Investors can compare performance among competitors. The company provides daily snapshots of the global market share of brands (including Apple and Samsung). These snapshots enable investors and asset managers to see aggregated customer churn in near real-time.

Telco competitive analysis fills gaps for global investors

Data type: Consumer insights data, IoT data

Data provider: TMT Analysis Ltd

TMT Analysis supplies leading investment management firms, hedge funds, and asset managers with daily market insight and analysis on telecom networks and mobile device penetration around the world. One of the pain points that the company needed to solve was helping investors globally identify how one mobile device performs against another device. TMT Analysis can identify active smartphones, tablets, and Internet of Things (IoT)-enabled goods to help investors see how a device brand, chipset manufacturer, or network carrier is performing. Investors can compare performance among competitors. These daily insights also provide investors with a snapshot of the global market share of brands, including Apple, Samsung, Huawei, Xiaomi, Qualcomm, Intel, and Nvidia.*

* Provided by TMT Analysis Ltd

Environmental, Social, and Governance (ESG) Data

The drive towards responsible investing, sustainable finance, and greater public interest in corporate governance has caused a rapid increase in environmental, social, and governance (ESG) reporting. Essential for quantifying potential exposures and a major consideration in investment decisions, increasing amounts of data are being generated around the subject. ESG metrics are being analyzed in order to surface related risks and opportunities, model investment processes, and shape business strategies.

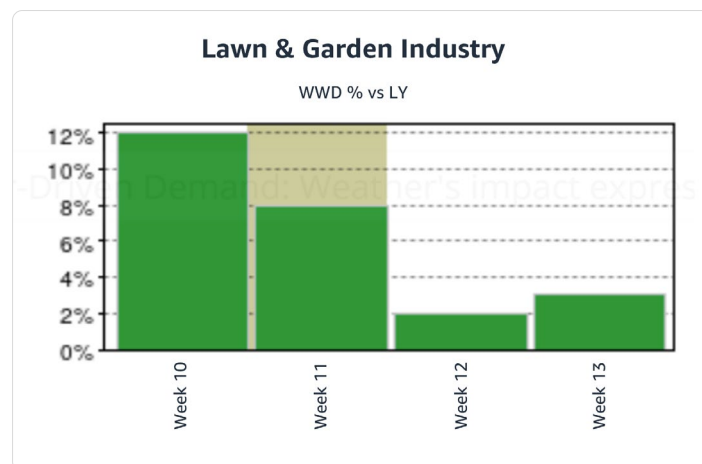


How marketing your weather data can surface key consumer insights

Data type: Consumer data

Data provider: Planalytics

Planalytics is a global leader in business weather intelligence, helping companies effectively assess and proactively address how the weather impacts their business. The company has analyzed trillions of point-of-sale (POS) transactions across more than 200,000 product categories. Weather impacts are unknown and tend to be incomparable across regions, product lines, and industries, and this uncertainty can make business decision-making and strategizing difficult. Planalytics needed to help organizations leverage their weather data as an integral part of their marketing strategies. Weather data is an important, but often overlooked, factor in consumer demand.

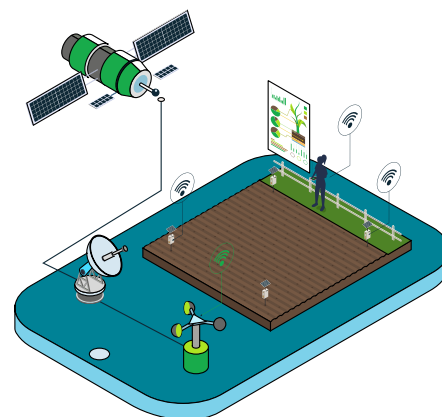


Planalytics addressed these challenges with a weather-driven demand (WDD) analytics platform that transforms the way organizations market their products and drive ad campaigns. By enabling customers to view weather impacts in a quantifiable way, Planalytics helps optimize spend, offers, and messaging based on expected weather events. This means that customers can now optimize their ad spend by understanding what, where, when, and how much to promote based on weather context. This provides customers with a true understanding of their campaign performance through the lens of weather-related data in ways not previously possible.

Agriculture and Environment Data



As the population increases exponentially, agricultural output and food production must keep pace. Technology has paved the way for this increased productivity by capturing the value of data. Irrigation and precipitation patterns, air temperature and moisture levels, and crop care processes can all be tracked. This data is generated from sensors, Internet of Things (IoT) devices, and earth-observation satellites worldwide. Those insights will enable continued agricultural advancements and will be key to creating sustainable farming best practices.



Sustainability scoring tool enables more informed investment decisions

Data type: ESG, Sustainability data

Data provider: Arabesque S-Ray

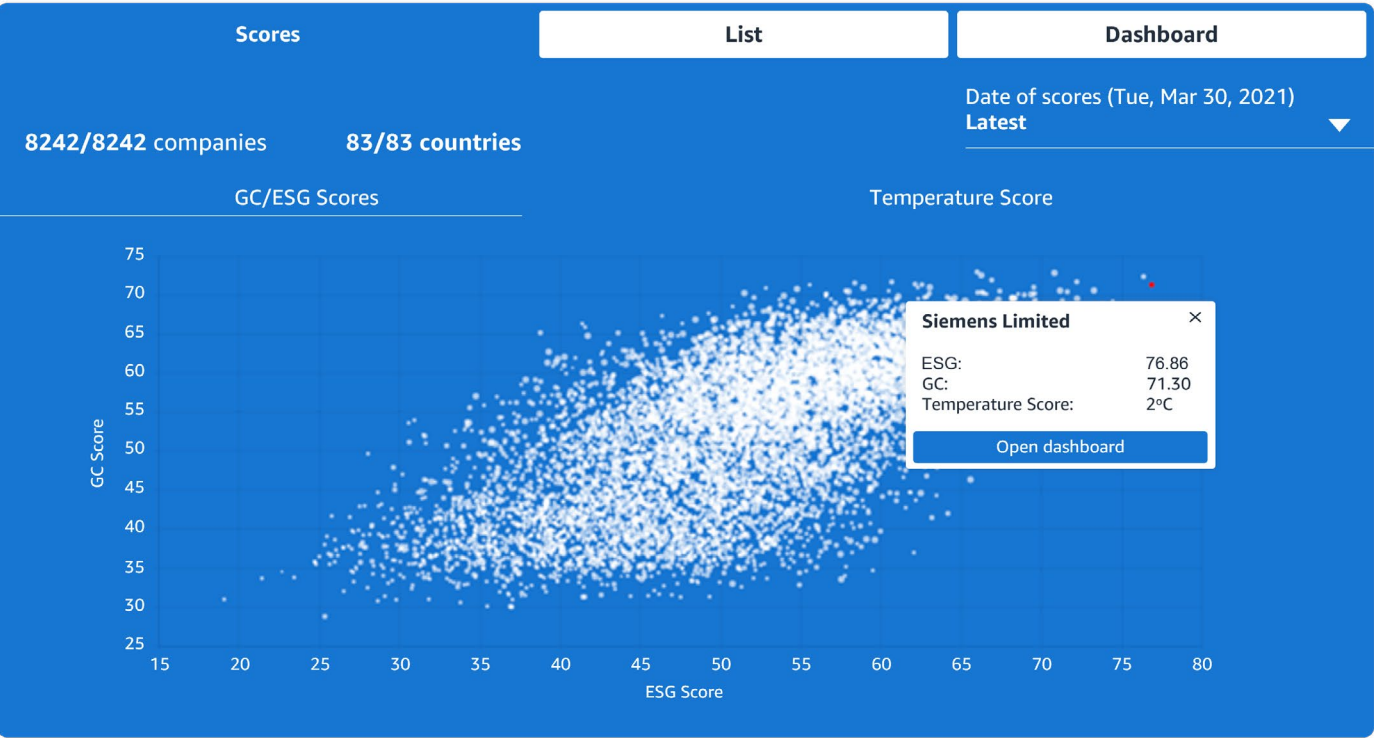
Arabesque S-Ray offers solutions that combine financial data and analytics with environmental, social, and governance (ESG) metrics to assess the sustainability of publicly listed companies worldwide. Sustainability can be a fluid concept, however, and it can depend on a range of signals from thousands of sources. The wide range of data creates a challenge for investors who want to invest only in companies whose sustainability values align with their own. Arabesque provides a unique tool, S-Ray, that provides visibility under the surface of the balance sheet into a company's extra-financial performance. S-Ray offers investors four complementary approaches to viewing sustainability – the GC Score, the ESG Score, the Preferences Filter, and the Temperature Score. Using these approaches, investors can view the sustainability performance of potential investee companies through multiple lenses. The approaches can be used to select only high-performing companies or best-in-class companies in each sector and industry. As a result, investors are more capable of monitoring their investment universe using S-Ray to select the companies that meet their sustainability criteria.

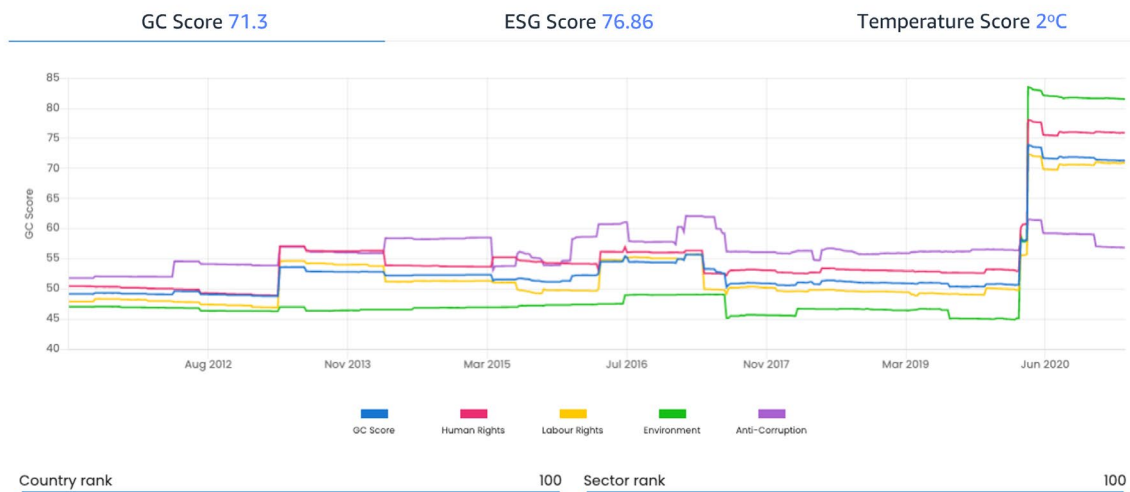
Visibility into sustainability metrics enables companies to implement meaningful improvements that drive investment

Data type: ESG, Sustainability data
Data provider: Arabesque S-Ray

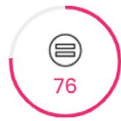
Arabesque S-Ray offers solutions that combine data and analytics and environmental, social, and governance (ESG) metrics to assess the sustainability of publicly listed companies worldwide. Arabesque provides a unique tool, S-Ray, that provides visibility under the surface of a company's extra-financial performance. The tool captures and measures a wide range of variables. To help them sort through these variables, companies need a highly granular understanding of which sustainability metrics are impacted by which business decisions. For those companies, Arabesque offers 22 scores on a feature level. These scores provide more granularity into the company's performance on sustainability aspects such as emissions, water, diversity, and transparency. A deeper dive into feature-level scores would allow companies to have a better understanding of their sustainability strengths and weaknesses. Comparing their performance against their peers in the same sector and industry would also indicate possible areas of leadership as well as areas for improvement. This way, companies who leverage S-Ray data are able to evaluate their sustainability performance and better inform their sustainability strategy.

The web tool below can help show where a firm lies in terms of sustainability in comparison to roughly 8,000 companies. It can also help users to understand what drives a firm's scores on S-Ray measures such as the ESG Score and the GC Score. Using S-Ray's 22 feature-level scores, a user can see exactly how a company's scores are derived. The scores give insight into actionable items to improve a company's sustainability.





Human Rights



Labour Rights



Environment



Anti-Corruption



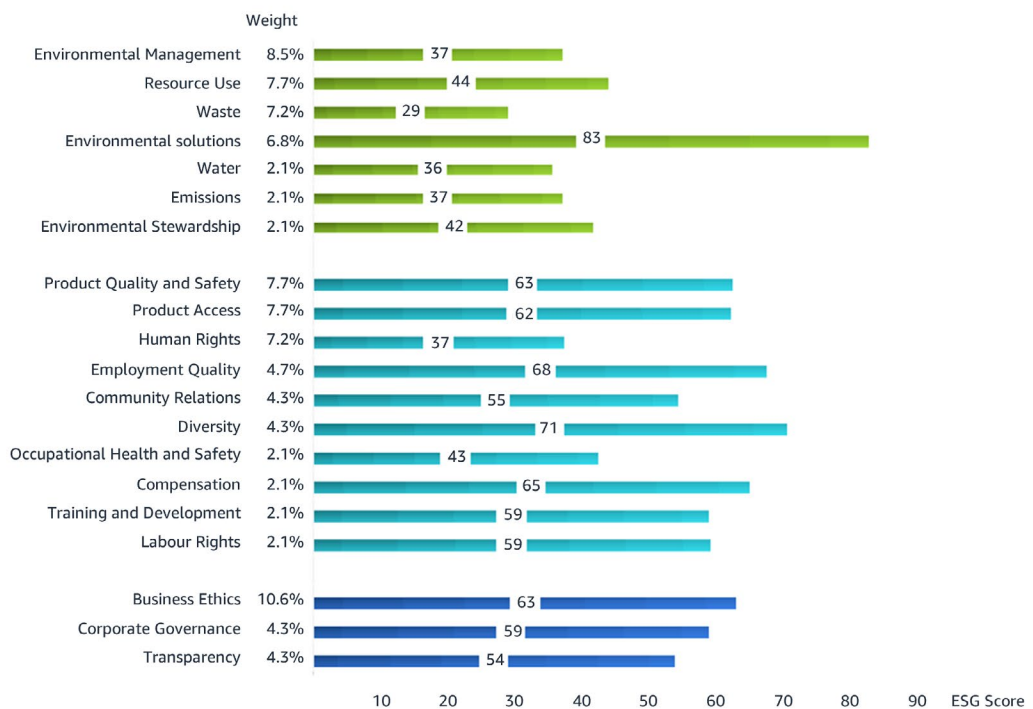
Environment



Social



Governance



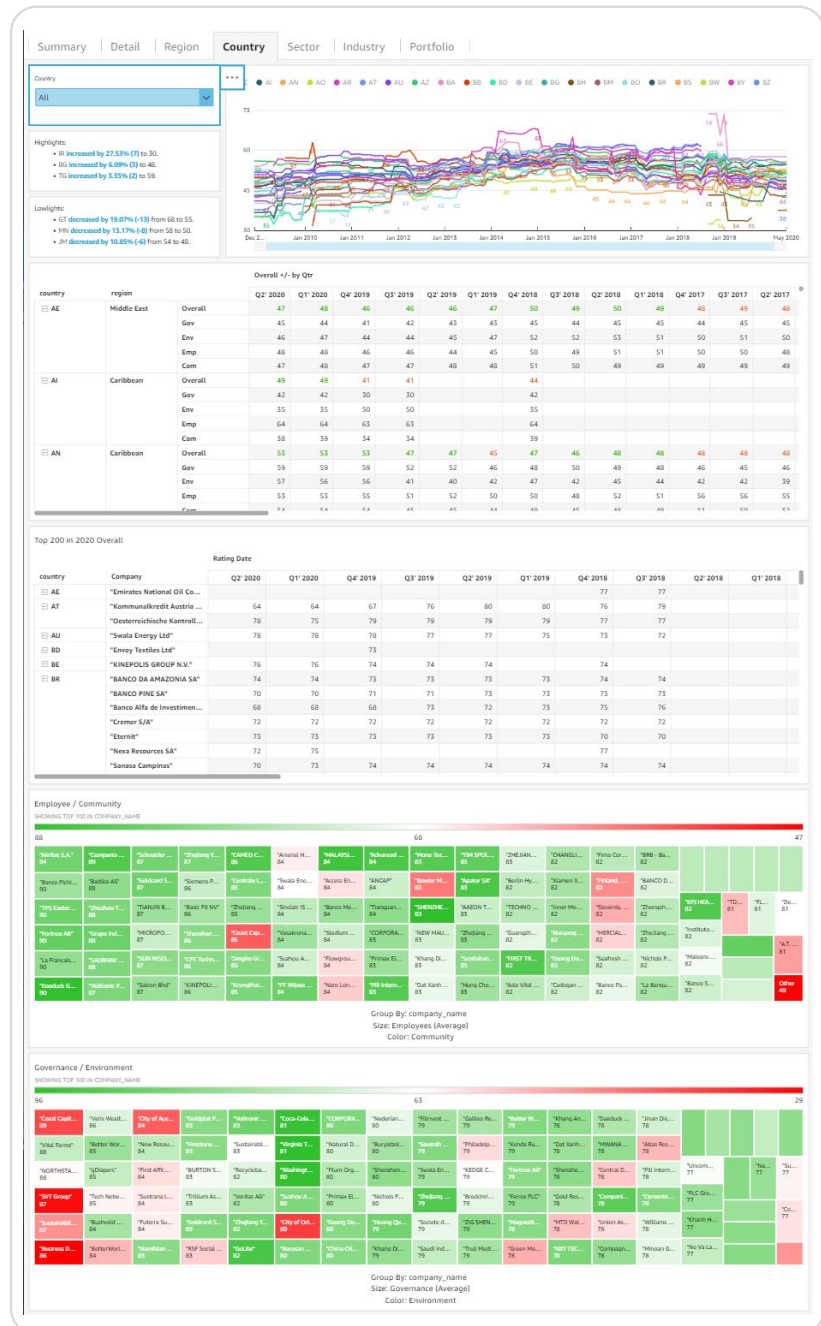
Consensus approach to environmental, social, and governance ratings enables companies to clarify improvement opportunities

Data type: ESG, Sustainability data

Data provider: CSRHub

CSRHub provides consensus ratings of company environmental, social, and governance (ESG) performance as a lever to improve corporate sustainability. Its goal is to increase awareness of ESG rating sources from a wide range of companies to illustrate the breadth and depth of the ESG data universe. CSRHub has found and ingested hundreds of sources and accumulated more than 300 million pieces of ESG data. However, the industry uses widely disparate ratings systems. Customers face the challenge of benchmarking a company's ESG performance against competitors and across industries and geographies. CSRHub offers a solution using 12 ratings for 46,000 entities to define the company's strengths and weaknesses. This approach helps organizations track and validate the effect of ESG programs using ongoing monthly input from CSRHub's dataset, clarifying opportunities to improve. As a result, companies can improve their own ESG ratings, align with stakeholders, and understand how best to tell their sustainability stories.

By reducing confusion around disparate ESG ratings, the company hopes to better collate valuation with sustainability initiatives for corporations, advisory firms, and investors.



