

## Cities Tap AI to Regulate Short-Term Rentals as Travel Picks Up

Computer vision and natural language processing are helping cities keep track of online rental listings and potential tax revenue

[Jared Council](#) Sept. 3, 2020 5:30 am ETWSJ Pro

### By Jared Council

Cities and towns are tapping artificial intelligence and other technologies to keep tabs on short-term home-rental activity. As the effects of the coronavirus pandemic tear through budgets, some localities hope the tools can identify tax-revenue opportunities.

Even as Covid-19 has rocked the travel industry, short-term rentals have rebounded in the lead up to Labor Day, including in smaller, [more-remote destinations](#).

“Cities and other levels of government are dealing with what has been just an explosion of short-term rental activity over the last five or so years,” said David Wachsmuth, a professor of urban planning at McGill University in Canada. “And it’s a situation where regulation is impossible, basically, because of some of the data-access issues.”

One of the biggest challenges cities face in regulating home rentals is figuring out the addresses, owners and total bookings for a listing. That data is vital for enforcing local ordinances and collecting taxes, but such information typically isn’t immediately available on listings on popular rental sites including Airbnb Inc.

Nashville, Tenn., signed up with vendor Host Compliance, a division of Granicus LLC, in July 2017 to help enforce a short-term rental ordinance it adopted in 2015. Part of the objective was to identify and collect taxes from home-rental operators, and get alerts when new unlicensed listings appear.

Host Compliance uses computer-vision algorithms that can identify the features of a listing photo, including layout and fixtures of a room, and find matches elsewhere on the internet, such as real estate websites, even if the furnishings in a room are different, said founder Ulrik Binzer. The software also uses machine learning to flag owners who might be grossly underreporting taxes, based on an analysis of calendar nights blocked on the listing page. Human analysts are also involved in unearthing information about listings, he said.

Nashville is under a four-year contract with Host Compliance, which costs the city about \$250,000 annually. In the first year, the software helped the city increase short-term rental tax revenue from about \$4.1 million to almost \$7 million, according to records shared by Jon Michael, zoning administrator for the metropolitan government of Nashville and Davidson County.

Garden Grove, Calif., another Host Compliance user, signed up in 2019 for a year-to-year contract at about \$16,000 annually. A suburb of Anaheim, the city has a ban on all short-term rentals in residential areas and uses the software to flag new listings, said Pete Roque, a code enforcement supervisor for the city.

“We had an abundance of calls for police services for domestic violence, for drug use, for trash, noise,” Mr. Roque said. “It became a real issue in the community...and we needed a faster way to identify the short-term rentals and begin enforcement action on them.”

Cities and counties are continuing to sign up for rental-compliance software during the pandemic given the expected uptick in short-term rental activity, said Erin Neer, chief executive of compliance-software vendor MUNIRevs LLC, which also uses computer-vision algorithms and human analysts to compile data about a listing. She cited Hawaii County, Hawaii, and Newport Beach, Calif., as new customers in August.

“We’ve had sales tax dropping in a lot of communities and obviously other revenues from Covid quarantine-type situations,” she said. “And in every industry trend we’re seeing, the short-term rentals are opening back up, and if a community is not collecting those taxes, then they have a revenue gap.”

Rental-compliance software Harmari STR, offered by LTAS Technologies Inc., uses image-recognition algorithms to figure out duplicate images and listings across sites, which helps winnow down work for human analysts. Chief Executive Allen Atamer said the company uses natural-language processing to analyze reviews and flag when a host might be violating local ordinances, such as posting a listing that isn’t his or her primary residence. Its customers include Fort Lauderdale, Fla., and the Toronto-area ski resort town of Grey Highlands, Ontario.

A spokeswoman at Airbnb said the home-sharing platform has hashed regulatory agreements with more than 500 cities around the world over the past several years to help them manage local home-rentals and collect taxes. That includes cities like Los Angeles and Chicago, where the company created registration systems for obtaining rental permits.

“We are taking a number of steps to continue our partnership with cities as many look for help ushering in the safe return of travel,” the spokeswoman said.

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