

OTTAWA RAIL PROJECT: BUILDING TRUST THROUGH REAL-TIME ANALYTICS

**Kiewit**

It can be very exciting to consider the next 20 to 30 years of transportation expansion across growing regions worldwide. There are potential job increases, economic stability and the positive impact of connecting communities. But for those tasked with building the infrastructure this growth requires, it can also be daunting. The sheer complexity of project tasks — figuring out how to best communicate with stakeholders, successfully manage teams and keep up with often unpredictable supply chains, all while staying up to date with industry standards and regulations — means project leaders must navigate more details than ever before. The construction project management tools chosen for these complex builds can make the difference between project success or chaos. The Ottawa Rail (O-Train) expansion team knows this first-hand.

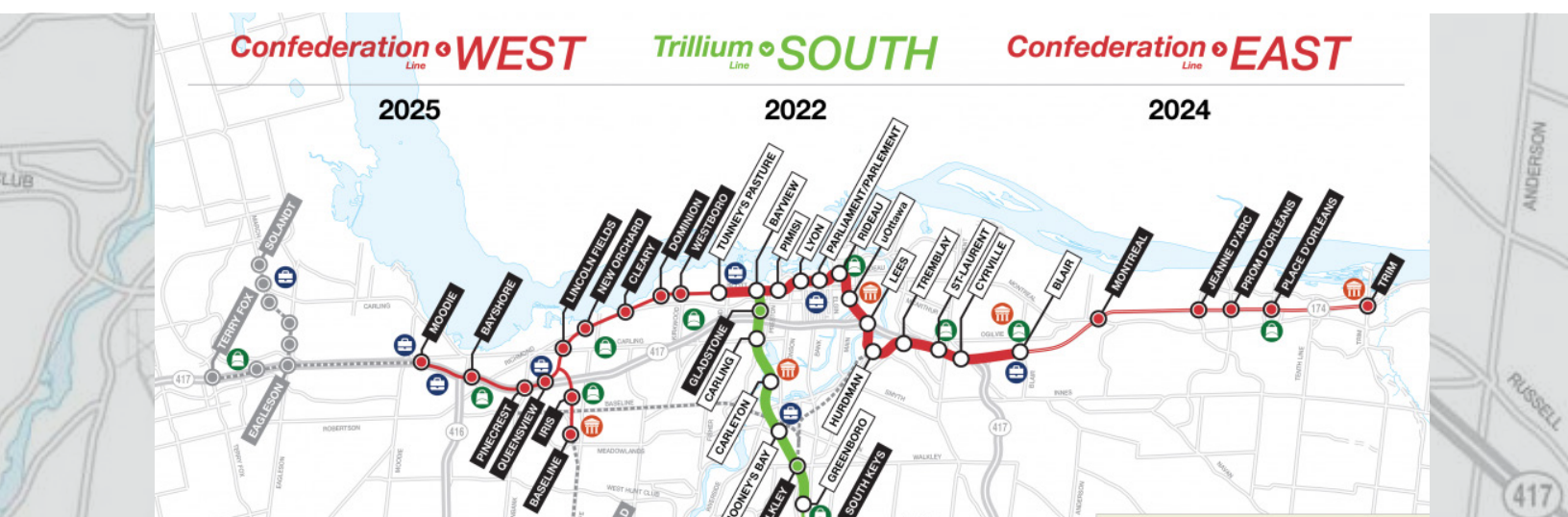
The east and west ends of the CA\$4.6B expansion, known officially as the Stage 2 LRT Project, are headed up by a partnership between one of North America's largest construction and engineering firms, Kiewit Corporation, and France-based construction company, Vinci Group. To say the project is infrastructure-heavy is an understatement. Requiring 150,000 cubes of concrete, 170,000 tons of asphalt and 30 kilometers of double-rail track, the plan calls for new stations, bridges and bridge rehabs, all completed in only five short years. This ambitious plan brings with it the needs of designers, engineers and contractors, plus the considerations of the O-Train's owner, the City of Ottawa, Canada.

That means managing not just thousands of tasks, but the input of hundreds of people all searching for the data they need in hundreds of reports. With the help of the InEight® Connected Analytics solution, the “O-Team” is now bringing together data from all teams to create a single source of truth, enhancing the user experience, increasing project transparency and improving outcomes for stakeholders across the board.

RECOGNIZING THE NEED FOR A CENTRALIZED SOLUTION

The pace of innovation increases with each passing year. Being prepared to succeed in an increasingly digital environment remains paramount. For Hussein Moustapha, cost engineer for Kiewit, being prepared is all about data control. “We have more than 25 disciplines on this project, and they were all working in their own formats,” he says. “There was no common hub to our data, no centralization. We realized the longer we allowed that situation to go on, the harder it would be to bring everybody into one single platform when they were searching for the truth.”