Stable consensus rating data enhances insights, adds value to other datasets

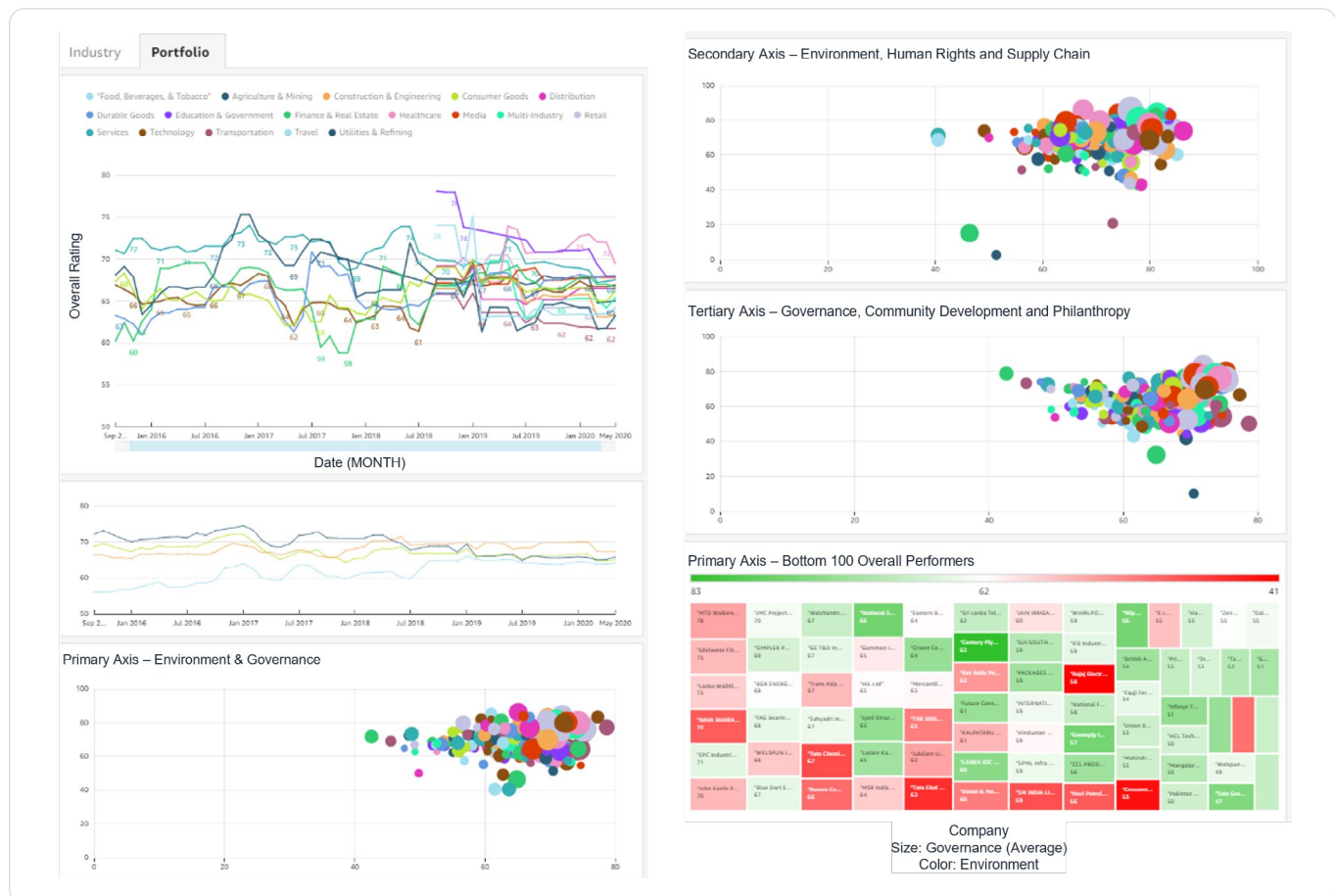
Data type: ESG, Sustainability data

Data provider: CSRHub

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Learn more:

<https://aws.amazon.com/blogs/apn/integrating-and-analyzing-esg-data-on-aws-using-csrhub-and-amazon-quicksight/>



Frost damage detection salvages crop quality

Data type: Earth observation satellite remote sensing

Data provider: D-CAT

D-CAT has a wealth of experience developing automatic, robust solutions for the remote monitoring of a range of environments, and applications. Those solutions lean on a large deployment of sensors delivering data from Internet of Things (IoT) devices to earth-observation satellites. The technologies are used widely in agricultural and environmental monitoring. Being able to remotely monitor these applications is an important task, and it benefits from algorithms that can automatically detect change or anomalies. That capability is especially critical for agricultural applications. Frost damage can have a devastating impact on crop production and profit. D-CAT's agricultural customers face the challenge of finding ways to detect and map frost damage in a crop.

For those customers, D-CAT delivers a combination of its vegetation indices, water indices, and land-surface temperature products to create maps of crop frost damage. The approach works across grain crops, such as wheat and barley, as well as across both horticulture and viticulture. As a result of these insights, customers can identify and remove damaged crops. D-CAT's data products are offered in file format or as application programming interface (API)-enabled data services via a bespoke Amazon Web Services (AWS)-hosted processing platform. This provides on-demand or scheduled data updates that make a real difference. The outcomes are robust, reliable, and usable monitoring solutions that allow users to optimize the quality of their harvest.

Remote monitoring data guides farm management

Data type: Earth observation satellite remote sensing

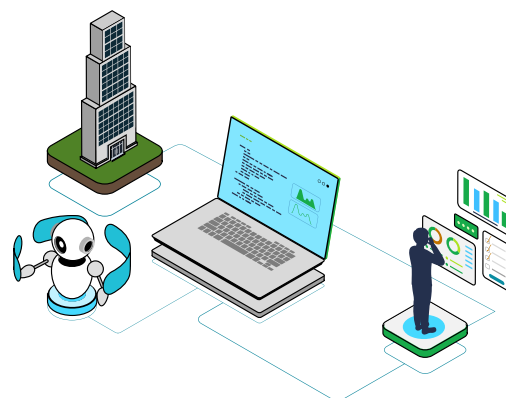
Data provider: D-CAT

D-CAT has a wealth of experience developing automatic, robust solutions for the remote monitoring of a range of environments and applications. Those solutions lean on the extensive deployment of anything from small-scale, simple sensors, up to the complex processing capabilities of larger, wide-range sensors. The technologies are used widely in agricultural and environmental monitoring. Agricultural customers are challenged to efficiently manage crops with growth patterns and needs that vary widely throughout the season. One area of attention includes identifying the right time to spray crop protection product. D-CAT sensors capture an array of data that can help. D-CAT's Vegetation Indices product, coupled with a file that specifies the boundary and location of a specific field (shapefile), provides insights into what is happening in each field. This way, D-CAT provides a time series of data that monitors the characteristics of a crop during the growing season. By monitoring the relationships between these indices over time, customers can identify specific events in the growth of the crops with more certainty. The on-demand or scheduled data updates make a significant difference in farm management decisions – including the best time to spray a field.

Economic and Public Sector Data



Data is a powerful force for economic and social change. Increasingly, organizations and policymakers alike see the value of leveraging new technologies and big data to unlock digital transformation and deliver more innovative citizen services. By tapping into open data sources, organizations can feed artificial intelligence (AI)-based predictive tools that help them understand user preferences and make more prescriptive recommendations. These insights have the potential to transform public policy, open new streams of innovation, and ultimately change the way governments and citizens interact.

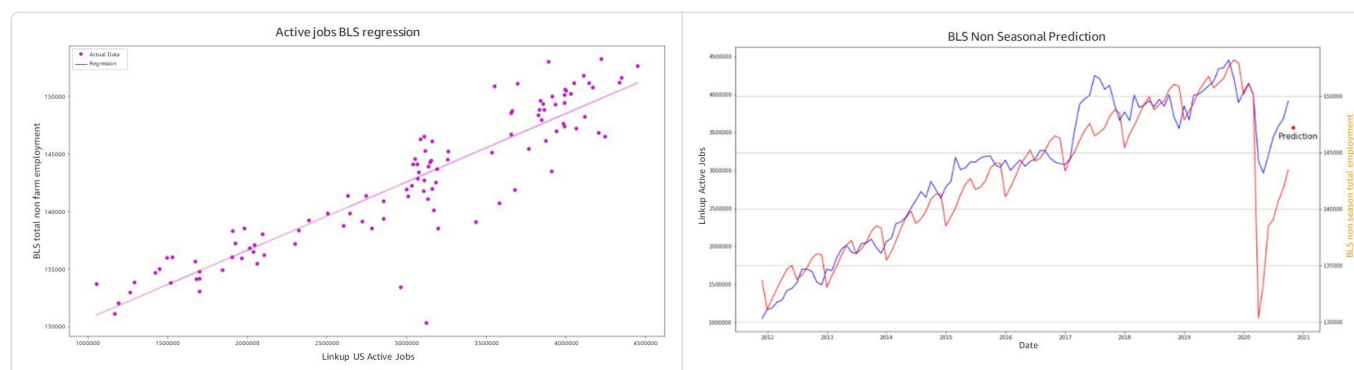


Job listing insights reveal early macroeconomic patterns

Data type: Employment data, Macro data, Web scraping data

Data provider: LinkUp

LinkUp has become a leading provider of job market data and analytics. It indexes job openings directly from company websites globally, which helps avoid duplication. This robust and unique dataset enables LinkUp to provide a wide range of insights for the global job market. For organizations that look for signals of macroeconomic trends, LinkUp provides a dataset that allows access to early insights into the Bureau of Labor Statistics Nonfarm Payrolls (BLS NFP) numbers. With LinkUp's raw dataset, users can create a linear regression model that outperforms consensus prediction. That data can be used at the company level to find signals in hiring patterns. It also enables better insight into the strategic direction of the company on a macro scale, enabling faster and more accurate insights into the economy.

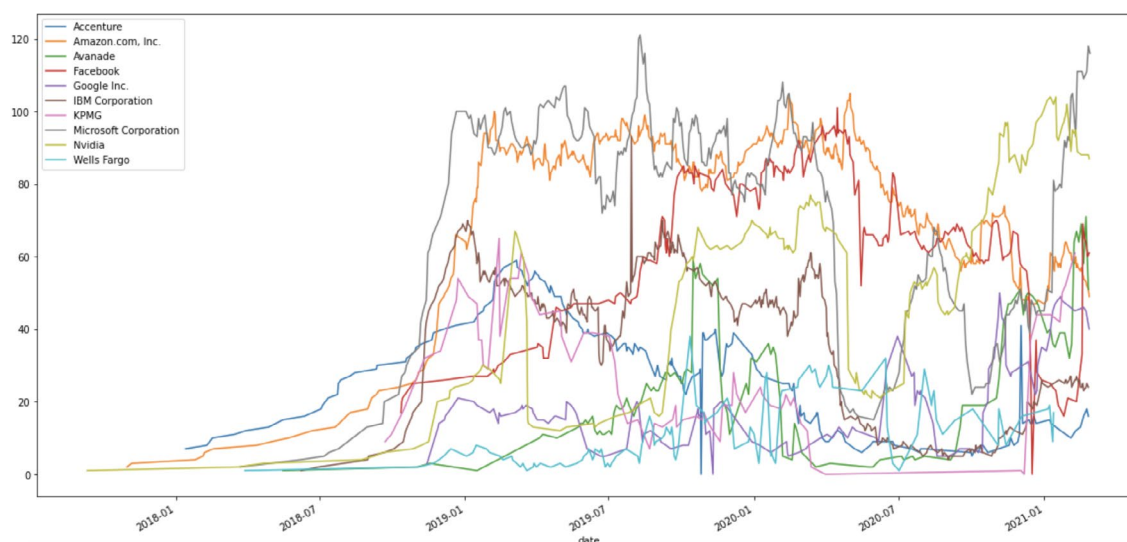


Job titles data uncovers company investment commitments

Data type: Employment data, Macro data, Web scraping data

Data provider: LinkUp

LinkUp has become a leading provider of job market data and analytics. It indexes job openings directly from company websites globally, which helps avoid duplication. This robust and unique dataset enables LinkUp to provide a wide range of insights into the global job market. One of those critical insights provides an organization with significant value by using job titles to understand where a company is making investments in growth. Leveraging this data, economists (or investors) might learn that consulting firm Avanade and financial services company Wells Fargo are making significant investments in technology. That data could then be used at the company level to find signals in hiring patterns. In addition, it enables better insight into the strategic direction of the company on a macro scale, enabling faster and more accurate insights into the economy.



Human resource insights now make it easier to detect gender and ethnicity disparity

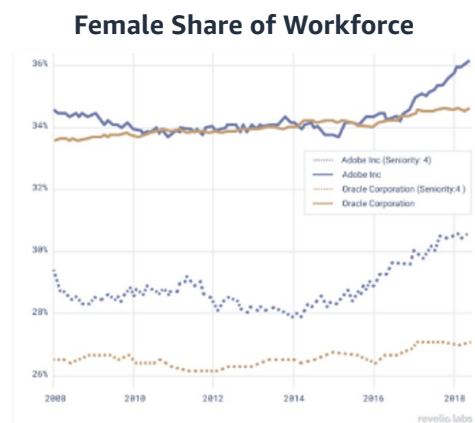
Data type: Employment data, ESG

Data provider: Revelio Labs, Inc.

Revelio Labs has standardized hundreds of millions of public employment records to create the world's first universal human resources (HR) database, providing workforce intelligence for any company. Revelio Labs needed to gain better insights on gender and ethnicity compensation, and senior disparity across major companies, which don't self-report on these differences. By using public employment data, Revelio Labs can track these disparities across any company and see gender and ethnicity distinctions by position, seniority, and location. This innovation allows anyone today to track gender and ethnicity inequality seamlessly.

Case Study: Evaluate ESG Trends

A class action suit was brought against Oracle for female pay discrimination. Overall, Oracle is adding female employees to its workforce slower to its workforce slower than its competitors. Additionally, women are being promoted at much slower rates across organization.



Gather key workforce intelligence any time, any place

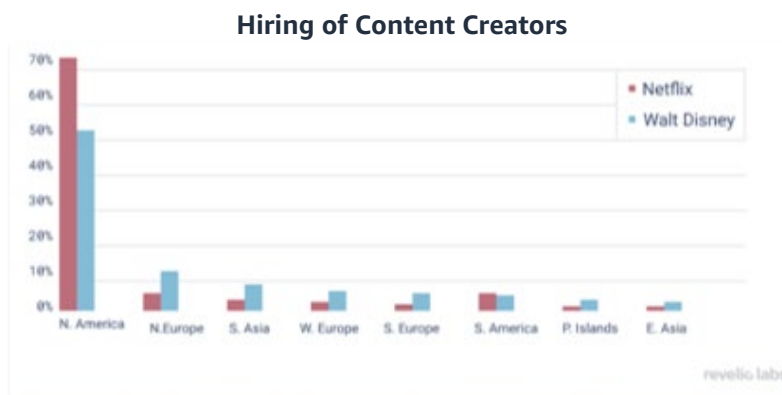
Data type: Employment data, ESG

Data provider: Revelio Labs, Inc.

Revelio Labs has standardized hundreds of millions of public employment records to create the world's first universal human resources (HR) database, providing workforce intelligence for any company. Revelio Labs needed to better understand how businesses are changing through the growth and attrition of key roles like sales and engineering. Such details are generally difficult to track externally. By using public employment data, Revelio Labs was able to easily identify key changes to every unique position within a company. This information makes it possible to track key shifts in workforce composition and other trends over time at any company globally. The workforce composition and trends include hiring and attrition rates of certain roles, gender, ethnicity, transitions between companies, macro trends, market competition, and company expenses.

Case Study: Monitor Strategic Planning

In the streaming war between Netflix and Disney, Netflix is investing almost double in original content creators. However, nearly all of these new hires have occurred in the US, far from the emerging markets in which they plan to expand. Disney, meanwhile, is hiring original content creators in those emerging markets.



Energy and Materials Data



Energy data refers to historical, real-time, and predictive analytics that unlock patterns in energy consumption and signal possible power outages. Materials data describes the properties and processing of the materials that manufacturers use (metals, alloys, plastics, composite materials, ceramics) to develop more energy-efficient solutions. Businesses continue to face the challenge of reducing costs – and enhancing their reputation – by pursuing more sustainable approaches to their operations.

As they do so, this data plays an increasingly critical role in business decision-making. It can be used to optimize energy investments and inform planning for the implementation of a range of choices. These choices include renewable energy options, sustainable materials, alternative fuels, and “green” technology initiatives. Such choices also help to benchmark responsible corporate energy usage and directly impact brand, public persona, and ultimately, profitability.



Waste data reveals hidden company performance issues

Data type: Oil and gas waste data

Data provider: Waste Analytics LLC

Waste Analytics is a data and analytics firm focused on providing high-resolution, high-quality data and risk information to the financial sector. The company assesses environmental factors related to current and past operations and practices, helping financial organizations and investors identify risk factors that impact value. One of those factors is how waste data impacts performance, which can be an indicator of financial standing or ongoing concern. Waste Analytics analyzed a manufacturing company that switched waste management practices, moving from outsourcing waste to a landfill to burying it. The Waste Analytics analysis revealed that the change incurred lower costs but brought higher risk, and it significantly impacted human resources and capital expenditure (CAPEX). The company publicly touted its environmental, safety, and governance (ESG) efforts, but the data told a different story. The change in their waste practices was a key indicator that the company was in financial distress. Waste Analytics customers could then more accurately assess the company's assets and liabilities, and the data provided insight into governance. The resulting insights help better inform and improve investment relationships, and help organizations make better investment decisions faster.

Company valuations swing by billions when environmental liabilities are uncovered

Data type: Oil and gas waste data

Data provider: Waste Analytics LLC

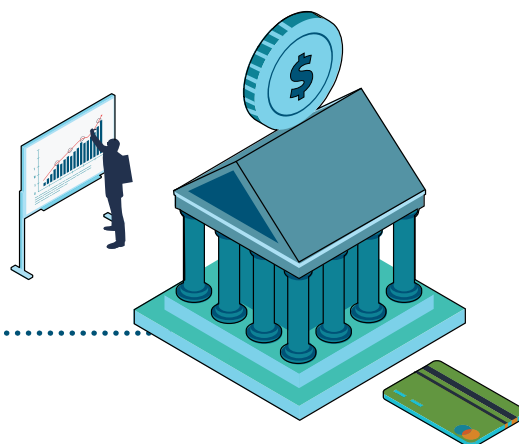
Waste Analytics is a data and analytics firm focused on providing high-resolution, high-quality data and risk information to the financial sector. The company assesses environmental factors related to current and past operations and practices, helping financial organizations and investors identify risk factors that impact value. One of the key indicators of value is often an unreported or underreported liability. Those liabilities that are reported – such as asset retirement obligations for oil and gas, for example – are rarely audited. This lack of information presents a significant challenge for investors. Waste Analytics overcomes this challenge by providing a risk-based approach to calculating liability based on environmental metrics in addition to balance sheet metrics. This solution better informs financial enterprises in their assessment of financial ratios and company value. It can also help identify companies who are exposed to environmental risks, providing a more accurate valuation on which to base investment decisions. That liability can reach into the billions.^{1,2}

¹ [Case Summary: Settlement Agreement in Anadarko Fraud Case Results in Billions for Environmental Cleanups Across the Country](#), EPA United States Protection Agency, 2015.

