Business challenge

Repo Cyber Ltd. needed a highly secure, scalable cloud platform to quickly build and deploy an AI-enhanced app that would allow individuals to anonymously report crimes and other concerns to authorities.

Transformation

IBM Business Partner Repo Cyber helps potential informants break their silence with an easy-to-use, smart city app that protects users' identities. Supported by IBM® Cloud™ infrastructure, the Repo Cyber app increased citizen reports in one Israeli city by more than 450 percent while helping police respond more quickly to complaints.

**Zeev Mindali
Chief Technology
Officer and Cofounder
IBM Business Partner
Repo Cyber Ltd.**

Results

>450% boost in reports of crimes and other concerns
received by the Kiryat Yam command and control (C&C) center within two weeks

~30% rise in service levels across city departments
with a 20% average reduction in C&C center response times

>35% improvement in police force efficiency
and 50% increase in citizens' feelings of safety and security

Repo Cyber Ltd.

All it takes is a text to anonymously report a crime

Repo Cyber developed a smart city app that allows citizens to report crimes and other concerns to government authorities, without revealing their personal identities. Enterprise companies can also use the Repo Cyber system to help stop sexual harassment, bullying and similar activities. Founded in 2017, the startup company employs four people in its offices in Kiryat Yam in the Haifa Bay district of northern Israel.

"Within a short period, [the IBM team] helped us set up our app and expand its capabilities with minimal risk to our company."

—Zeev Mindali, Chief Technology Officer and Cofounder, IBM Business Partner Repo Cyber Ltd.

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A safer, faster way to report crimes

Too often, citizens who witness crimes fail to report them to law enforcement agencies. In many instances, they fear the perpetrators will retaliate. In others, they simply don't want to go through the inconvenience of waiting in line at the police station or talking with a call center rep. Even if citizens do act, they might give incomplete accounts because of language barriers, uncertainty about their exact location or other difficulties.

The founders of Repo Cyber wanted to empower citizens to make their communities safer, more desirable places to live. They sought to develop a smart city app that would free individuals from the worries of exposing themselves and their families to potential harm. With just a few taps on their phone, individuals could anonymously send law enforcement and other government agencies critical, timely details about goings-on in their cities.

"Our main goal was to help ensure citizens can safely and confidently report crimes, terrorist attacks and other concerns while also automating daily tasks to enable faster, more accurate responses," explains Zeev Mindali, Chief Technology Officer and Cofounder of Repo Cyber.

Mindali and Yehuda Solomon, the company's Chief Executive Officer and Cofounder, brought not only their shared vision for the new app to the Israeli startup company but also decades of combined law enforcement experience. Mindali is an IT professional who previously served in the Israeli police force, and Solomon is a retired lieutenant brigadier in the Israeli police force. They drew on their deep insights into civilian behavior and police procedures to map out the solution's requirements, with a focus on making the app citizen centric.

"We wanted to make our app a must-have for any cell phone," says Mindali, meaning it had to be easy to use, be able to support myriad languages and media formats, and be designed for security. They also considered which service provider could deliver both a highly secure, scalable cloud environment to host the app and other advanced technologies, including an AI toolset.

Kiryat Yam gains an edge on crime

The company evaluated many leading cloud service vendors before selecting IBM. "[The IBM team] believed in our solution and helped us to determine its architecture," says Mindali. "Then, within a short period, they helped us set up our app and expand its capabilities with minimal risk to our company." As a participant in the IBM Global Entrepreneur Program for Cloud Startups, Repo Cyber received affordable access to the IBM Cloud platform and other valuable technical and business resources.

Repo Cyber tested its app in Kiryat Yam, an Israeli port city of nearly 40,000 residents, including Russian, North African, Ethiopian and other immigrant populations who speak diverse languages. The city's police force and other first responders handle a variety of events, including acts of terrorism, domestic violence, vandalism, and injuries and damage caused by earthquakes. In addition, the city's C&C center monitors the streets and Mediterranean coastline through webcams plus receives information from traffic control systems, weather satellites, air quality sensors and earthquake detectors.

Through a pilot program, Repo Cyber and IBM teamed with city authorities to integrate the Repo Cyber system with the city's C&C network and make the app available to residents and tourists. Now, individuals can quickly report everything from dangerous crimes, earthquakes and other life-threatening events to less-urgent public health and safety concerns, such as uncollected garbage and potholes on city streets. They can use texts, photographs, videos or voice messages, assured that their personal details will remain anonymous. The app also gives them the option of communicating in more than 80 languages.

