



Improving Policing with Business Intelligence & Data Analytics

Halton Regional Police Service Ontario, Canada

As part of the Greater Toronto Area in Ontario, the Regional Municipality of Halton is experiencing Canada's fastest population growth. It has been named Canada's safest regional municipality to live in for six consecutive years. The agency protecting this growing region is Halton Regional Police Service (HRPS).

With over 1,000 members, HRPS ensures the safety of more than 500,000 citizens across 1,000 square kilometers or 386 square miles. From urban centers to farm lands, the agency supports diverse law enforcement efforts and policing scenarios.

HRPS is a forward-thinking police agency. While the region has low crime rates, agency leaders wanted to improve operational efficiencies and make smarter public safety decisions. To achieve this, HRPS decided to leverage its collected data to identify areas for improvement.

However, converting that data into actionable intelligence presented several challenges for the agency. Critical public safety and law enforcement data was siloed throughout the organization. Consolidating all of the agency's data assets into one data warehouse would consume too much time, money, and manpower. Also, the data the agency collects is vast, making it difficult to extract, analyze, and report in an accurate and timely manner.

As a result, HRPS needed a solution that would connect, mine, and transform data from across the organization, making it easier to analyze and accurately report.

Transforming Data into Intelligence

Using big data is a growing trend among police agencies worldwide. But mining and transforming big data into business intelligence is nearly impossible without the right tools and processes.

HRPS selected Hexagon's Safety & Infrastructure division to help leverage its public safety data with a business intelligence system – one that would connect, mine, and transform siloed data into a single database for faster and more accurate reporting and decision-making.

"We hoped to improve our service delivery model," HRPS Deputy Chief Nishan Duraiappah said. "We wanted to not only make better decisions, but also improve our deployment of officers and utilize resources more wisely. We needed a system that would allow us to better understand how we operate."

The police service deployed Hexagon's business intelligence software to build a data warehouse that consolidated data from various sources, regardless of location or structure. The solution pulls data from

Hexagon's computer-aided dispatch (CAD) software, records management system, and other sources. Then, the system transfers the data sets into one database to quickly query and run custom reports, prototype new reports, and write custom scripts.

Supporting the Police Analytics Mission

Having a business intelligence system that quickly transforms data into accurate reports is powerful. With experts and analysts to interpret and validate findings, an organization can realize even greater results from its data.

Hexagon's software supports the agency's Police Analytics Unit, which mines and leverages data from within and outside of HRPS to make the police service more efficient and effective for citizens. Staffed with data scientists, mathematicians, programmers, and police, the unit operates like a technology startup within HRPS and works to foster data-driven decision-making.

"[Hexagon's] business intelligence software is critical to how we collect, analyze, and turn our data into actionable intelligence," said Joseph Glover, HRPS police analytics coordinator. "The system is a critical ingredient to implementing our police analytics vision."

The business intelligence system ensures analysts collect, analyze, and report relevant public safety data. It also gives them the flexibility to develop custom script languages and web tools that support the changing data needs of the agency.



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Joseph Glover
HRPS Police Analytics Coordinator

Improving Operational Efficiencies

With Hexagon's business intelligence software and the Police Analytics Unit working together, HRPS can now transform its vast amount data into actionable intelligence to improve operational efficiencies. Leveraging data from its dispatch and records systems, each individual action performed by officers is time-stamped and classified based on the nature of the activity. The system then analyzes the data to enable proactive and preventative operations.

"We've always had ideas about ways to improve operational efficiency and public safety quality, but we never had a way to quantify and prove out those ideas," said Glover. "Now we have a business intelligence system, analysts, and processes to measure data points that affect operating efficiencies. We can see if policy changes are working by looking at data."



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Armed with monthly, quarterly, and annual performance measures, the agency quantifies officer activities, allowing supervisors to better determine how to allocate teams to improve public safety. HRPS has been able to make more informed decisions on managing cross-dispatch scenarios, reducing officer speeding incidents, mapping criminal activity hot spots, and more.

“We have not only been able to look at our deployment models across our policing geography, but we’ve also been able to make changes to where police officers police, and with zone realignment,” Duraiappah said. “We have done studies on peak-time policing and have

been able to redeploy resources at peak times, which has, in turn, provided better community safety for our citizens and businesses.”

The HRPS also partnered with Hexagon to integrate its RMS with its financial and human resources systems. The agency’s objective is to manage officer work performance and accurately forecast budgetary needs.

“We’ve now moved from just making decisions based on best assumptions or previous knowledge of an area to making data-driven business decisions,” Duraiappah said. “Now, it’s become our philosophy.”



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Nishan Duraiappah
HRPS Deputy Chief

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity and quality across industrial, manufacturing, infrastructure, safety and mobility applications. Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

Hexagon’s Safety & Infrastructure division provides software for smart and safe cities, improving the performance, efficiency and resilience of vital services.

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