² [Duke Energy Agrees to Coal-Ash Cleanup Settlement](#), The Wall Street Journal, January 2020.

Financial Services Data

The financial services category encompasses a broad range of businesses that manage money. It includes credit unions, banks, credit-card companies, insurance companies, accountancy companies, consumer finance companies, stock brokerages, investment funds, individual managers, and some government-sponsored enterprises. These customers can seamlessly integrate the data they subscribe to with their own data to power portfolio risk modeling, trading strategies, and advisory services.



Financial Market and Business Intelligence Data



Financial institutions must gain access to real-time data to make fast, sound business decisions that increase profit and decrease risk. That data guides market, compliance, and opportunity assessments, and its value increases as organizations get faster at deriving actionable insights. Business intelligence speeds that process by applying visualizations, reporting, and predictive analytics to financial data, enabling faster, more reliable business decisions.



Short- and long-term volatility scoring better predicts risk

Data type: ESG, Sentiment, News

Data provider: Act Analytics

Act Analytics, a Canada-based financial technology (fintech) company, delivers real-time, trusted news coverage and proven artificial intelligence (AI) that provides investors unbiased, independent environmental, social, and governance (ESG) insights. Investors leverage the insights from Act Analytics to build portfolios, develop their own scores, and monitor risk. Investors are constantly challenged for ways to anticipate market volatility and movement to manage risk and discover alpha. To this end, Act Analytics delivers a propriety scoring system that includes real-time ESG signals along with longer-term ratings like volume, momentum, and change levels. These are constructed and searchable based on Sustainability Accounting Standards Board (SASB) materiality standards. For example, when a pipeline project was canceled, it was considered a win for the environment. By contrast, it also resulted in a steep drop in an energy company's score. Why? The news was coupled with a host of other negative effects on workers and Indigenous communities that stood to benefit from the pipeline. Act Analytics delivered data around a combination of multiple variables on both short- and long-term indices to evaluate the company. As a result, investors could easily chart increased volatility and adjust their investment position accordingly. An Act Analytics machine learning-derived ESG dataset provided the real-time signals and the underlying data needed to predict the change in risk level.

News volume along with other indicators improves risk assessment capabilities

Data type: ESG, Sentiment, News

Data provider: Act Analytics

Act Analytics, a Canada-based financial technology (fintech) company, delivers real-time, trusted news coverage and proven artificial intelligence (AI) that provides investors unbiased, independent environmental, social, and governance (ESG) insights. Investors leverage the insights from Act Analytics to build portfolios, develop their own scores, and monitor risk. Although news events play a role in driving volatility, investors are challenged to look deeper and find other ways to ferret out information that impacts risk. Act Analytics found that the volume of ESG news about a company can predict price volatility for up to three days. In other words, a big ESG event tends to drive persistent volatility, not just a knee-jerk signal. Act Analytics has also been able to show that ESG events predict volatility better than news events in general, such as when Amazon has a big sale. This additional information, compiled with news on 30 companies' Act Analytics tracks, provides its investors with a more efficient way to assess volatility. The result is a more practical and accurate view of investment and options strategies.

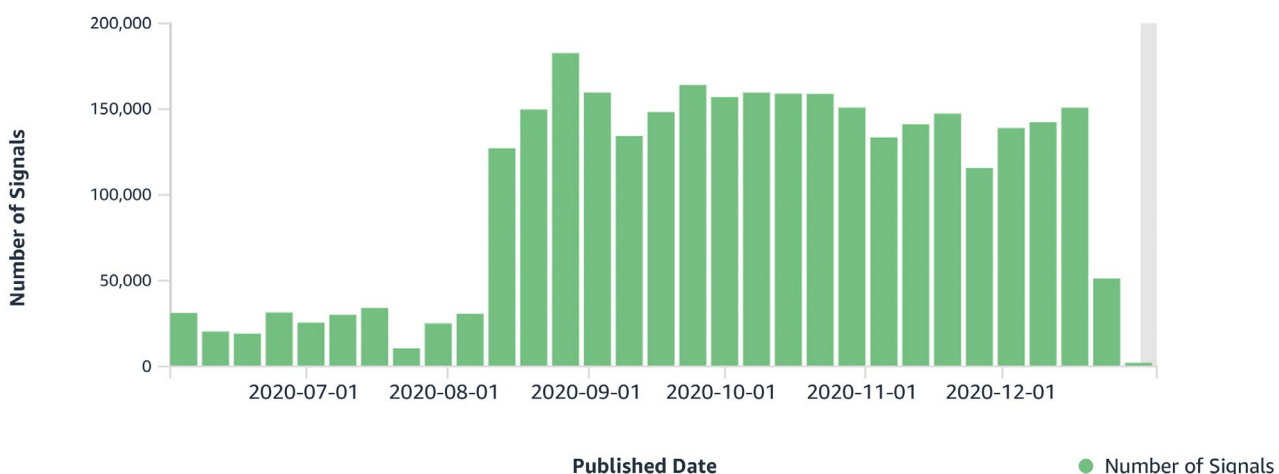
Natural language processing platform increases transparency

Data type: Artificial intelligence models and data, B2B data, Business insights, ESG, Financial data, Knowledge graph, News, Online search trends, Private company data, Public sector data, Reviews and ratings, Sentiment, Social media data, Web scraping data

Data provider: Accern

Accern is a no-code artificial intelligence (AI) platform that enables data teams at financial organizations to easily build models that uncover investment signals and trends. Data scientists and data analysts use Accern to build and deploy adaptive natural language processing (NLP) and forecasting models. These models are specifically trained for financial use cases. They are designed to automate processes, find value in data, and inform better business decisions – faster and more accurately than before. Facing an increasing deluge of data, analysts and investors are challenged to extract relevant information to obtain accurate environmental, social, and governance (ESG) insights. Other challenges include lack of real-time data, limited coverage of ESG factors, and lack of transparency from companies on ESG practices. The combination of factors makes it easy to miss pertinent information.

To help investors overcome those challenges, Accern provides a no-code workflow to calculate ESG scores from the convenience of one platform using AI and NLP. It offers an integrated data store with over 35,000 sources from global news, public data, and research from a range of leading data providers. Users can model data on over 40,000 different companies and track over 26 ESG events that are available out-of-box. These include but are not limited to air quality; employee health, safety, and well-being; compensation and benefits; and business ethics. These alternative data sources give customers a 360-degree view of a company's ESG practices.



Top Event Hits – Count

Machine learning automates assessment, improving speed and accuracy of credit risk signals

Data type: Artificial intelligence models and data, B2B data, Business insights, ESG, Financial, Knowledge graph, News, Online search trends, Private company data, Public sector data, Reviews and ratings, Sentiment, Social media data, Web scraping data

Data provider: Accern

Accern is a no-code artificial intelligence (AI) platform that enables data teams at financial organizations to easily build models that uncover investment signals and trends. Data scientists and data analysts use Accern to build and deploy adaptive natural language processing (NLP) and forecasting models. These are specifically trained for financial use cases, to automate processes, find value in data, and inform better business decisions – faster and more accurately than before. Credit risk analysts are challenged to capture and organize a deluge of data to enable more accurate insights on the credit risk of potential and current borrowers. The main challenges of identifying credit risk include heavy manual and time-consuming processes involved in monitoring relevant data, along with the inability to identify events in a timely manner. Other factors include the general lack of information on small to medium-sized businesses as compared to the level of coverage of public companies.

To help analysts determine the relative risk of default for a borrower, Accern offers AI that financial firms can use to reveal hidden information on a borrower’s credit risk. Users can then save time and money by utilizing Accern’s finance-specific machine learning models, as well as by using its AI and machine learning to automate manual processes. It offers an integrated data store with over 35,000 sources from global news, and public data and research. Additionally, users can apply out-of-the-box credit risk use cases that can track events such as previous defaults, bankruptcies, covenant default, debt restructuring, and lawsuits. As a result, Accern can help financial firms evaluate credit risk signals faster and more accurately.

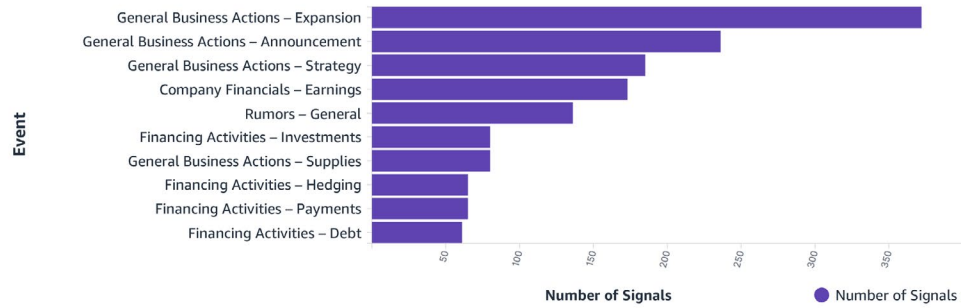


[Hidden Road Credit Risk Use Case] Number of Even Groups

58

Number of Even Groups

[Hidden Road Credit Risk Use Case] Top Events – Event



[Hidden Road Credit Risk Use Case] Number of Stories

950

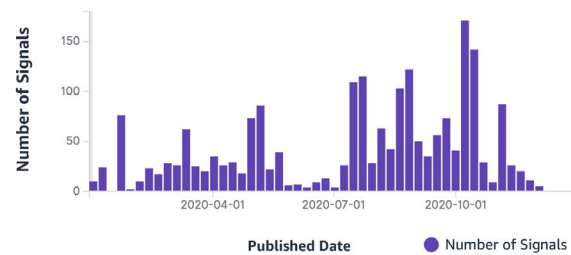
Number of Stories

[Hidden Road Credit Risk Use Case] Number of Signals – Event

2,057

Number of Signals

[Hidden Road Credit Risk Use Case] Signals Over Time – Event



[Hidden Road Credit Risk Use Case] Event Hits Word Cloud – Event



Top Event Hits – Count

[Hidden Road Credit Risk Use Case] Events Hits by Mentions – Events

Event Hits	Signals
market	604
companies	255
expanding	173
reported	115
strategy	135
company	362
announced	101
expands	72
strategic	65
reporting	59

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Artificial intelligence-supported sentiment indicator gives investment analysts a leg up

Data type: Financial data, Sentiment

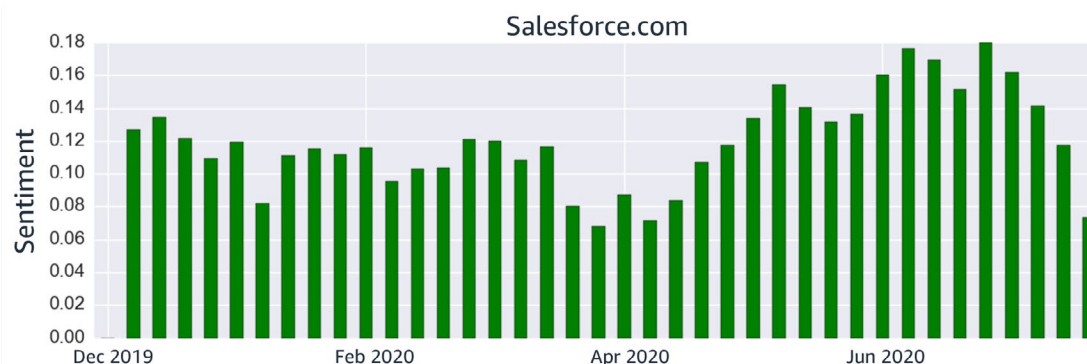
Data provider: Brain

Brain is a research-oriented company with a highly powerful artificial intelligence (AI) platform. It enables users to create proprietary signals and algorithms for investment strategies in financial markets. With thousands of financial news items generated daily, analysts are overrun with results. They can't possibly manually process and extract all the necessary information for all the companies. Brain helps them to overcome that barrier with the delivery of an automated monitoring system for financial news based on natural language processing (NLP). The Brain Sentiment Indicator tracks more than 10,000 global companies to provide aggregated metrics – like sentiment and level of attention – on specific stocks. Brain also supports clients in developing, optimizing, and validating their proprietary models. In recent years, the Brain Sentiment Indicator has identified a range of key trends that have impacted investors. The Brain Sentiment Indicator can be used to understand trends in financial media surrounding specific companies. It detected the Cambridge Analytica scandal weeks before it occurred based on negative news concerning Facebook. And it identified the quick rebound of tech stocks – particularly cloud providers – shortly into the global pandemic.

Major tech stocks (e.g., Apple Inc.) showed a quick recovery in sentiment after the pandemic outbreak.



Sentiment toward companies offering cloud-based services stayed positive even during the pandemic since many companies accelerated the digitalization processes (e.g., Salesforce.com).



Natural language processing automates ingestion of company reports

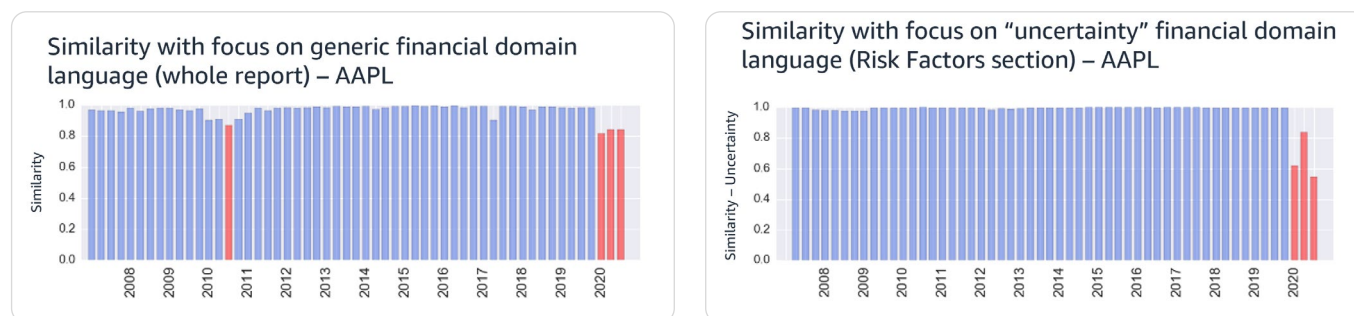
Data type: Financial data

Data provider: Brain

Brain is a research-oriented company that has developed an integrated and highly powerful artificial intelligence (AI) platform. It enables users to create proprietary signals and algorithms for investment strategies in financial markets. One of the challenges market analysts face is the delay in market response to company filings due to the increased complexity and length of such reports. Over the last 20 years, the length of the average 10-K has increased dramatically, making it too much for a human analyst to process alone.

The Brain Language Metrics on Company Filings system applies natural language processing (NLP) techniques to automate the analysis of language in company reports. These insights help analysts to build systematic investment strategies based on specific metrics whose language indicates risk. With NLP, financial analysts can better identify changes in the language used in company reports and build innovative and uncorrelated investment strategies.

One of the language metrics included in the dataset is the similarity between 10-K and 10-Q reports as shown in the following plots for AAPL stock.



The backtesting of the Russell 3000 universe ranked by the similarity metrics of the Risk Factors section shows a promising separation in quintiles in the interval 2010-2021. Stocks that show more changes in the Risk Factors section seem on average to underperform the universe (top quintile, dark green). Stocks that show less change in the Risk Factors section seem on average to outperform the universe (bottom quintile, red color).



Machine learning manages financial analyses too complex for conventional statistical methods

Data type: Financial data

Data provider: Brain

Brain is a research-oriented company with a highly powerful artificial intelligence (AI) platform. It enables users to create proprietary signals and algorithms for investment strategies in financial markets. One of the challenges the industry faces is that conventional statistical techniques are often inadequate to explain nonlinear patterns and correlations in financial data. Brain solves for that complexity by using its machine learning platform to apply advanced statistical techniques to generate a daily stock ranking. The ranking is based on the predicted future returns of a large group of stocks. The model implements a voting scheme of machine learning classifiers that mitigate the well-known overfitting problem for financial data with a low signal-to-noise ratio. The company has performed several statistical validations of the obtained stock ranking. A stock portfolio with the most positive prediction provides a cumulative return much larger than a portfolio of the most negative stocks. Its proprietary AI platform can be applied to create alternative data for investing.

The following graph shows the return of five long-only portfolios built with stocks divided in quintiles determined using the predicted ranking and rebalanced every week. Stocks with the most positive prediction (dark green line) are much better performing than the most negative stocks (dark red line), and the gap increases over time.



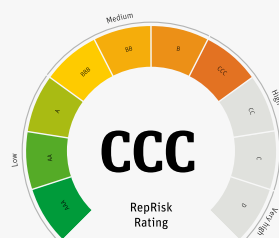
Reputation data helps investors spot trends before they become a problem

Data type: ESG

Data provider: RepRisk

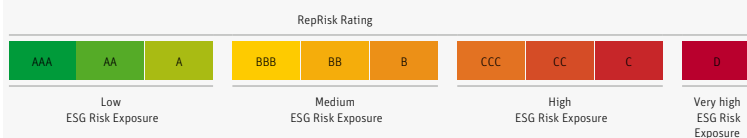
RepRisk provides qualitative research and quantitative data on environmental, social, and governance (ESG) risks to over 400 clients and 20 partners from around the world. Clients come to RepRisk for help-with systematically identifying, assessing, and monitoring ESG risks in their own businesses. RepRisk helps investors do the same in other businesses. The analysis of ESG risks helps identify and assess issues that have financial, compliance, and reputational implications. In turn, the information is used to help financial institutions make the best financing, investment, and business decisions. These financial institutions, however, have a significant challenge in gaining actionable insights on investments that consider the broad range of financial, compliance, and reputational implications.

RepRisk's dataset covers more than 130,000 private companies from all over the world, including emerging and frontier markets. It follows a rules-based, transparent methodology that helps ensure consistent data is generated at a point in time (not reverse-engineered). With daily updates and close to 15 years of data history, the company helps quant-focused investors and users who need stable, comparable data with granularity and unbroken time series. It also captures reputation data from over 100,000 public sources and stakeholders screened daily in 20 languages as a counterpoint to potentially self-serve company disclosures. Pension funds, central banks, sovereign wealth funds, and 17 of the 25 largest global investment managers rely on the data to integrate ESG into their investment analysis. The timely, reliable, and actionable data of RepRisk helps clients spot trends before they become major problems. For example, RepRisk identified Volkswagen as "high-risk" in September 2014, a full year before it was engulfed in an emissions scandal that crushed its stock price. RepRisk was the only ESG data provider to flag the company's risk exposure.

