



Seeing Is Believing: How Visualizing Data Translates to Better Service for Our Community

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A picture is worth a thousand words and that definitely holds true for data. Whether it's sales numbers or weather reports, getting the right visuals can make presentations more compelling and accelerate understanding. Seeing is believing, and data visualization is a big part of making data-based decisions.

Up until a few years ago, however, we couldn't see much of anything. Located down the road from Toronto, Canada, [the Town of Oakville](#) has more than 193,000 residents. Founded in the early 1800s, it has hosted a number of industries over the years, and kept [the Town of Oakville](#) name even as the community merged with a number of other area towns in the 1960s.

I joined the Town of Oakville six years ago as the Supervisor of Geospatial Solutions, and for the last three years I've led the Business Solutions and Analytics group within Strategic Business Services. We provide many services for other town departments, including creating mapping applications and analytical dashboards.

When I became supervisor, we had tons of data but did very little analysis. We also lacked visualization tools. While our method of operations wasn't uncommon, evolving technologies meant we had to take a fresh look at how we could use our data. Impactful democratized data analysis was crossing from the future into the present, and we needed a way to take that next step.

From Plans to Action

We had plenty of ideas for how we could use greater data visualization tools. For example, our team already created a variety of web mapping applications using [Esri](#). We used another application named Amanda to hold data related to property. Some of our most common requests were related to data around building permits—we would regularly get asked to pull data regarding a process stage, such as open building permits.

But it was clear that giving staff a report with numbers was nowhere near as impactful as providing visualizations. People can read and understand a chart without internalizing the meaning of the data, and they'd ask the wrong questions of the data because they couldn't see what they needed in the numbers.

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We all needed a way for them to see the data themselves and start to identify relationships and trends. The first step we took was to hire a data scientist for our team. She began to help put a strategy in place, but we didn't have the right tools to create dashboards and powerful visualizations that were accessible to everyone in the organization.

Oakville's IT leadership has been dedicated to [Qlik](#) for many years. But the tool being used at the time, QlikView, was maintained, run, and developed by IT staff. When people needed information, they contacted a member of our small group to get a specific report. It was virtually impossible for everyday staff to use the application to develop their own insights. We needed a new solution that was easy to run and tailored for a wider pool of employees.

With the large number of data requests to my team, we needed a solution that would provide self-service business intelligence applications to give us the edge we needed. I had two goals at this point: I wanted to get a better understanding of dashboards and increase my knowledge regarding the capabilities, and I wanted to introduce other people in the organization to the power of dashboards. I also wanted to build awareness among internal staff so that they could understand what was missing.

The Move To Qlik Sense

Our IT director attended [QlikWorld](#) in Las Vegas a few years ago. At the conference, he became excited at what can be done with Qlik, and we were given direction to make Qlik Sense our default dashboarding tool.

I was happy to get some new direction that could solve our needs. I set out to explore Qlik Sense and found it to be even more intuitive than I could've hoped for. Before long, I happily moved my dashboards to the new application and began training our staff. After we were all familiar with the offerings, we began meeting with staff outside our group to tout the new capabilities.

Some of our first focus areas included Development Engineering and Building Services. After meeting with key staff within those groups, we began to receive regular requests for dashboards. They might ask us, for example, the number of saltwater pool permits issued in 2018. With Qlik Sense, we went from pulling this information for them to teaching them how to create and use dashboards to find the information themselves.

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In this respect, adopting Qlik Sense drove home the power of data literacy and self service. Business data has existed for centuries in various forms. In the last few decades, however, large companies have amassed huge data collection operations, all created and controlled by IT staff working separately. With applications like Qlik Sense, it is possible to see the importance of widespread and personal access to data. When people have the ability to create and use their own dashboards, it opens an entire world of self discovery.

Nearly every employee at every level of the organization has potential data questions that are relevant to their work. The ability to sit before a dashboard and play around with the raw information gives them the opportunity to ask questions that haven't been asked before. Teach them how to truly understand data, and they will eventually be able to create new dashboards and explore new data relationships.

As our initial departments got better at creating their own dashboards within Qlik, the requests to our unit dropped. That allowed us to interact with a new unit and create new dashboards for them. Then they would become competent and we could move on. This incremental approach to adapting data analysis allowed us to build a more mature operation.

Our incremental approach also allowed the value of data intelligence to spread faster than our program. That way, we did not have to start at the beginning with each new staff group. By the time we began meeting with them, they were already aware of how these new tools had helped other business units. We gave them time to develop dashboard envy.

The motivation for the transition came from within the group, instead of us trying to convince them this was a good idea.

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This was also necessary because part of data analysis maturity is understanding the importance of good data. The insights drawn from data are only as good as the information placed into the system. That means users have to practice self monitoring of the data input process so that the dashboards produce reliable information. While the data doesn't have to be perfect, everyone has to have a long-term commitment to data integrity and accuracy.

A key piece to our success was working with Ginqo Consulting, who is our Qlik Sense service provider. They ensured that our solutions were scalable, and provided us with a path to expand the use of Qlik tools within the Town.

In Support of Greater Data Maturity

On our way to becoming a data-mature organization, we have learned a few important things. For starters, it was critical for us that we had support from senior management. Our commissioner was very big on using data for proper decision making. That support trickled down through the levels of management and gave everyone a new appreciation for good data. I don't think we could have achieved what we already have without that top-level support.

In addition, I would say that it's important to identify a specific problem and address ways that data can help units solve that problem. By doing so, it's a lot easier to convince people that this tool will provide specific and meaningful assistance. For example, providing a visual map of open building permits had an immediate impact on the staff and citizens on the development taking place within the Town. They already had the numbers, but seeing a physical representation of the backlog drove them into action to find ways to reduce those numbers.

One of the most powerful outcomes we have noticed is that our information is no longer buried in the data. Now, people can see the information they need with the push of a few buttons. That had a profound impact on our management staff. The management within the Community Development Commission are now able to better manage the building inspections and permitting processes.

The dashboards allow them to quickly see how many inspections were done in each year. It also helped them to discover how many permits were issued in a given year, compared to how many permit applications were received—and the cause for any discrepancies between the numbers. For the first time in the town's history, our manager was able to discover a problem like this and drill down into the data to consider a number of solutions. That gives an unprecedented amount of power to managers who used to make decisions based on a gut feeling.

Going beyond Qlik Sense, we also want to use [Qlik GeoAnalytics](#) a lot more. Whenever we get requests, people always want to know the "where"; mapping visualizations answer these questions and help to create a better story of the data. We plan to take more advantage of maps within Qlik.

Better Data Insights for a Better Town

All of this is about much more than just teaching people to use a new program. We've given our employees the ability to develop their own insights.

We've seen people move beyond simple competence and towards a curiosity for new information.

We can work with that curiosity and provide instruction on how to develop the instincts to answer their own questions.

Managers now have the tools to better manage staff workloads and provide customer service based on proven information. That gives them greater credibility within the organization and allows them to make better decisions that impact Oakville.