IBM Watson® AI technology rapidly analyzes the information, correlating it with similar reports from other individuals and pertinent data collected from the city's monitoring systems. It also cross-references the data with motor vehicle, terrorist, runaway and other databases. Based on this advanced analysis, the Repo Cyber system automatically notifies relevant government agencies so that they can make informed decisions on how to respond. It also translates reports as needed for the city's C&C center operators and other officials, most of whom speak Hebrew as their first language. All of this happens in seconds in the cloud.

"For example, a citizen reports that a road is flooded," explains Mindali. "Water on the road occurs in only in two ways—from excessive rainfall or an exploded water pipe… The Repo Cyber system pulls data from every single API, getting information about the environment, the weather, what is going on, everything that allows it to give a detailed final report to the final decision maker [to help him determine] if he needs to send out a police car."

The city's police force, fire crews and other first responders receive the insights through dedicated web and mobile portals. Mindali emphasizes that the Repo Cyber intelligence empowers them to respond with greater speed and urgency to dangerous situations before they escalate and potentially cause major injuries or deaths.

He recounts how one citizen recently used the app to anonymously report that two teenage boys were driving dangerously on electric bikes. "When the policeman responded, he found that one of the kids carried several small bags of [marijuana], ready to sell to middle school youth," says Mindali. "Because the Repo Cyber system alerted police to a dangerous event, they could quickly respond and in the end prevent a more serious event."

Repo Cyber worked with IBM to design a hybrid, multicloud solution architecture with the following services delivered on an open IBM Cloud foundation:

- IBM API Connect® service provides a single, signed, encrypted gateway for connections with municipal and other third-party systems.

- IBM Blockchain Platform, powered by the Linux Foundation's Hyperledger Fabric, validates the source of each citizen communication with revealing personal details.

- IBM Cloudant® distributed database speeds and scales throughput capacity and data storage.

- IBM Identity and Access Management solution grants user access through secure sign-on.

- IBM Watson IoT™ Platform captures data from the city's network of intelligent devices.

- IBM Watson Knowledge Studio service custom trains highly accurate models for analyzing text, video, images and other unstructured data.

- IBM Watson Visual Recognition service quickly and accurately tags, classifies and trains visual content.

Multicloud services provide speech-to-text translations in multiple languages, including Hebrew.

A 50 percent greater sense of security

Now able to keep their identities hidden, more people in Kiryat Yam feel more inclined to report suspicious activities. The ability to communicate in their preferred languages and multiple formats also gives them greater confidence to act. In one two-week timespan, individuals used the app to submit approximately 14 anonymous reports each day, which represents an increase of more than 450 percent. During the three-month proof-of-concept (POC) period in Kiryat Yam, approximately 1,000 individuals used the app to submit reports, while the number of telephone reports C&C center operators received dropped by approximately 20 percent. In addition, the number of reports submitted by people who speak languages other than Hebrew—particularly Romanian, Russian and Yiddish—increased by more than 50 percent.

The city also boosted its workforce responsiveness. Service levels increased by up to 30 percent across all city departments, including sanitation, utilities, social services

and healthcare. In particular, the police force increased its efficiency levels by more than 35 percent, while the C&C center decreased the time its operators required to handle complaints by 20 percent on average.

"When we launched the system, many municipal employees thought it would replace them," comments Mindali. "However, after they realized it will not only replace but empower them to respond faster and in the most practical way to citizen reports, they fell in love with the system."

As further testament to the pilot solution's success, Kiryat Yam fully adopted the Repo Cyber system after the initial pilot ended. Its city officials are also sharing their enthusiasm for it with other Israeli municipalities, including Haifa, the country's third-largest city. Perhaps most important, city surveys reveal that residents' overall sense of feeling safe and secure in their community has risen more than 50 percent.

Finally, by building its smart city app on IBM Cloud, Repo Cyber accelerated POC development with minimal capital investments and risk. The cloud infrastructure also helps enable the company to rapidly innovate around AI while maintaining high service quality and reducing operational costs.

Mindali stresses that his company will continue to work with IBM to develop new app functions and features. "The support IBM provides to us is priceless. They are like a big family, and this is why we stay with IBM. After that, it's a matter of security, which is very important in Israel."

Solution components

- IBM® API Connect®
- IBM Blockchain Platform
- IBM Cloud™
- IBM Cloudant®
- IBM Identity and Access Management
- IBM Watson IoT™ Platform
- IBM Watson® Knowledge Studio
- IBM Watson Visual Recognition

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