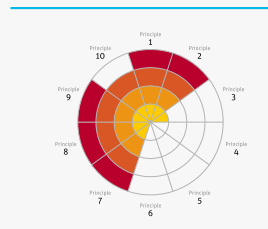


The RepRisk Rating is a proprietary risk metric that captures and quantifies a company's risk exposure related to ESG issues. It combines a company's own ESG risk exposure (Peak RRI) with the ESG risk exposure of the countries and the sectors in which the company has been exposed to risks.

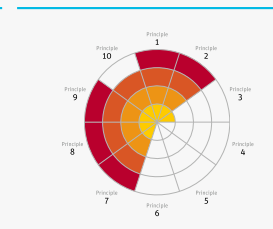
The RepRisk Rating ranges from AAA to D.



Alleged breaches of the UNGC Principles over the last two years (March 03, 2019 to March 03, 2021)



Alleged breaches of the UNGC Principles over the last ten years (March 03, 2011 to March 03, 2021)



The Ten Principles of the UN Global Compact

Principle 1 – Human Rights

Businesses should support and respect the protection of internationally proclaimed human rights.

Principle 2 – Human Rights

Businesses should make sure that they are not complicit in human rights abuses.

Principle 3 – Labour

Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.

Principle 4 – Labour

Businesses should uphold the elimination of all forms of forced and compulsory labour.

Principle 5 – Labour

Businesses should uphold the effective abolition of child labour.

Principle 6 – Labour

Businesses should uphold the elimination of discrimination in respect of employment and occupation.

Principle 7 – Environment

Businesses should support a precautionary approach to environmental challenges.

Principle 8 – Environment

Businesses should undertake initiatives to promote greater environmental responsibility.

Principle 9 – Environment

Businesses should encourage the development and diffusion of environmentally friendly technologies.

Principle 10 – Anti-Corruption

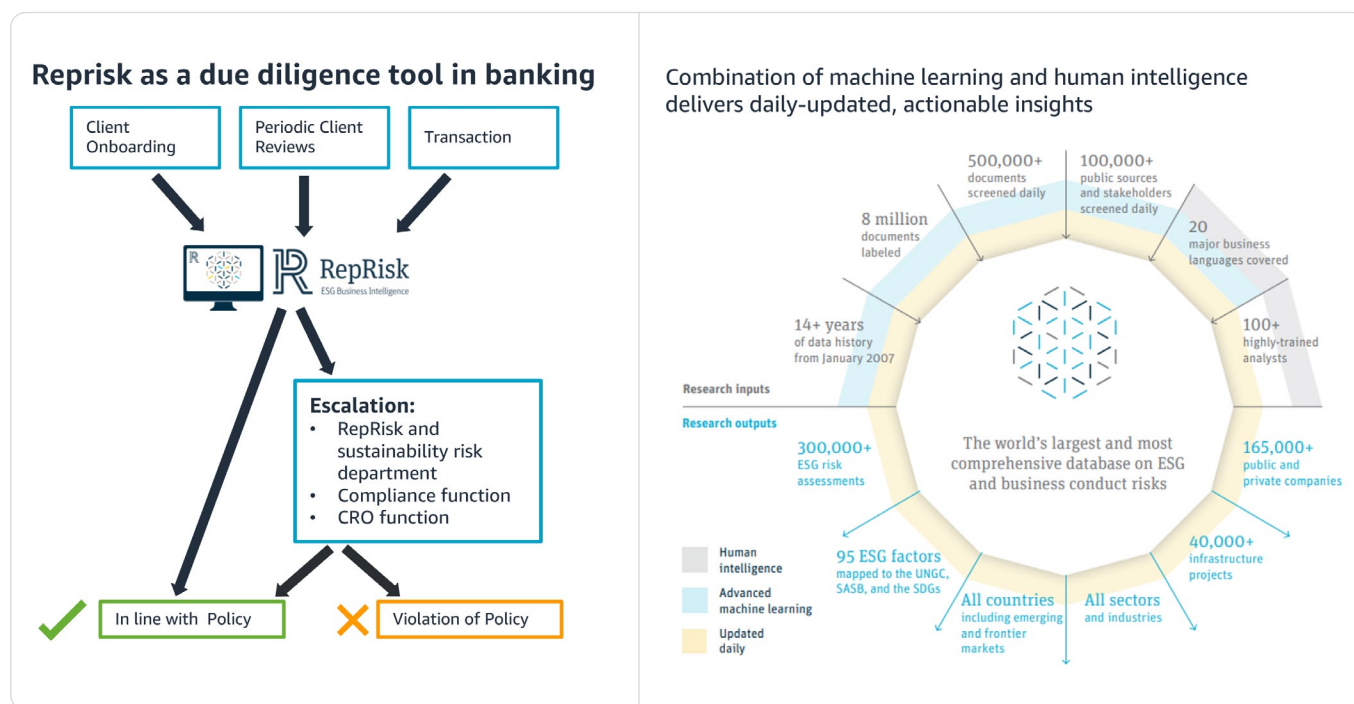
Businesses should work against corruption in all its forms, including extortion and bribery.

Environmental, social, and governance controversy data sends early warning signals to portfolio managers

Data type: ESG

Data provider: RepRisk

RepRisk provides qualitative research and quantitative data on environmental, social, and governance (ESG) risks to over 400 clients and 20 partners from around the world. Clients come to RepRisk for help in systematically identifying, assessing, and monitoring ESG risks in their own businesses. RepRisk helps investors do the same in other businesses. The analysis of ESG risks helps identify and assess issues that have financial, compliance, and reputational implications. In turn, financial institutions can use the data to make the best financing, investment, and business decisions. In those institutions, quant managers are challenged to incorporate ESG “big data” into their valuation models and statistics to proceed to search for alpha and manage beta. To help, RepRisk provides a rules-based, transparent methodology that helps ensure consistent data is generated at a point in time (not reverse-engineered). With daily updates and close to 15 years of data history, the company helps quant-focused investors and users who need stable, comparable data with granularity and unbroken time series. These capabilities enable some clients to use our data to backtest global, long and short equity, and bond strategies. Others use the data as a sustainable framework to short bonds and equities, and to monitor their portfolios or funds for early warning and exit signals. Increasingly, clients are able to incorporate updated ESG signals in their portfolio construction to extract alpha and manage risks. For example, the 2020 Bank of America Securities report featured RepRisk data that examined whether ESG controversy data could be an effective alpha signal for investors. In research spanning between 2007 and 2020, there was a strong correlation between RepRisk data and investment outperformance. This correlation reached across sectors, geographies, company sizes (large and small caps), and investment styles.



Default probabilities model enables forward-looking bond assessment

Data type: Financial and transactional data

Data provider: Kamakura

Kamakura Corporation is one of the world's most respected risk management information and software companies. Led by academicians, the company provides clients with unique insights based on ongoing research in a range of financial markets and credit risk analytical arenas. One of the challenges in risk assessment is to anticipate early warnings that indicate the advent of severe credit events, like looming bankruptcies. Kamakura provides its subscribers with early warning indicators that give support to traders and portfolio managers on both fixed income and equities by identifying corporate outliers. When a financial institution is challenged to choose the best value bonds for the market, they turn to Kamakura Default Probabilities (KDPs) to balance risk and spread. KDPs are forward-looking, and they incorporate a credit term structure from one month to 10 years. Investors can match the appropriate KDP with the remaining term on a bond. KDPs apply to any type of bond, regardless of whether the portfolio manager is focusing on investment grade, high yield, or emerging markets investments.

Risk assessment data gives portfolio managers early warning signs for potential defaults

Data type: Financial and transactional data

Data provider: Kamakura

Kamakura Corporation is one of the world's most respected risk management information and software companies. Led by academicians, the company provides clients with unique insights based on ongoing research in a range of financial markets and credit risk analytical arenas. One of the challenges in risk assessment is anticipating early warnings that indicate the advent of severe credit events, like looming bankruptcies. Kamakura provides its subscribers with early indicators that support traders and portfolio managers of both fixed income and equities by identifying corporate outliers. Kamakura Default Probabilities (KDPs) leverage nearly 30 years of modeling data to provide clients with the best coverage and quantitative performance across all credit-oriented vendors. When Hertz declared bankruptcy in May 2020, Kamakura provided an early warning three months prior through its Default Probability modeling. This warning came – more than a month before other credit models began to detect that the company was not accurately rated. Quantitative portfolio managers who paid close attention to those signals could have sold their long positions before significant price erosion occurred. Other asset managers use Kamakura's indications to manage tail-risk or for long-short strategies.

Mapping revenue pools for sustainable organizational growth

Data type: Reporting

Data provider: RFi Group

RFi Group provides financial service organizations with data-driven insights that combine global intelligence and local knowledge to drive valuable and actionable recommendations. An international bank wanted to move away from a siloed product focus to a customer-centric view to define and size future revenue pools more efficiently. The bank's ultimate goal was to create a data-led single view of the customer in order to align strategies and inform its product development, pipeline, and innovation within a three- to five-year timeframe. RFi Group created a model that segmented the market opportunity into key consumer cohorts and identified and predicted the current and future value of each of these cohorts. The result was a data-led, single-house view that helped the bank formulate their strategic plans, transforming internal capabilities and thinking. Based on RFi Group's oversight, the client gathered key insights, including usage, attitudes, behaviors, and key customer cohorts. The client tracked the performance of these measures as strategic plans were implemented.

Market penetration transforms how digital payments firm does business

Data type: Reporting

Data provider: RFi Group

RFi Group provides financial service organizations with data-driven insights that combine global intelligence and local knowledge to drive valuable and actionable recommendations. A global tech and digital payments company needed data-driven insights to identify the key pain points of their target customers, including customer appeal and behavior. The primary driver for this customer was to establish more successful outreach strategies and measures. The customer leveraged RFi Group's data and insights to better understand their end-customer desires, motivations, attitudes, and pain points. These valuable insights transformed how the organization drove its go-to-market planning, acquisition strategy, and product development roadmap. They created a revised strategy of tracking and assessing consumer behaviors. Using this strategy, this organization was also able to meet and address specific end-customer needs in a way not previously possible.

Quick data delivery drives strategic growth in financial services

Data type: Reporting

Data provider: RFI Group

RFI Group provides financial service organizations with data-driven insights that combine global intelligence and local knowledge to drive valuable and actionable recommendations. The company helps financial institutions better predict consumer behavior, sentiment, and identify outliers in a way that leads to impactful growth and expansion in the marketplace. RFI Group provides global and regional insights that pinpoint real-time consumer trends and predict future behaviors. The company's market-leading insights give organizations across the world the tools and strategies they need to deliver against high consumer expectations and increase customer satisfaction. RFI Group offers clients innovative solutions that enhance organizational performance with quick, timely, and accurate data and insights.

Financial media sentiment leads to excess returns for investors

Data type: Business insights, Environmental, social, and governance (ESG), Event detection, Oil and gas, Public sector data, Reviews and ratings

Data provider: StockSnips Inc.

StockSnips leverages an artificial intelligence (AI) platform to transform financial media articles into a quantified sentiment signal for equities. This sentiment is a proxy for investor sentiment that affects a company's stock price and is a lead indicator. Clients have generated excess returns by blending our signal as an alternative portfolio factor. Stock picking has become increasingly difficult in the last decade. This difficulty is due to the growth of passive funds in a bull market and exchange-traded funds (ETFs) costing less than traditional mutual funds. StockSnips offers various sentiment algorithmic driven trading portfolios that generate statistically significant alpha ("excess returns"). This data is derived by analyzing Securities and Exchange Commission (SEC) filings, earnings transcripts, media alerts, and analyst opinions from 20 reliable sources to provide a high signal-to-noise ratio. Alpha generated using the StockSnips News Sentiment signal has been validated by Cirrus Research. Cirrus offers sentiment signal portfolio models blended with other factors to generate excess returns over benchmarks.

The StockSnips signal outperformed the price momentum factor significantly for large-, mid-, and small-cap stocks. StockSnips uses a unique and proprietary memory-based sentiment attenuation model that considers recency, source, and frequency to handle news sentiment decay effects. This results in substantive sentiment signals with proven construct validity (high signal-to-noise ratio) and reliability. Smart alpha portfolio models that leverage the StockSnips proprietary news media sentiment signals have generated excess returns for clients. These returns occur not only in backtests but also in live trading scenarios.

AI Derived Portfolio Factor For Alpha Generation and Risk Management

Which portfolio factors are most common in the industry?

Multi-factor strategies reduce systematic risk

What is StockSnips Financial News Sentiment?

Our proprietary AI & ML models transform thousands of articles daily into a reliable **Quantified Sentiment** signal

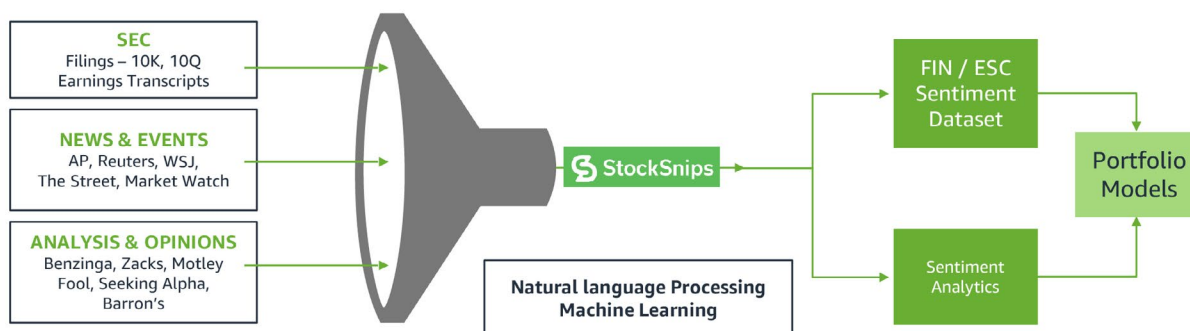
What is ESG News Sentiment?

Trained algorithms filter diverse news and filings, determine if positive or negative, attribute to correct firm, and sort by topic e.g. Climate, Diversity, Privacy or Labor Practices

StockSnips News Sentiment is a proxy for measuring Investor Sentiment for a Company



Proven Platform for News Sentiment Analysis



Our **Financial** and **ESG News Sentiment** Dataset is generated daily from reliable news sources

Investor sentiment offers key insights into portfolio risk

- Data type:** Business insights, Environmental, social, and governance (ESG), Event detection, Oil and gas, Public sector data, Reviews and ratings
- Data provider:** StockSnips Inc.

StockSnips leverages an artificial intelligence (AI) platform to transform financial media articles into a quantified sentiment signal for equities. This sentiment is a proxy for investor sentiment that affects a company's stock price and is a lead indicator. Clients have generated excess returns by blending our signal as an alternative portfolio factor. Financial services organizations are facing the growing realization that fundamental factors like growth, value, and quality alone are not adequate to manage portfolio risk. This is especially true as momentum and investor sentiment drive stock prices in the short term. StockSnips News Media Sentiment is a substantive proxy for measuring investor sentiment and is a lead indicator of price behavior. Our news media sentiment signal has been incorporated into a dashboard that is used by brokers, dealers, and portfolio managers to manage risk. Retail and institutional investor sentiment is a major driver of financial markets. Organizations need a real-time measure of change in sentiment at the ticker, sector, and market level. Having these inputs in place helps to alert portfolio managers to risks due to sector rotation and regime changes. The inputs cover growth to value and large- to small-cap.

CMU paper finds Bi-factor Sentiment Model Optimizes Alpha Creation Across Asset Sizes

Model	Large Cap	Small /Mid Cap
Sentiment Only	-0.39%	15.83%
Sentiment Momentum Only	6.16%	-7.39%
Bi-Factor Model	8.02%	15.81%

Investor Herding may explain greater performance of Sentiment Momentum within large caps

Cirrus Testimonial: News Sentiment Outperformed Traditional Factors like ER and RS

Cirrus Research has chosen News Sentiment as a portfolio factor for their Growth Fund

Cirrus Research Portfolio Has Outperformed Market Since Inception

The screenshot shows a detailed financial analysis interface. The top navigation bar includes View, Actions, Settings, Trade Simulation, and Portfolio & Risk Analytics. The main view displays a performance chart for 'CRSS AG PORTFOLIO' (ID: 15.5314) compared to the 'S&P500' (ID: 15.6252) from January to November. The chart shows the portfolio's performance relative to the market index, with a green area representing the performance difference. The interface also includes tabs for Characteristics, Holdings, Tracking Error/Volatility, VaR, Scenarios, Performance, Attribution, and Intraday.

Data enrichment leads to breakthrough consumer insights

Data type: Retail data, Location and marketing data, Financial data

Data provider: Windfall Data

Windfall Data provides contextual analysis to data-driven organizations, putting customers' databases in a contextual framework so they can make critical strategic decisions. Powered by artificial intelligence (AI), Windfall Data's platform provides a 360-degree database view to accelerate workflows and drive performance. One of the challenges that many organizations face is data accuracy, with inaccuracies often stemming from fuzzy matching and stale, inaccurate data. These factors, in turn, lead to wasted time, money, and resources. Windfall Data uses deterministic matching to link constantly refreshed, proven proprietary wealth data, which enables organizations to meet their marketing and revenue goals. Windfall Data also employs machine learning to enable organizations to leverage bespoke predictive models to better score leads and retarget high-value prospects. Windfall Data uses native customer relationship management (CRM) integrations or programmatic batch processing. Through these tools, Windfall Data appends organizations' databases with precise net worth estimates and over 170 attributes to power customer insights and accelerate deal cycles. What's more, machine learning helps Windfall Data become the data layer for net-new acquisitions. This data targets the right audience across digital, social, or direct mail to help organizations achieve a higher return on investment (ROI).

Windfall Data offers precise net worth estimates at the household level, using proprietary algorithms to make accurate projections. This underlying dataset is refreshed weekly to capture the latest information for Windfall Data's people graph. By enriching customers' databases, Windfall Data enables organizations to better understand their target audience and prioritize leads. As a result of its innovative approach to data aggregation, many Windfall Data customers have surpassed their corporate goals. For example, one online retailer saw over a 110 percent increase in sign-ups, and a private airline achieved a 2X conversion-rate lift. An investment firm gained a 4.8X return on spending.

