A sudden hailstorm in Warsaw, Poland in March 2019

WEATHER

NEXT-GEN FORECASTING

New companies are revolutionizing the science through precise data—and finding big ways to cash in.

BY PAUL GILLIN

For all the flashy technology touted by the local news over the years, weather predictions are less than perfect. But all that is changing fast. A host of specialty firms are applying sophisticated forecasting techniques—from big data analytics to crowdsourcing—to anticipate severe weather events and potentially save property, money and lives in the process.

Hail is a particularly significant challenge. Highly localized and often destructive, hailstorms cost the U.S. as much as $22 billion per year in total damage. To solve the problem, Understory has raised more than $22 million to build a constellation of ground-based sensors that collect data on 125,000 measurements per second. The company uses the information to pinpoint hailstorms with high levels of precision. The service is particularly valuable to insurance companies, which can use this information to dispatch claims adjusters more efficiently and head off fraudulent claims. Understory recently entered the insurance business itself with Auto – Hail Safe, a policy specifically for auto dealers looking to safeguard their inventory parked on lots.

"Our precision sensors … enable innovative products and fulfill the promise of insurance digitization," Understory founder and CEO Alex Kubicek said in a statement late last year. "[T]his is a truly disruptive way of doing business in a very traditional industry."

Seeing the same opportunities, Plano, Texas-based Dynamic Weather Solutions has pioneered its own big data product, HailStrike. Using real-time radar and satellite data, the system's analytics can identify the location of storms and even predict the size of hailstones—all presented to users through its mobile app.

This big data revolution in weather forecasting is not just limited to hail. Micro-forecasting company Climacell uses data from 600 million sensing points—found in everything from car thermometers to traffic cameras—to generate short-term forecasts accurate down to a city block. The service is a godsend to businesses like airlines, sports arenas and utilities for which disruptive weather events pose particularly significant risks.

Overhead, GeoOptics, which in 2016 became the first commercial company to sell satellite weather data to the U.S. National Oceanic and Atmospheric Administration, is launching satellites designed to measure atmospheric distortions to GPS signals through special sensor data—particularly useful in predicting solar activity.

It will all add up to a $3.3 billion market by 2025, according to a September 2019 Research and Markets report. There may not be new kinds of weather under the sun, but there are definitely new ways of tracking them.

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> **—Alex Kubicek**, founder and CEO, Understory