Strong predictive models enable businesses to identify first-rate targets

Data type: Retail data, Location and marketing data, Financial data

Data provider: Windfall Data

Windfall Data provides contextual analysis to data-driven organizations, putting customers' databases in a contextual framework so they can make critical strategic decisions. Powered by artificial intelligence (AI), Windfall Data's platform provides a 360-degree database view to accelerate workflows and drive performance. One of the challenges that many organizations face today is data accuracy derived from predictive models. However, predictive scoring is effective only when clean first-party data is properly integrated with a rich set of third-party data and insights. Windfall Data uses deterministic matching to link constantly refreshed, proven proprietary wealth data, which enables organizations to meet their marketing and revenue goals. Windfall Data also employs machine

learning to enable organizations to leverage bespoke predictive models to better score leads and retarget high-value prospects. Windfall Data uses native customer relationship management (CRM) integrations or programmatic batch processing. Through these tools, Windfall Data appends organizations' databases with precise net worth estimates and over 170 attributes to power customer insights and accelerate deal cycles. What's more, machine learning helps Windfall Data become the data layer for net-new acquisitions. This data targets the right audience across digital, social, or direct mail to help organizations achieve a higher return on investment (ROI). When it functions as features driving internal model performance, this data enables organizations to augment their internal capabilities with bespoke model support.

Windfall Data's AI solutions enable organizations to determine their ideal customer profile, score incoming leads, and create hypertargeted audiences for acquisition. These models are customizable for each organization's objective. This process, in turn, becomes an iterative loop; as organizations acquire new customers, Windfall Data's models learn where the organization is having success. Then, they automatically identify targets. Through Windfall Data's innovative approach to data aggregation, many of their customers have surpassed their corporate goals. For example, an online retailer saw over a 110 percent increase in sign-ups, and a private airline achieved a 2X conversion rate lift. An investment firm gained a 4.8X return on spending.

Reduced digital audience waste leads to increased return on investment

Data type: Retail data, Location and marketing data, Financial data

Data provider: Windfall Data

Windfall Data provides contextual analysis to data-driven organizations, putting customers' databases in a contextual framework so they can make critical strategic decisions. Powered by artificial intelligence (AI), Windfall Data's platform provides a 360-degree database view to accelerate workflows and drive performance. One of the challenges that many organizations face today is digital audience waste. Imprecise audience targeting across digital, social, and direct platforms causes significant waste in media spend. Windfall Data uses deterministic matching to link constantly refreshed, proven proprietary wealth data, which enables organizations to meet their marketing and revenue goals. Windfall Data also employs machine learning to enable organizations to leverage bespoke predictive models to better score leads and retarget high-value prospects. Windfall Data uses native customer relationship management (CRM) integrations or programmatic batch processing. Through these tools, Windfall Data appends organizations' databases with precise net worth estimates and over 170 attributes to power customer insights and accelerate deal cycles.

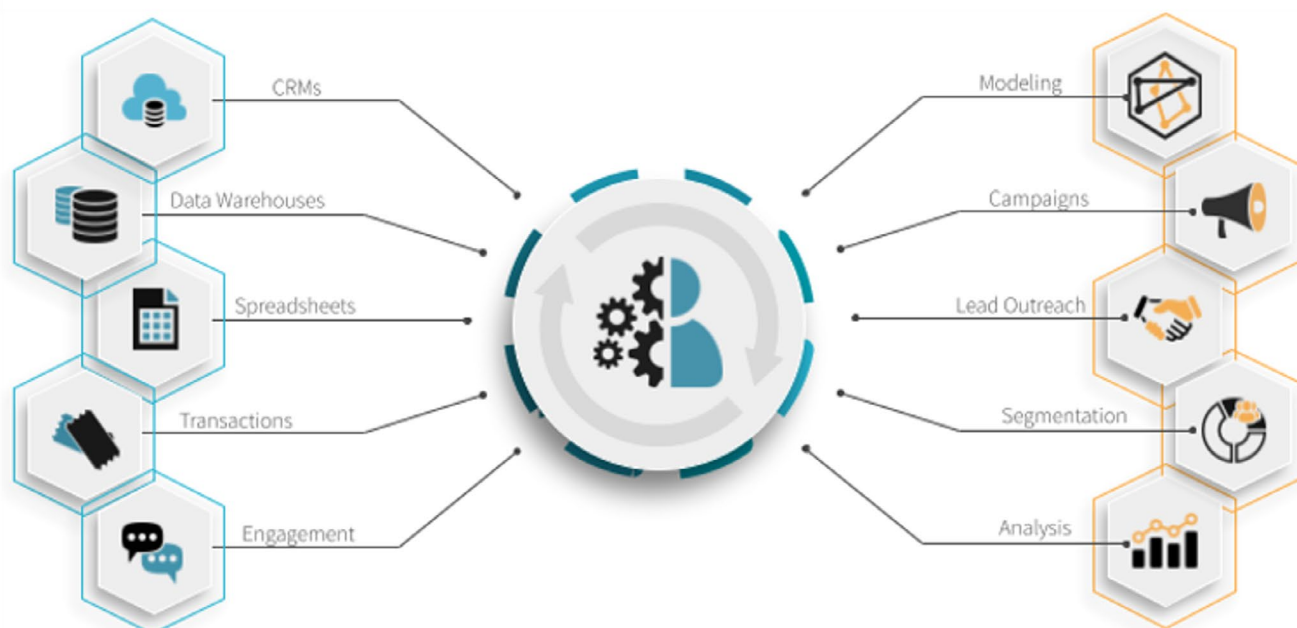
Windfall Data serves as the data layer for net-new acquisition. This process helps customers engage with the right audiences at the right time to improve return on investment (ROI) throughout the marketing process. Windfall Data's custom audiences, generated by its machine learning solutions, enable organizations to acquire new, qualified customers across direct mail, social media, and digital channels. What's more, through its innovative approach to data aggregation, many Windfall Data customers have surpassed their corporate goals. For example, an online retailer saw over a 110 percent increase in sign-ups, and a private airline achieved a 2X conversion rate lift. An investment firm gained a 4.8X return on spending.

Building a Robust Dataset

1P DATA SOURCES

UNIFY & ENRICH

DRIVE OUTCOMES



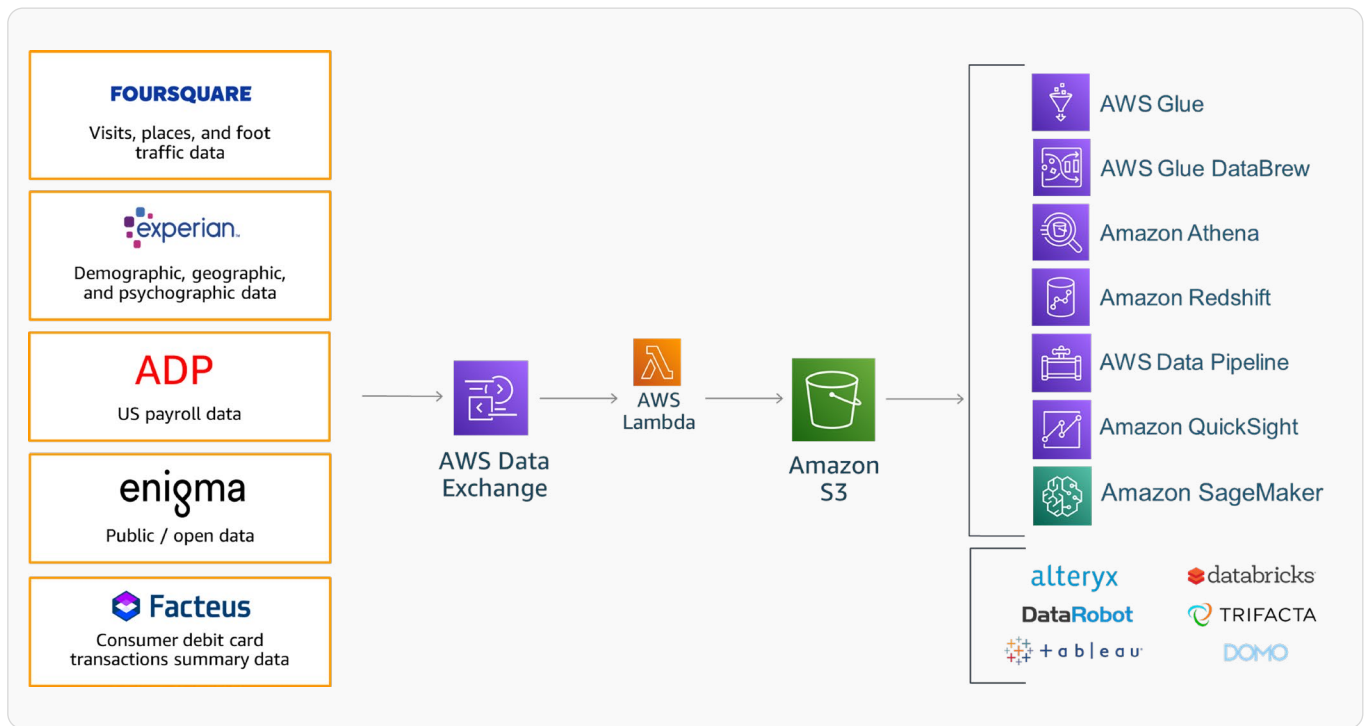
Data should be regularly refreshed to make sure you have the most up-to-date information to take action.

Next-day transaction data drives faster insights into market competitors

Data type: Financial and transactional

Data provider: Facteus

Facteus has developed a patent-pending synthetic data process that safely transforms raw financial transaction data from legacy systems to provide insights without compromising data privacy. The company safely transforms data from thousands of financial institutions and commercial programs along with common datasets from legacy systems. This data is suitable for machine learning, artificial intelligence (AI), and data monetization, and it can be used to support other customer strategies. For customers who are looking for support in defining and analyzing market competition, Facteus provides detailed transaction information at the company level. This information includes historic and ongoing transaction data that can be delivered as fast as one day following the transaction date. Data within this suite is available with multi-year history and delivered in a daily stream or at a merchant-summary level. Leveraging these datasets enables customers to analyze both wallet and market share, including trends, cross-shopping patterns, and shifts from one merchant to another. Customers gain in-depth, real-time views of merchant competition that can result in game-changing opportunities to make smarter business decisions.



Credit and Lending Data

More than ever, lending and payments companies rely on a range of data to help make quick, informed decisions. Examples from this range include consumer credit checks, payment history and credit card transaction data. Data helps define risk around credit decisions, identify new consumers, and deliver on rapidly changing expectations. With analytics derived from emerging technologies like machine learning and artificial intelligence (AI), lenders can achieve insights that help them to create industry-leading data monetization opportunities.



Mortgage lenders leverage key indicators to support thinning refinance market

Data type: Financial data

Data provider: TransUnion

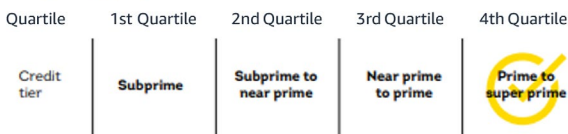
TransUnion is a global information and insights company that makes trust possible between consumers and businesses. It leverages an accurate and comprehensive identity foundation and people-based technology to move businesses forward and enable confident, addressable, and personalized consumer experiences. The company prides itself on its depth of data, machine learning technology, and market expertise. These features allow it to deliver insights and solutions with speed, ease, and transparency for marketers and the companies that service them. Its customers include mortgage lenders seeking to capture homeowners looking to refinance in a market that is likely to retract.³ TransUnion supports lenders in finding that market with data on 106 million properties, providing identifiers like length of ownership, home value, and in-market buyer propensity. As a result, lenders can better target consumers most likely to be in the market for a new mortgage or home-equity loan product.³

³ Agarwal, S., Chomsisengphet, S., Kiefer, H., Kiefer, L. C., and Medina, P. C. (2020). Inequality During the COVID-19 Pandemic: The Case of Savings from Mortgage Refinancing.

Young Consumers In-market for a Mortgage



Average Aggregated Credit Tiers



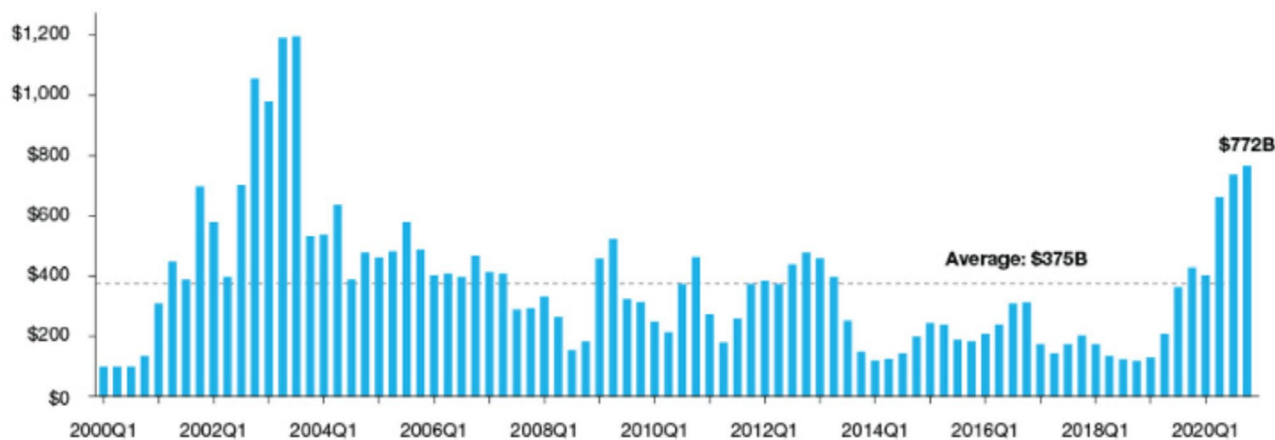
Year Built



Home Equity Loan In-market Propensity



U.S. single-family mortgage refinance originations (2020 U.S. dollars, billions)



Source: Freddie Mac Economic and Housing Research Total Market Estimates, Originations deflated by U.S. Bureau of Labor Statistics CPI-U All Items

Deep, small-business insights enable business-to-business marketers to refine campaign goals

Data type: Financial data

Data provider: TransUnion

TransUnion is a global information and insights company that makes trust possible between consumers and businesses. It leverages an accurate and comprehensive identity foundation and people-based technology to move businesses forward, enabling confident, addressable, and personalized consumer experiences. The company prides itself on its depth of data, machine learning technology, and market expertise. These features allow the company to deliver insights and solutions with speed, ease, and transparency for marketers and the companies that service them. While small business makes up a critical part of many business-to-business (B2B) companies' customer portfolios, it is a market that can be challenging to target at scale. TransUnion provides a range of data to help

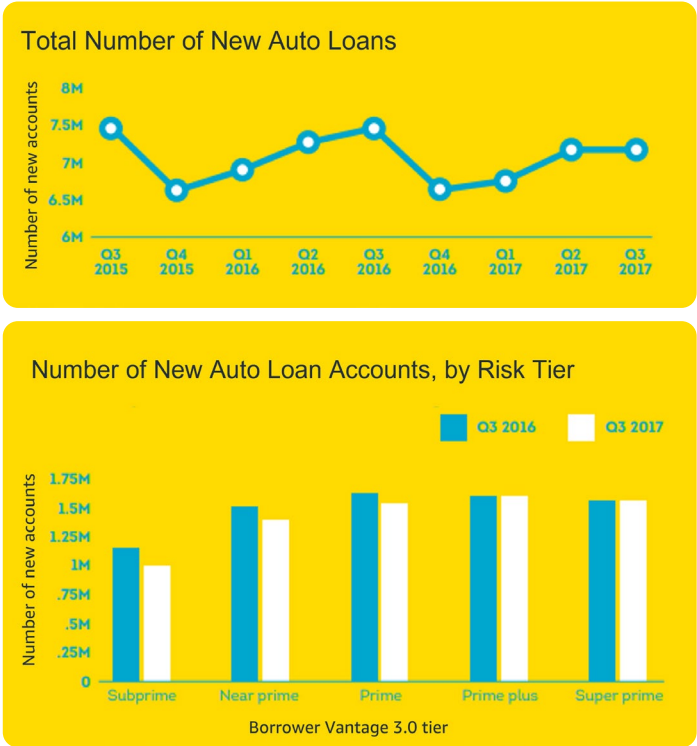
markets identify, segment, and reach the right small business audience. Its marketing data is compiled from private and publicly available record sources, self-reported data, purchase data, subscriptions, census data, and more. Data around size, estimated income, demographics, and borrowing provides customers with a clearer picture of which small business owners are likely to meet a business's financial requirements. In addition, such data enables customers to focus on the most effective segments and messages to drive their marketing campaigns.



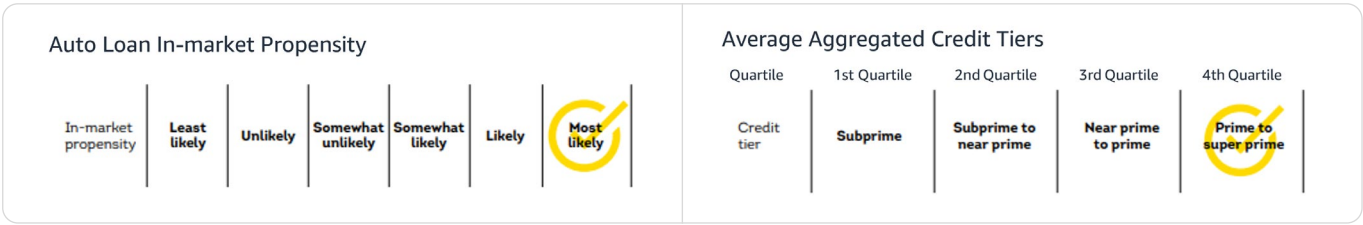
Identifying low-risk near-term buyers helps auto lenders focus ad spend

Data type: Financial data
Data provider: TransUnion

TransUnion is a global information and insights company that makes trust possible between consumers and businesses. It leverages an accurate and comprehensive identity foundation and people-based technology to move businesses forward and enables confident, addressable, and personalized consumer experiences. The company prides itself on its depth of data, machine learning technology, and market expertise. These features allow the company to deliver insights and solutions with speed, ease, and transparency for marketers and the companies that service them. The automobile financing market has been stabilizing after years of rapid growth, due in part to responsive underwriting. While originations continue to fall, delinquencies remain steady, challenging lenders to lower fault ratios by implementing better acquisition strategies. TransUnion's database includes 98 percent of all consumers in the United States – with more



than 3,000 attributes per file. Those attributes include propensity data that identifies low-risk buyers on the cusp of purchase. Lenders can then reach those audiences at the right time to buy. As a result, lenders can focus ad spend and increase media efficiency on less risky buyers.⁴



⁴ TransUnion Financial Services Industry Insight Report Q4, 2017

Proprietary wealth data helps business target premium products and services

- Data type:** Consumer wealth data
- Data provider:** Equifax, Inc.

Equifax, Inc. is an Atlanta-based solution provider with strong outsourced relationships in businesses, government, and consumers. It provides commercial information such as credit scoring, modeling, portfolio analytics, and fraud detection, along with mortgage, financial marketing, and identity management services. Customers faced challenges in identifying consumers who fit into the appropriate market for premium products. To identify the ideal customer type for that purpose, Equifax delivers Income 360. Income 360 provides proprietary wealth data (dividends, capital gains) and IRS and household data (wages, retirement income, length of residence). Using Income 360 data, customers can better understand a household’s estimated total income. As a result, Equifax can deliver data that helps customers identify and tailor marketing efforts to the households best matched for premium products and services.

How revenue data drives key marketing strategies for small businesses

- Data type:** Marketing
- Data provider:** Equifax, Inc.

Equifax, Inc. is an Atlanta-based solution provider with strong outsourced relationships in businesses, government, and consumers. It provides commercial information such as credit scoring, modeling, portfolio analytics, and fraud detection, along with mortgage, financial marketing, and identity management services. Equifax saw an opportunity for providing market target lists for small businesses. To address this need, Equifax devised a business-to-business

(B2B) solution, B2B Connect. Through this proprietary marketing database, Equifax provides firmographic data on 28 million US businesses by industry and size (revenue). This comprises a list of businesses with revenue between \$1 Million and \$2.5 Million, including business name, address, number of employees, industry, and more. Equifax's ability to deliver firmographic information on businesses by revenue helps small businesses enhance their marketing efforts and reach strategic targets. It is not possible to generate this information using traditional approaches.

Small businesses can now gain key insights with market target lists by industry

Data type: Marketing

Data provider: Equifax, Inc.

Equifax, Inc. is an Atlanta-based solution provider with strong outsourced relationships in businesses, government, and consumers. It provides commercial information such as credit scoring, modeling, portfolio analytics, and fraud detection, along with mortgage, financial marketing, and identity management services. Equifax saw an opportunity for providing market target lists for businesses broken out by industry. To address this need, Equifax devised a business-to-business (B2B) solution, B2B Connect. Through this proprietary marketing database, Equifax provides firmographic data on 28 million US businesses by industry. This comprises a list of businesses by two-digit North American Industry Classification System (NAICS) sector code, including business name, address, employee count, revenue, and six-digit NAICS code. Equifax's ability to deliver firmographic information on businesses based on industry helps small businesses enhance their marketing efforts and reach strategic targets. It is not possible to generate this information using traditional approaches.

Residential property data helps businesses expand marketing opportunities

Data type: Marketing

Data provider: Equifax, Inc.

Equifax, Inc. is an Atlanta-based solution provider with strong outsourced relationships in businesses, government, and consumers. It provides commercial information such as credit scoring, modeling, portfolio analytics, and fraud detection, along with mortgage, financial marketing, and identity management services. Equifax needed to provide business owners with insights on which households to sell products to. To address this need, Equifax devised National Property Insights. This is a comprehensive look at public record data on residential properties across the United States. This data includes information ownership, property values and characteristics, sales date and prices, mortgage liens, equity positions, and active listings. Property Insights also includes unique data elements such as interest rate, amortized loan balances, and estimated current loan-to-value (LTV) and combined loan-to-value (CLTV) balances. Equifax's ability to provide a comprehensive look at residential property data across the United States helps businesses enhance their marketing efforts and reach strategic targets not otherwise possible.

Homeowner data opens door to key consumer insights

Data type: Marketing

Data provider: Equifax, Inc.

Equifax, Inc. is an Atlanta-based solution provider with strong outsourced relationships in businesses, government, and consumers. It provides commercial information such as credit scoring, modeling, portfolio analytics, and fraud detection, along with mortgage, financial marketing, and identity management services. Equifax needed to teach business owners how to target customers who have equity or mortgage activity, or who have no mortgages. As a result, Equifax devised Equifax Home Equity and Mortgage Data. This is a comprehensive look at equity status and current estimated mortgage lien data on residential properties across the United States. This data includes property type, last sales data and price, interest rate, loan type and amount, origination date, lender name, and estimated current loan-to-value (LTV) and combined loan-to-value (CLTV) balances. Equifax is able to provide equity status and current estimated mortgage lien data on residential properties across the United States. This ability helps businesses enhance their marketing efforts and reach strategic targets not otherwise possible. In addition, optional searches are available for larger geographies, such as state, county, and Metropolitan Statistical Area (MSA), and update frequencies, including monthly, quarterly, and annually.

Home value trends and forecasts help predict consumer risk

Data type: Marketing

Data provider: Equifax, Inc.

Equifax, Inc. is an Atlanta-based solution provider with strong outsourced relationships in businesses, government, and consumers. It provides commercial information such as credit scoring, modeling, portfolio analytics, and fraud detection, along with mortgage, financial marketing, and identity management services. Equifax saw an opportunity for helping financial and credit lending institutions determine consumer credit risk based on forecasts and past price performance. As a result, Equifax devised Equifax Home Value Trends and Forecasts. This is a comprehensive look at current property values and home price trends and forecasts for residential properties across the United States. This data includes property type, property values utilizing Automated Valuation Models, and media sales prices by ZIP code. The data also provides historical price changes by zip code for the previous eight quarters along with the forecasted price changes by ZIP code for the upcoming four quarters. Equifax's ability to provide home value trends and forecasts on residential homes across the United States helps financial and credit lending institutions gain a better understanding of overall consumer risk. These insights bolster their marketing efforts and ability to reach strategic targets not otherwise possible. In addition, optional searches are available for larger geographies, such as state, county, and Metropolitan Statistical Area (MSA), and update frequencies, including monthly, quarterly, and annually.

Proprietary housing data helps business target premium products and services

Data type: Marketing

Data provider: Equifax, Inc.

Equifax, Inc. is an Atlanta-based solution provider with strong outsourced relationships in businesses, government, and consumers. It provides commercial information such as credit scoring, modeling, portfolio analytics, and fraud detection, along with mortgage, financial marketing, and identity management services. Equifax saw an opportunity for helping businesses cross-sell and up-sell customer households that are most relevant for premium products and service offers. As a result, Equifax devised Equifax Housing Characteristics. This is a comprehensive look at housing characteristics from county assessor offices on residential (up to four units) properties across the United States. This data includes owner-occupancy flags, property type, bedroom and bathroom counts, home size and lot square footage, and year of construction. Equifax's ability to provide housing characteristics data on residential homes across the United States helps businesses match consumers with premium products and service offerings. These insights bolster their marketing efforts and ability to reach strategic targets not otherwise possible.

Credit card payments trends data helps predict overall consumer risk exposure

Data type: Marketing, Analytics

Data provider: Equifax, Inc.

Equifax, Inc. is an Atlanta-based solution provider with strong outsourced relationships in businesses, government, and consumers. It provides commercial information such as credit scoring, modeling, portfolio analytics, and fraud detection, along with mortgage, financial marketing, and identity management services. Equifax saw an opportunity for helping financial and credit lending institutions forecast consumer risk exposure based on credit payment trends. As a result, Equifax devised Equifax Installments and Revolving Credit Data, which offers a comprehensive look at credit payment trends across the United States. This is an anonymized dataset that is sourced from Equifax's Consumer Credit Database highlighting consumer installment and revolving trades. These transactions are typically derived from loans opened with a sales financing company or a personal financing company. Equifax is able to understand accounts and balance changes, delinquency trends, and utilization and write-off rates. This ability helps financial and credit lending institutions match consumers with premium products and service offerings.

Consumer product matching gets a boost from mortgage trends data

Data type: Marketing, Analytics

Data provider: Equifax, Inc.

Equifax, Inc. is an Atlanta-based solution provider with strong outsourced relationships in businesses, government, and consumers. It provides commercial information such as credit scoring, modeling, portfolio analytics, and fraud detection, along with mortgage, financial marketing, and identity management services. Equifax saw an opportunity for helping businesses analyze mortgage trends data among US consumers in order to offer them premium products and services. As a result, Equifax devised Equifax Consumer Residential Credit Data. This is an anonymized dataset that is sourced from Equifax's Consumer Credit Database highlighting consumer installment and revolving trades. These transactions are typically derived from loans opened with a sales financing company or a personal financing company. Equifax is able to provide a comprehensive look at mortgage trends across the United States. This ability helps businesses match consumers with premium products and service offerings in ways not previously possible.

Consumer auto lending data drives new premium product and service offerings

Data type: Marketing, Analytics

Data provider: Equifax, Inc

Equifax, Inc. is an Atlanta-based solution provider with strong outsourced relationships in businesses, government, and consumers. It provides commercial information such as credit scoring, modeling, portfolio analytics, and fraud detection, along with mortgage, financial marketing, and identity management services. Equifax saw an opportunity for helping businesses understand trends in consumer auto lending in order to offer premium products and services. As a result, Equifax devised Equifax Consumer Automobile Credit Data, which offers a comprehensive look at consumer auto lending trends across the United States. This is an anonymized dataset that is sourced from Equifax's Consumer Credit Database highlighting consumer installment and revolving trades. These transactions are typically derived from loans opened with a sales financing company or a personal financing company. Equifax's ability to provide a comprehensive look at consumer automobile credit data helps businesses match these buyers with premium products and service offerings.

Insights across credit lifecycle enhance targeting and account management

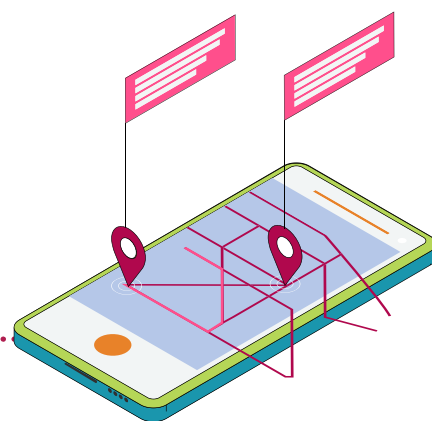
Data type: Economic data

Data provider: Equifax, Inc.

Equifax, Inc. is an Atlanta-based solution provider with strong outsourced relationships in businesses, government, and consumers. It provides commercial information such as credit scoring, modeling, portfolio analytics, and fraud detection, along with mortgage, financial marketing, and identity management services. Its customers seek ways to boost marketing efforts by improving messaging and better aligning credit offers with their own ideal customers based on estimated credit usage and needs. Equifax delivers CreditStyles Pro to provide additional measures, scores, and credit variables to help. Information such as risk scores, intent indicators, and aggregated FICO® scores down to the ZIP+4 level gives customers critical insights on credit usage. These insights are based on availability, need, and usage throughout the customer lifecycle. Through CreditStyles Pro, Equifax provides customers with the analytical muscle they need to optimize prospecting and targeting, and to improve account management.

Location and Geographic Information System (GIS) Data

From smartphones to connected cars, location data is changing the way we live, work, and travel. Geographic information system (GIS) spatial data can drive more efficient delivery routes, better behavioral marketing, robust asset tracking, and more. As a result, location data is driving increased productivity, new revenue streams, and enhanced human experiences.



How to gain competitive advantage with points of interest data

Data type: Mobile app and software development kit (SDK) derived mobile data

Data provider: Kochava

Kochava Collective is the world's largest mobile data marketplace and targeting platform consisting of SDK-derived data on over ten billion unique devices globally. A quick-service restaurant (QSR) wanted to create awareness around a new product launch and capture new, engaged spenders away from their primary competitor. Using Kochava Collective Points of Interest (POI) visitation data, the QSR chain was able to identify customers with visits to the locations of a particular competitor. To increase awareness surrounding a product launch, their marketing team curated a competitive strategy to pull customers from those locations to their product launch storefronts. After the product launch, the QSR discovered an 18 percent increase in visitors from a direct competitor within a two-week period.

Kochava Collective Data Marketplace



Kochava Collective Audience Enrichment: <https://youtu.be/5LB25MSopt4>



KOCHAVA COLLECTIVE

Explore the Kochava Collective, an independent data marketplace to activate and expand collaborative audience data through data enrichment and competitor audience analysis, while also providing a channel for data monetization.

OVER 8 BILLION
UNIQUE DEVICES GLOBALLY

MILLIONS OF
MONTHLY ACTIVE USERS (MAU)

The Kochava Collective is the largest independent mobile data marketplace by volume, with rich geo data spanning billions of devices globally. Premium data feeds deliver raw and mapped Kochava Collective data (over 94B geo transactions per month from 216 non-European Union countries, 125 Million of monthly active users (MAU) or 35 Million daily active users (DAU) in the United States (US), more than 91 average daily transactions per US device), which can be utilized within your own platform.

Precision Geo (1-sheet): <https://kochava.docsend.com/view/sbd7ea9n5idhptyg>



Geolocation data provides critical insights into brick-and-mortar performance indicators

Data type: Geodemographic postcode segmentation of the UK population

Data provider: CACI

CACI is a UK-based company that provides a range of data products and solutions around customer data. It provides insights that help clients define and deliver appropriate targeting strategies across all consumer-facing sectors. CACI can provide insights to organizations trying to understand their existing customers or catchment areas, develop propositions, plan investments, or allocate resources effectively. Demographic insights enable businesses to make better decisions about their customers and the market, including:

- Insights into customers and why they behave the way they do across platforms
- Development of customer segments for campaign and journey creation
- Understanding of the market to help develop propositions and accurately predict take-up
- Understanding of the types of customers in your catchment areas to improve network efficiency, range planning, and media planning

For businesses with a brick-and-mortar location, geolocated insights are critical for understanding how individual stores are performing. With aggregated Acorn data to profile the geography around a store or branch, a business can identify the predominant demographics of an area to determine its role in driving behavior. For example, a bank branch located in an area with many younger workers might offer different functions than a branch in an area serving pensioners. Businesses can use Acorn demographic groups such as City Sophisticates and Career Climbers to understand the needs of potential customers in a given area. With this data and Amazon QuickSight, businesses can find patterns that help them to make better business decisions. The combination of tools can help businesses find appropriate locations to expand operations, plan media and marketing campaigns, and make excellent merchandising decisions.

Key locations for City Sophisticates



CACI

Calibrated scorecard approach identifies markets for pub chain expansion plan

Data type: Geospatial data

Data provider: Experian

Experian offers a pioneering combination of data, technology, and advanced analytics to help businesses unlock insights and take decisive action. It provides tools that help companies succeed in planning effective marketing campaigns, making responsible credit decisions, and creating a business optimization strategy. Those challenges are significant on their own, but more so in international markets that lack consistency in socio-demographic information, a reality that further complicates decision-making. To help, Experian offers WorldView, the first solution to deliver a socio-demographic dataset at a grid level of 250m × 250m consistently across multiple countries. It offers immediate access to consistent, consolidated, granular data concerning population, age, gender, income, and expenditure for billions of people worldwide.

A major pub chain was looking to expand their estate and needed to prioritize prospective locations, understanding their potential in the context of their current network. The chain used WorldView data to devise a scorecard using a variety of market data variables for each prospective location. These included points of interest (POI) data on pub locations, customer profiles to identify target audiences, and the proprietary WorldView socio-demographic data. Every prospective location was scored using a performance model calibrated against the client's existing network. Reports were developed to break down the key factors for each location. The chain was able to produce a series of reports and maps that enabled them to identify clear growth opportunities. In addition, the analysis provided a recommendation for specific pub formats in locations to increase these opportunities. The analysis also provided the ability to understand where they had gaps in the market, both geographically and by brand. As a result, Experian's solution helped the client to assess and make effective decisions about international growth strategy, from location planning to consumer marketing activities.

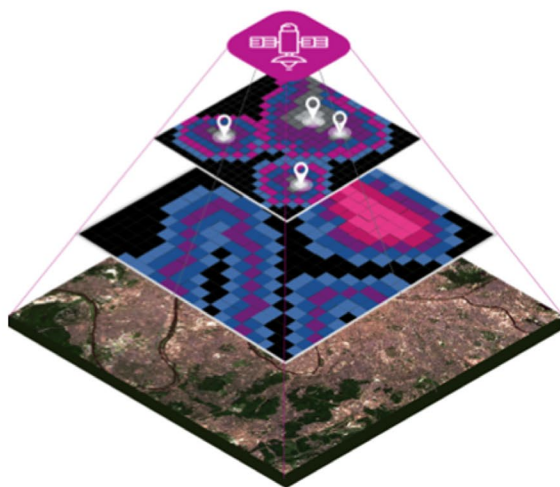
WorldView

Experian **WorldView** is made up of 250m² grids that cover the globe providing immediate access to accurate information on: **Age, Gender, Disposal income, Consumer expenditure and WorldView Segments.**

Utilizing the latest satellite remote Sensing technology, global data and machine learning algorithms, Experian have created a consolidated and consistent global database, which helps you to:

- Benchmark performance across all locations.
- Analyze catchments at the most granular level.
- Understand customers consistently and visualize their data.
- Optimize product distribution.
- Identify areas with untapped demand.

All on a consolidated and consistent scale.



Real-time traffic data from connected vehicles leads to safer roads

Data type: Traffic intelligence
Data provider: Wejo

Wejo partners with global auto manufacturers to create mobility intelligence that revolutionizes the way we live, work, and travel. The company helps public and private sector organizations create better experiences and more livable places for the people they serve. This is accomplished by reducing preventable road incidents, easing traffic and congestion, and making mobility smarter and more sustainable for all. One of the major challenges organizations face is gathering accurate traffic intelligence. Understanding traffic trends can be complicated, with disparate data sources that often require specialty hardware, dedicated analytical teams, and, in some cases, manual data collection methods. Wejo's Traffic Intelligence is the only traffic report powered by data from connected cars. Wejo uses aggregated movement data from millions of connected vehicles. It translates source data into insights about directional traffic volumes, traffic flows, average speeds, hard braking, hard acceleration, and congestion. Traffic Intelligence is available daily in a simple and readable format that can easily integrate into any business intelligence (BI) and geographic information system (GIS) tool.

Wejo provides accurate mobility data insights from millions of vehicles. It also gives users deep insights into driver behavior at any time and any location. Wejo Traffic Intelligence data enables businesses to gain accurate and valuable data. This data can help recommend safety improvements to road networks, help ease traffic and congestion, and improve air quality.

ACTIVE VEHICLES 11.3 MILLION	VEHICLE SUPPLY BASE 50 MILLION+	MILES CURATED 391 BILLION	DATA POINTS 10.1 TRILLION	JOURNEYS 48.8 BILLION
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Travel insights speed recovery and set up businesses for long-term success

Data type: Travel data
Data provider: Skyscanner

Skyscanner began in 2003 as a simple flight search engine and has grown into a global leader in travel. Skyscanner's Travel Insight is a leading data product that provides exclusive access to the world's largest source of travelers' search and booking demand data. It enables organizations to gain powerful insights into travel habits, industry performance, and future trends. When the global pandemic hit, the travel industry shut down almost overnight. This unprecedented event highlighted the importance of business foresight and of knowing what's around the corner. As the travel industry recovers, organizations realize that the ability to spot and take advantage of new market opportunities is essential. Travel Insight collects data from the flight search and booking demand data from 100 million peak travelers a month. It reveals the world's travel habits, behaviors, and future trends. Travel Insight

Vision is a highly visual product designed for travel trend analysis, route development, and route enhancement. This product gives instant, on-demand access to the world's largest source of traveler search and booking demand data. This all happens via a personal online portal to help businesses power their COVID-19 recoveries and find new opportunities to win in their markets.

By breaking down, analyzing, and visualizing travel data, Travel Insight helps organizations make smarter, faster, and more profitable decisions. Specialized data engineering or processing knowledge is not required. As the world emerges from COVID-19, Travel Insight enables businesses to track markets, monitor traveler sentiment, and understand their markets. It offers essential travel industry performance, prices, and demand.

Real-time travel data fuels a leading airport operator's post-COVID recovery

Data type: Travel data

Data provider: Skyscanner

Skyscanner began in 2003 as a simple flight search engine and has grown into a global leader in travel. Skyscanner's Travel Insight is a leading data product that provides exclusive access to the world's largest source of traveler search and booking demand data. It enables organizations to gain powerful insights into travel habits, industry performance, and future trends. Aena is one of the world's leading airport operators by passenger numbers. It manages 46 airports in Spain and co-manages a further 23 in Latin America and Europe. Before working with Skyscanner, Aena was using several data providers simultaneously, as well as airport slot data, tourist board data, and its own internal statistics and surveys. But the company was experiencing shortcomings: the data was historical, backward-looking, and split into annual sets.

Travel Insight data provided something Aena had rarely had before – forward-looking data delivered daily, based on the search and booking demand of the world's travelers. Before COVID-19, this data included 100 million unique users a month from almost every market in the world, with especially high penetration in Europe. Aena analyzes over two million records of raw data a day from Skyscanner alone, compared to the millions of records delivered a year from its other data providers combined. Some companies benefit from the simple-to-use front-end interface of Travel Insight Vision. However, Aena's large internal team gives them the people power to analyze and interpret data in the way that makes the most sense for their business needs. Aena's marketing intelligence team downloads a new comma-separated values (CSV) file every 24 hours containing all travelers' searches and redirects them over a chosen period. They process the data, using Structured Query Language (SQL) and Microsoft Power BI, and present it, alongside their other data sources, to stakeholders. Aena's programmers, statisticians, and marketing experts use these insights to drive and improve decision-making processes across the business. They also use these insights to inform management of macro and business trends.

Skyscanner provides information about where people want to travel in the coming months, and their preferred price, dates, duration, and other details. Knowing this information, Aena can identify the latest trends, habits, and emerging destinations. Aena evaluated demand as travel corridors opened and closed. Now, in the recovery environment where saving money has become a top priority, the company has operated more efficiently.

Build and manage location-based apps at scale with ease

Data type: Data products (Consumer)

Data provider: NielsenIQ

NielsenIQ (NielsenConsumer LLC) provides consumer packaged goods (CPG) manufacturers and retailers with accurate, actionable information and insights based on a complete picture of today's changing marketplace. NielsenIQ needed to provide startups and organizations with the right level of guidance to build location-based applications. NielsenIQ offers the TDLinx dataset as a comprehensive store reference information management system across all retail locations. This dataset includes attributes such as name, address, trade channel, longitude and latitude, marketing group, and corporate ownership for every store and outlet. It also includes the TDLinx code attribute, which is a unique identifier and integration key. The dataset also functions as an updated and validated customer master list, which includes expansive attribute sets, retail hierarchy information, and comprehensive coverage of the retail universe.

Continuously updated and thoroughly researched, the TDLinx location characteristics provide a comprehensive understanding of the physical retail and on-premises landscape. This industry-endorsed universal coverage spans over 862,500 locations in the United States. By leveraging TDLinx, organizations can scale their location source of truth for efficiency and scale without the need to build their own.

Automotive, Transportation, and Supply Chain Data



Connected, autonomous, shared, and electric vehicle trends are revolutionizing the automotive industry and creating disruptive new opportunities in transportation and supply chain logistics. Data is fueling this transformation, and it is driving new waves of innovation and leading to more effective, efficient, and sustainable smart manufacturing practices. That disruption results in significant long-term outcomes for new and diversified jobs, increased wages, and overall economic expansion.



Providing retail locations with the data analysis they need to survive

Data type: Location data

Data provider: NielsenIQ

NielsenIQ (Nielsen Consumer LLC) provides consumer packaged goods (CPG) manufacturers and retailers with accurate, actionable information and insights based on a complete picture of today's changing marketplace. One of the challenges NielsenIQ faced was how to help businesses manage multiple datasets. The datasets include location data that needs to be integrated for analyzing and activating business improvements and strategies. NielsenIQ offers the TDLinx dataset as a comprehensive store reference information management system across all retail locations. This dataset includes attributes such as name and address, trade channel, longitude and latitude, marketing group, and corporate ownership for every store and outlet. It also includes the TDLinx code attribute, which is a unique identifier and integration key. The TDLinx data can be used as the common key for data integrations by leveraging the TDLinx code associated with each physical retail location. Continuously updated and thoroughly researched, the TDLinx location characteristics provide a comprehensive understanding of the physical retail and on-premises landscape. This industry-endorsed universal coverage spans over 862,500 locations in the United States. When those are combined with its extensive location attributes, TDLinx enables businesses to organize, integrate, aggregate, and communicate using any location-based data across any industry and vertical.

Geolocation data offers businesses complete 24/7 supply chain transparency

Data type: Geolocation and satellite analytics

Data provider: Orbital Insight

Orbital Insight is a geospatial analytics company based in Palo Alto, California that helps organizations understand what's happening on and to the Earth. Major customers use Orbital Insight's self-service analytics platform to make smarter business decisions, build sustainable supply chains, and improve national security. These customers include Unilever, Airbus, and the United States Department of Defense. The company leverages geolocation data to help businesses track products from the very start of the supply chain through to the end user, especially in the farming industry. Orbital Insight GO uses geolocation data to discover, map, and monitor the multitier relationships that make up the supply chain networks that businesses and their competitors rely on. This information enables organizations to uncover the logistical links between factories, farms, suppliers, stores, and distribution facilities on a global scale. Orbital Insight GO offers much more transparency into supply chains and where harvested crops come from, down to the individual field. This data, in turn, allows users to predict possible issues like deforestation and decide how to act on this information.

Satellite data mapping brings valuable business insights down to earth

Data type: Geolocation and satellite analytics

Data provider: Orbital Insight

Orbital Insight is a geospatial analytics company based in Palo Alto, California that helps organizations understand what's happening on and to the Earth. Major customers use Orbital Insight's self-service analytics platform to make smarter business decisions, build sustainable supply chains, and improve national security. These customers include Unilever, Airbus, and the United States Department of Defense. Orbital also leverages geolocation data to help businesses build sustainable solutions, especially in the farming industry. Orbital Insight GO uses geolocation data to make it easy to answer geospatial questions. Such questions include which individual farms and plantations supply the palm oil mills in their extended supply chain. Orbital Insight GO offers a much clearer picture of where harvested crops are coming from, down to the individual field. This data, in turn, allows users to predict possible issues like deforestation and decide how to act on this information.

Orbital Insight GO automates the most difficult steps of deriving insights: allowing you to answer many challenging geospatial questions.



Transform your supply chain monitoring with geolocation data

Data type: Geolocation and satellite analytics

Data provider: Orbital Insight

Orbital Insight is a geospatial analytics company based in Palo Alto, California that helps organizations understand what's happening on and to the Earth. Major customers use Orbital Insight's self-service analytics platform to make smarter business decisions, build sustainable supply chains, and improve national security. These customers include Unilever, Airbus, and the United States Department of Defense. The company leverages geolocation data to monitor its supply chain and measure the efficiency of its quality control measures. This information opens up many opportunities. Businesses can use it to track supplier activity and receive alerts when anomalous behavior occurs. It also tracks the activity of competitors, enabling businesses to seize new opportunities. In addition, it allows businesses to track customers to optimize operational decisions. Orbital Insight GO offers much more transparency into internal supply chains, helping customers to be more proactive.

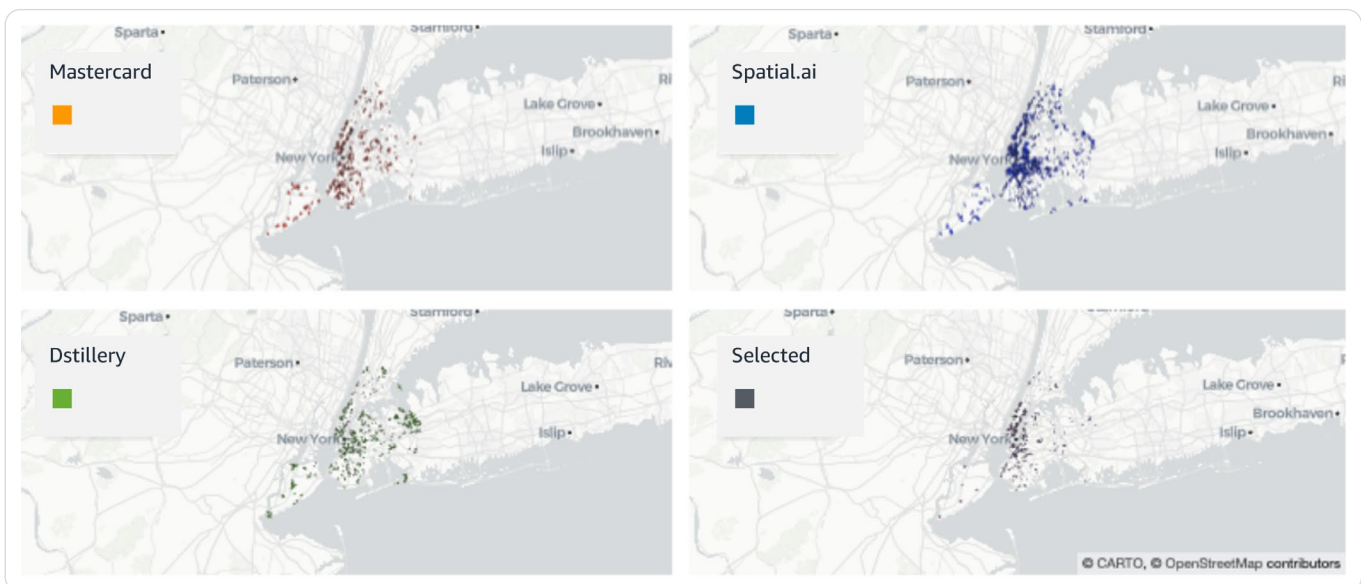
Buying behavior and spatial data combine to empower consumer packaged goods companies to find profitable urban markets

Data type: Spatial data science

Data provider: CARTO

CARTO is a cloud-native, location-intelligence platform. It enables organizations to use spatial data and analysis from third parties for more efficient delivery routes, better behavioral marketing, and strategic store placements. The time and complexity associated with sourcing, cleaning, and aggregating third-party data is a major roadblock for those who are trying to quickly extract insights. Some companies are looking to make inroads into the distribution of consumer packaged goods (CPG). To do this effectively, they need a robust understanding of the impact of features and geographic areas on buying behaviors. The organic produce market, for example, has grown significantly, due to a new generation of consumers. These consumers are closely linked to certain cultural, socio-economic, and health factors. CPG firms and their investors analyze these factors to better understand which features and city areas help with distribution and identifying points of sale (POS).

CARTO's Data Observatory brings together over 9,000 datasets across 11 categories and 35 data sources that help organizations source spatial data. Using the Data Observatory, users can seamlessly access and enrich their analysis with the latest and greatest location data, reducing time spent gathering, evaluating, and cleaning data. The Data Observatory is accessible in organizations' existing stacks (including Jupyter Notebooks) through a drag-and-drop mapping tool, or directly in their data warehouse of choice. Using the Data Observatory, CPG distributors (and their investors) can use data to identify which markets make the most sense for investment. This data includes credit card usage, social media profiles, and other behavioral factors. For example, the data reveals that in New York, higher income and artistic appreciation are related to premium foods and drinks. Analysis enriched with location data allows investors to quickly identify factors of interest. These factors can contribute to a successful choice of markets for the distribution of organic products and increase profitability.





Geospatial data paves the way for faster, smarter private equity decisions

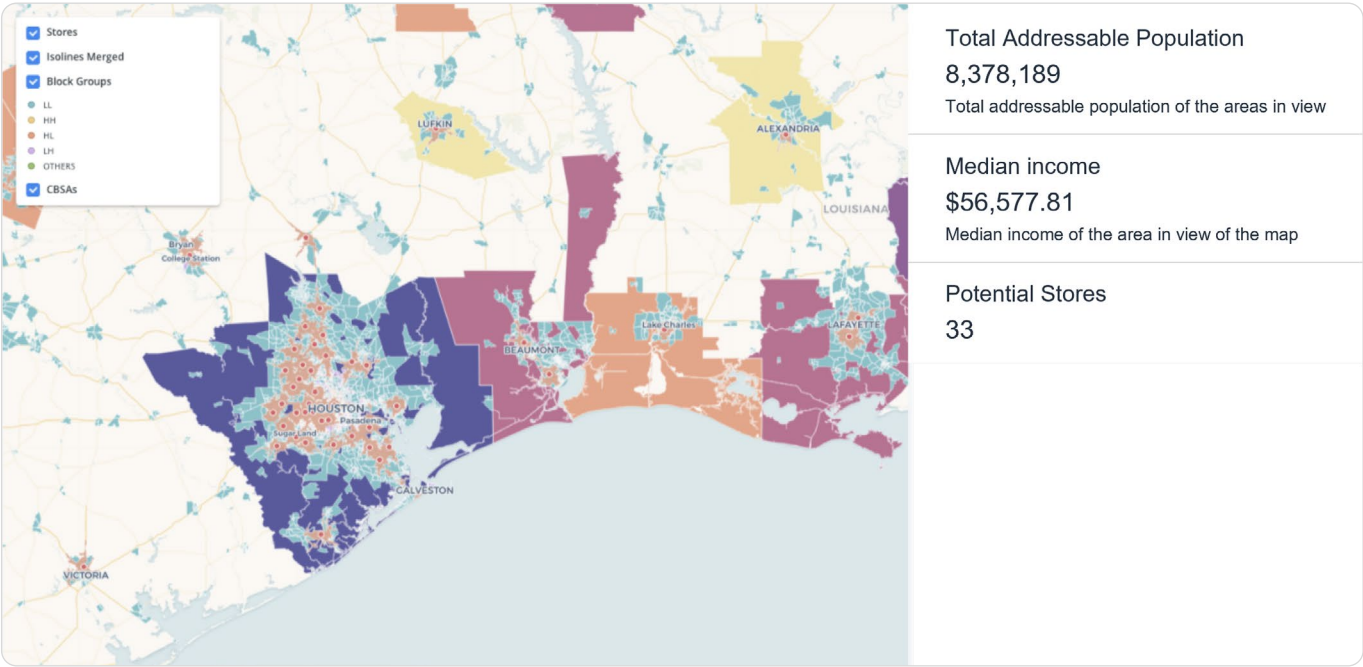
Data type: Spatial data science

Data provider: CARTO

CARTO is a cloud-native, location-intelligence platform. It enables organizations to use spatial data and analysis from third parties for more efficient delivery routes, better behavioral marketing, and strategic store placements. The time and complexity associated with sourcing, cleaning, and aggregating third-party data is a major roadblock for those who are trying to quickly extract insights. That reality is especially challenging in private equity markets. When a business is put up for sale, there is a very time-intensive, competitive bidding process. Funds need to learn as much as they can about the operations of a business in as short a time as possible. To do so, they need access to real-time alternative data to enrich their analysis and support their investment thesis.

When American Securities was considering buying a retail chain in the United States, it needed to answer questions about profitability and the potential for expansion. American Securities had to determine whether the distance from the core market was the key factor in determining the underperformance of a store. They also needed to know whether there were other confounding factors to consider. CARTO's Data Observatory brings together over 9,000 datasets across 11 categories and 35 data sources that help organizations take the pain out of sourcing spatial data. Using the Data Observatory, users can seamlessly access and enrich their analysis with the latest and greatest location data, reducing time spent gathering, evaluating, and cleaning data. The Data Observatory is accessible in organizations' existing stacks (including Jupyter Notebooks), through a drag-and-drop mapping tool, or directly in their data warehouse of choice.

Using this data, American Securities could seamlessly access, aggregate, and integrate a multitude of third-party alternative datasets into their existing analysis. In its analysis of the expansion question, it used data such as socio-demographics, competitive presence data, and Mastercard credit card transactional data. This data helped American Securities uncover merchant activity in a particular area, and enrich their analysis with location data. It very quickly identified spatial factors, such as parking lot size and population density, that affected the success or failure of the brand's existing locations. With a better understanding of these factors, the company could support future site expansion decisions and increase profitability.

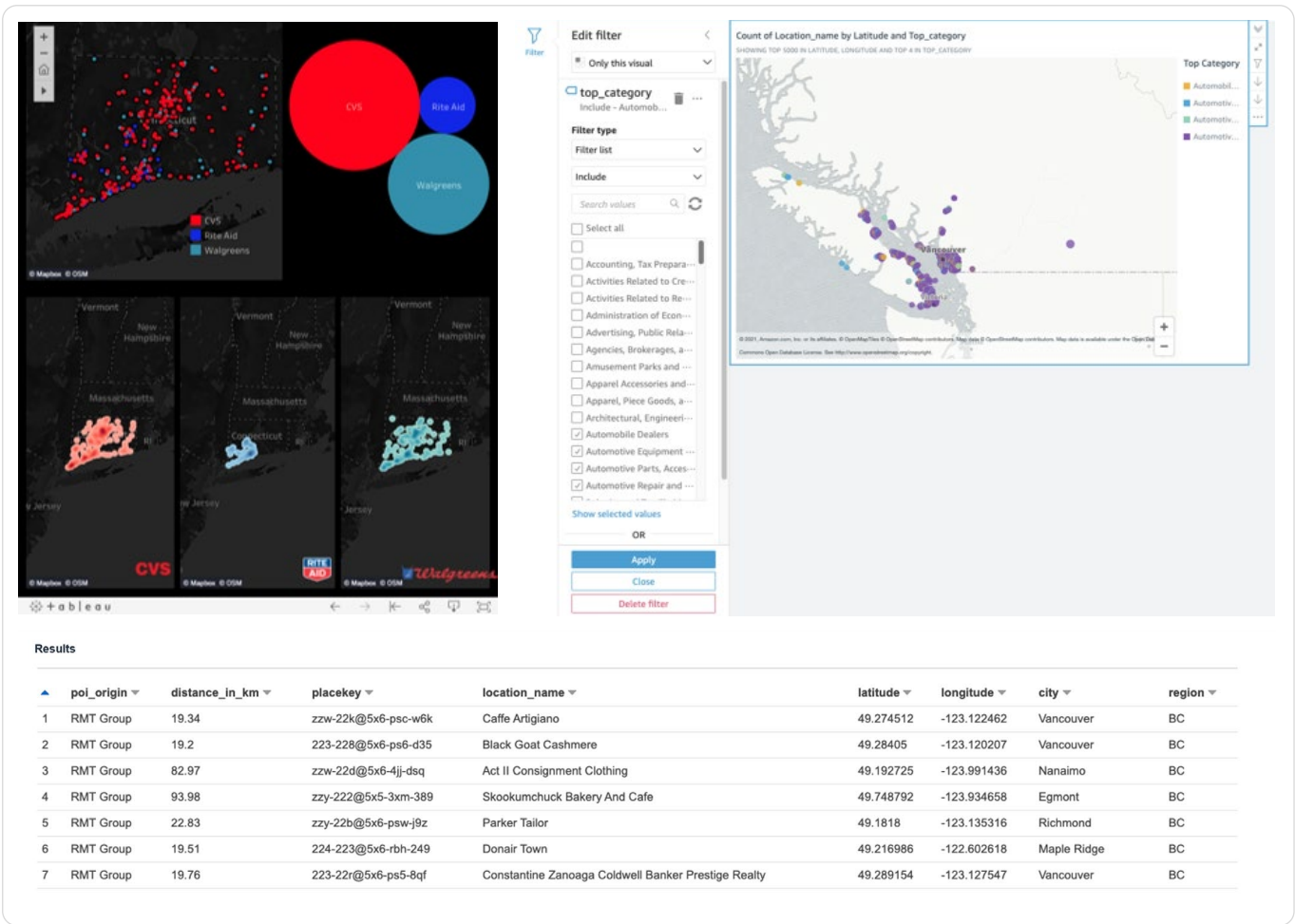


Organizations use point of interest data to accelerate strategic decision-making

- Data type:** Geospatial
- Data provider:** SafeGraph

SafeGraph provides points of interest (POI), building footprint, and foot traffic data for over eight million locations in the United States, the United Kingdom, and Canada. With coverage of over 6,200 brands, SafeGraph's POI database lists core attributes for a physical place. Examples include latitude and longitude, open and close times, and North American Industry Classification System (NAICS) codes. One challenge that organizations face is how to gather reliable location data. The site of a store, restaurant, or facility can make or break its success. Location data makes a considerable difference in choosing where to expand, as well as where to cut costs and cease operations. Many factors need to be considered to make a confident, strategic decision.

SafeGraph Places data provides detailed POI information to identify areas of market opportunity or saturation. With brand affiliation and foot traffic counts, SafeGraph Places reveals how consumers interact with physical places and measures how that can impact a store's success. SafeGraph Places has the ability to see where specific brands are located in relation to one another and how people interact with different places. This ability enables analysts and data scientists to develop precise models that help businesses make informed site selection and deselection decisions.

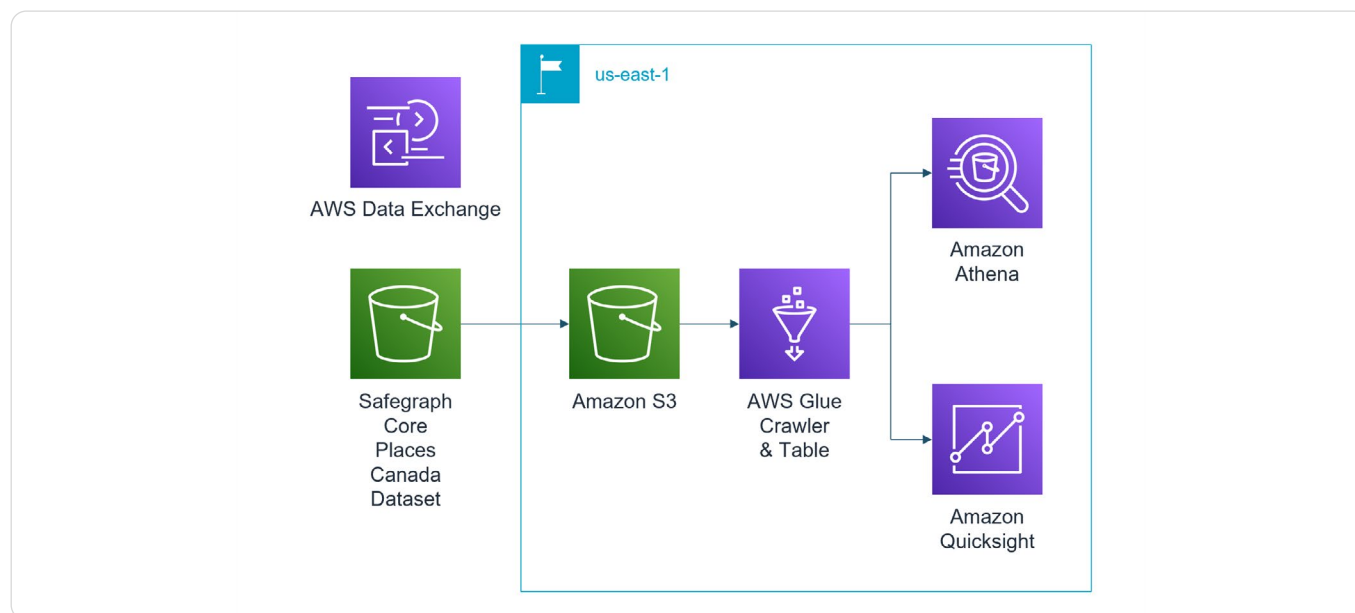


Geospatial data drives future economic predictions and strategic trends

Data type: Geospatial

Data provider: SafeGraph

SafeGraph provides points of interest (POI), building footprint, and foot traffic data for over eight million locations in the United States, the United Kingdom, and Canada. With coverage of over 6,200 brands, SafeGraph's POI database lists core attributes for a physical place. Examples include latitude and longitude, open and close times, and North American Industry Classification System (NAICS) codes. Managing an investment portfolio, whether real estate, private equity, or hedge funds, requires meticulous analytics and modeling. Financial services firms need innovative ways to perform investment research, due diligence, and portfolio management. They also need to stay ahead of the competition and improve their investments. Geospatial alternative data such as POIs and foot traffic are essential for understanding market landscapes and the impact of consumer activity on a particular place. SafeGraph data provides up-to-date business listing information, including brand openings and closings and aggregated mobility data associated with specific POIs. Alternative data is quickly changing the financial services industry, with geospatial data, in particular, becoming increasingly pervasive in investment research and management. With this information, firms can predict future economic trends and strategically decide where to invest.



SafeGraph and Amazon Web Services

Connected vehicle data helps businesses make more informed, strategic decisions

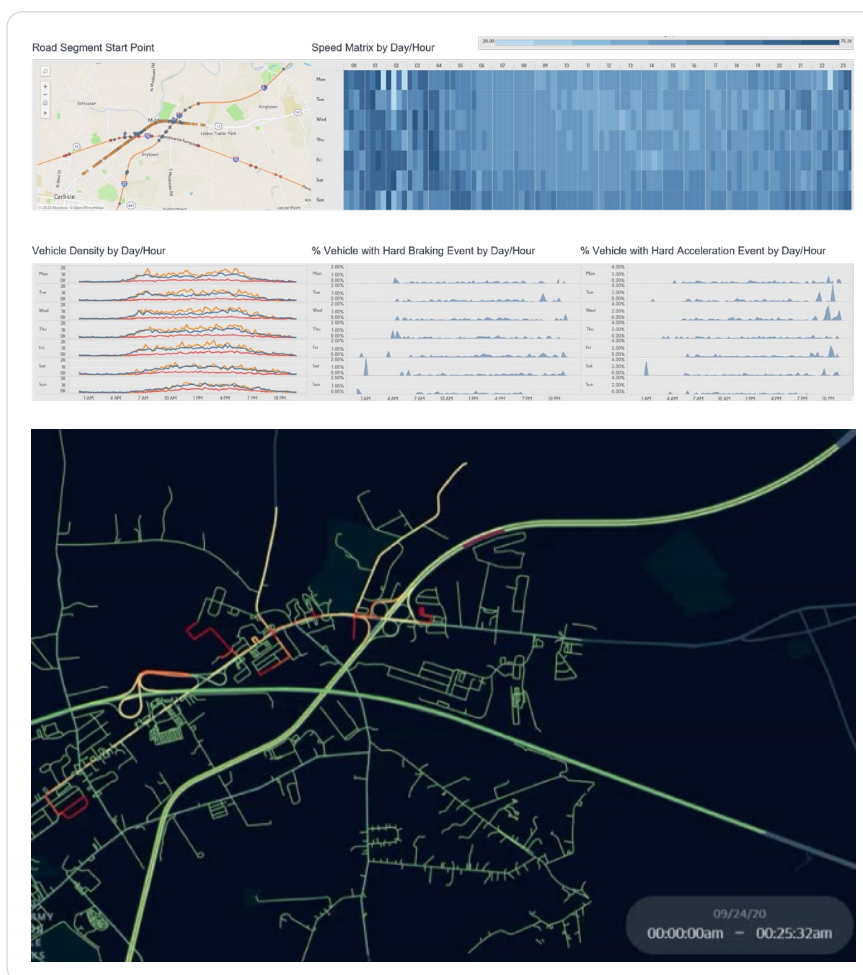
Data type: Traffic intelligence

Data provider: Wejo

Wejo partners with global auto manufacturers to create mobility intelligence that revolutionizes the way we live, work, and travel. The company helps public and private sector organizations create better experiences and more livable places for the people they serve. This is accomplished by reducing preventable road incidents, easing traffic and congestion, and making mobility smarter and more sustainable for all. Understanding traffic trends can be complicated, with disparate data sources that often require specialty hardware, dedicated analytical teams, and, in some cases, manual data collection methods. Another challenge around traffic data involves latency, which can significantly slow the collection of key data. Wejo knows that quick and easy access to data is critical for ensuring quality traffic intelligence. Wejo's Traffic Intelligence is the only traffic report powered by data from connected cars. Wejo uses aggregated movement data from

millions of connected vehicles. It translates source data into insights about directional traffic volumes, traffic flows, average speeds, hard braking, hard acceleration, and congestion. Traffic Intelligence is available daily in a simple and readable format that can easily integrate into any business intelligence (BI) and geographic information system (GIS) tool.

With Wejo, businesses can reduce time spent in the field collecting data and improving productivity. By offering frictionless access to the data, allowing companies to make data-driven recommendations, Wejo removes the manual process of collecting, ingesting, storing, and analyzing data. Instead, it goes straight to aggregated data insights so businesses have the confidence to make timely, and more informed suggestions with accurate data insights.



Automating connected vehicle data leads to faster traffic insights

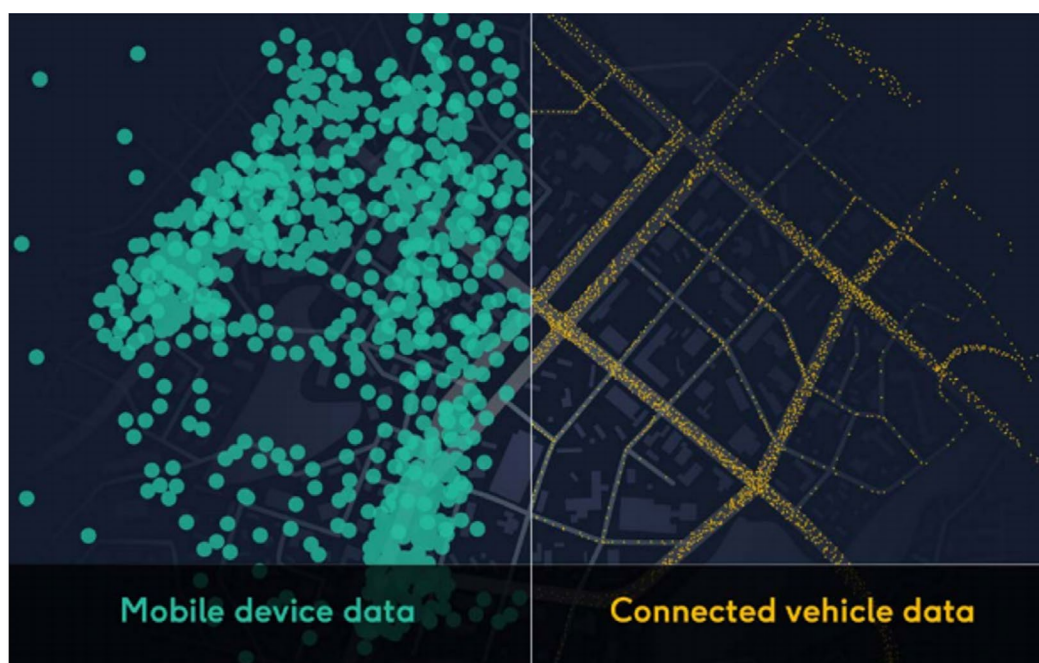
Data type: Traffic intelligence, Location and marketing data

Data provider: Wejo

Wejo partners with global auto manufacturers to create mobility intelligence that revolutionizes the way we live, work, and travel. The company helps public and private sector organizations create better experiences and more livable places for the people they serve. This is accomplished by reducing preventable road incidents, easing traffic and congestion, and making mobility smarter and more sustainable for all. Understanding traffic trends can be complicated, with disparate data sources that often require specialty hardware, dedicated analytical teams, and, in some cases, manual data collection methods. What's more, collecting traffic data is also often an expensive process. Wejo knows the keys to boosting operational efficiency when it comes to gathering traffic data. Wejo's Traffic Intelligence is the only traffic report powered by data from connected cars. Wejo uses aggregated movement data from millions of connected vehicles. It translates source data into insights about directional traffic volumes, traffic flows, average speeds, hard braking, hard acceleration, and congestion. Traffic Intelligence is available daily in a simple and readable format that can easily integrate into any business intelligence (BI) and geographic information system (GIS) tool.

With Wejo, businesses can explore and analyze connected vehicle data to extract meaningful and actionable traffic and congestion insights. By automating manual, time-consuming, and error-prone traditional data collection tasks, Wejo accelerates your project, reduces resource requirements, and reduces risk.

<https://www.wejo.com/products-wejo-traffic-intelligence>



(Above)

The precision provided by Wejo's connected vehicle data products are second to none in every way.

Travel and Hospitality Data



Travel and transportation data can provide a more holistic view of consumers by capturing mobility and transit behavior changes, and trends. Possible uses include the analysis of search and redirect behavior, tracking of changes in travelers' attitudes, and a better understanding of shifting market and route demands. Organizations can leverage these datasets to enrich first-party data, create custom targeting segments, and improve marketing strategies.



Forward-looking travel data is helping this major airline win more customers

Data type: Travel data

Data provider: Skyscanner

Skyscanner began in 2003 as a simple flight search engine and has grown into a global leader in travel. Skyscanner's Travel Insight is a leading data product that provides exclusive access to the world's largest source of traveler search and booking demand data. It enables organizations to gain powerful insights into travel habits, industry performance, and future trends. One of the challenges facing airlines today is the immense amount of choice when booking a flight, with multiple airlines usually available for most routes. This is great for travelers, but it raises a few hurdles for airlines. If they charge too much, people are more likely to pick another airline. Charge too little and profit margins are squeezed. With nearly 7,000 flights a day, this situation creates a difficult balancing act. American Airlines chose Travel Insight in January 2019 to improve the company's revenue management decisions. While many data providers in the travel market specialize in booking, pricing, and scheduling information, most solutions are fragmented and unable to show future demand. Travel Insight combines all of these features into one product. It is based on one of the world's most comprehensive sources of search and airfare data: 100 million monthly Skyscanner users globally. Travel Insight provides unique insight into travelers' habits, intentions, and fare and route popularity. It also shows where people wish to travel up to 12 months into the future.

As a result, American Airlines now gains insights over its market more easily, with the power to make faster, data-driven decisions. The company gets data on flight searches and redirects to and from the United States every single day. This data is delivered straight into an Amazon Simple Storage Service (S3) storage bucket with improved security features. Fare analysis shows which prices are driving more redirects and reveals how other carriers price similar flights. This travel data is improving how high-and low-price boundaries are set, so fares have strong margins without being prohibitively expensive. At the same time, competitor analysis is providing American Airlines with insight into route and market share, shedding light on corporate opportunities for future growth.

Boosting domestic tourism during COVID-19 for an Australian tourism organization

Data type: Travel data

Data provider: Skyscanner

Skyscanner began in 2003 as a simple flight search engine and has grown into a global leader in travel. Skyscanner's Travel Insight is a leading data product that provides exclusive access to the world's largest source of traveler search and booking demand data. It enables organizations to gain powerful insights into travel habits, industry performance, and future trends. Before working with Skyscanner, Strategic Insight Analyst of Australia had no visibility of travelers' search demand. It lacked the forward-looking data that showed what travel people were planning and booking for the future. But in mid-2020, with the pandemic raging, the team wanted to improve its forecasting. They needed a better grasp of when borders would reopen and which markets to target first. After working with Boston Consulting Group to build a predictive model, Strategic Insight Analyst chose Travel Insight Reports.

With no big international campaign possible, Strategic Insight Analyst switched their targeting to the only people who could explore Australia: Australians. The City Escapes campaign sought to drive visitors back into the country's big cities, which had been hit hard by COVID-19 and needed support. Travel Insight Reports helped power this new domestic campaign to encourage Australians back into their cities. It shone a spotlight on their world-class dining, entertainment, retail, and culture. Travel Insight's raw data gave the agency the scope, depth, and granularity it hadn't had before. It was forward-looking, it was delivered daily, and it showed every search and redirect of people across Australia. With a small team processing the data and using Microsoft Power BI to build weekly custom reports, search data started shaping their strategic and marketing direction. These insights helped the agency reach the right people at the right time. They revealed where demand was lower, making it easier to allocate budget to where it was needed the most. Travel Insight Reports is complemented by other sources like Tourism Research Australia and industry airfare data to provide sentiment and consumer confidence data.

All of this forms a complete travel picture of what's changing over time and what the future looks like. Australia is still in the early days of recovery as state borders continue to open and close. However, the City Escapes campaign has been a huge success, resulting in a clear spike in travel across the country. Strategic Insight Analyst is excited to unleash Travel Insight Reports when international borders reopen. It looks forward to seeing endless opportunities in its data, especially during the global recovery period.

Summary



As an increasing number of businesses seek to find data solutions, **101 Ways to Use Third-Party Data to Make Smarter Decisions** provides a collection of use cases to illustrate the unique success stories of overcoming a particular challenge with a deployed solution from data providers listed on AWS Data Exchange.

No matter what your unique business or technical challenge is, AWS Data Exchange makes it easy to find, subscribe to, and use third-party data in the cloud. Qualified data providers include category-leading brands such as Reuters, who curate data from over 2.2 million unique news stories per year in multiple languages; Change Healthcare, who process and anonymize more than 14 billion healthcare transactions and \$1 trillion in claims annually; Dun & Bradstreet, who maintain a database of more than 330 million global business records; and Foursquare, whose location data is derived from 220 million unique consumers and includes more than 60 million global commercial venues.

Once subscribed to a data product, you can use the AWS Data Exchange API to load data directly into Amazon S3 and then analyze it with a wide variety of AWS analytics and machine learning services.

[Explore available data products](#)

[Connect with our Data Discovery team](#)

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