The issue of “truth” in communication loomed large for other reasons as well. First, using generic software like Microsoft Excel® for reporting required that each report have its own special fix when problems arose, which was often. “It’s like trying to use duct tape over and over,” Moustapha says. “It works in a pinch, but it’s really only temporary until the next issue arises.” The other problem was being able to accurately display the data in a digestible format. “Excel is a good way to store data, but it may not be the best way to display data or progress, or to create visuals,” he explains. “Let’s face it. Just because you can hammer a nail with a very sturdy phone case, doesn’t mean it’s the best tool for the job. It’s the same with software.”



“Let’s face it. Just because you can hammer a nail with a very sturdy phone case, doesn’t mean it’s the best tool for the job. It’s the same with software.”

Because of this, a solution specifically built to create the construction visuals they needed, and with many different stakeholders in mind, was put on their short list.

Catie Williams, InEight Connected Analytics product director and project lead working with Moustapha, explains

another issue, one that often happens to key pieces of data when people use different systems. “What if somebody needs that information on another project five, 10 or 15 years down the line?” she explains. “If each piece is stored locally in a folder on someone’s desktop, and then they move on to another project or to another role, it can easily get lost. This is one of the biggest limitations of point solutions.”

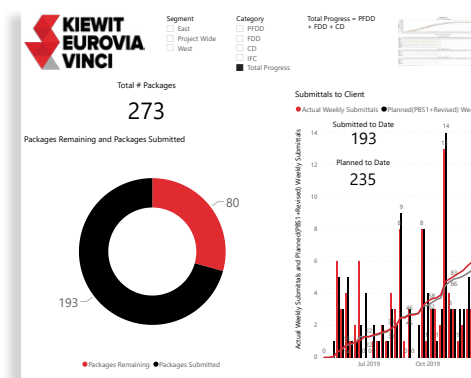
This meant any new solution would have to not only hold historical data securely, but in a centralized manner that would be immune to disruption from the normal shifts within such a large construction project.

BUILDING TRUST THROUGH DATA VISUALIZATION

Once the team chose InEight Connected Analytics, it was time to build up the new system and handle the various change management issues that would inevitably arise. As Moustapha points out, everybody has a tendency to get set in their ways and comfortable with the way things are done. “But then you tell them that in an evolving world, you need to be able to access data much, much faster, and then you show them how,” he says. “Only then is it real for them.”

That “show” is done by actually visualizing the data at hand, meaning a healthy amount of back and forth with stakeholders.

“I ask each person ‘what do you need to track, why is it important to track that, and how do you track it? Oh, you track it with Excel? Okay, that’s good. What about when you need to display your information? Do you build a report? How do you share it? Does it take a lot of time?’” Moustapha explains. Once he establishes what each person needs, he suggests a slightly different way to handle those needs within the new system that will eliminate a lot of double reporting and double effort.



All those questions help build trust and personal investment, making the adoption of the new system much faster, easier and more lasting. The data visualizations also lend a lot of credibility to the dashboard for all the stakeholders, according to Moustapha. “They like the pie charts, the tables, the cumulative graphs and the percentages complete,” he says. “It’s all in real time, on a live data feed, with minimal work. They really enjoy all of that and can see the benefit.”

Williams notes that in her experience with change management, trust is usually the biggest issue. Because Moustapha’s approach is to take what the team already uses and then help them discover for themselves how to look at it in a more effective way, the normal barriers of resistance are broken down much faster. “No one is saying ‘I still need my spreadsheet to validate against my numbers’ because they know that they’re being included along the entire process. The transparency of Connected Analytics is very reassuring.”

“No one is saying ‘I still need my spreadsheet to validate against my numbers’ because they know that they’re being included along the entire process. The transparency of Connected Analytics is very reassuring.”

DASHBOARDS FOR THE PEOPLE

Data dashboards are great. But you can’t build a useful one if you don’t understand it — or don’t want to. “I think the biggest barrier to creating a great dashboard is that people see data as frightening, even overwhelming,” Moustapha says. “There’s this huge table with characters and numbers. Nobody wants to look at it. So, it’s our job to make the data talk.” It’s this “talking” aspect, combined with building trust, that seems to be the key to



Artistic representation of the Place D'Orleans Station design

getting full buy-in from all stakeholders. “We show them that by creating dashboards, by customizing them, the entire project team will experience a level of security in the data feeding into the dashboards that you just can’t get with Excel spreadsheets.”

Because the data that feeds the visuals for the dashboards is provided by the data owners and the experts in the field, there’s also no doubt about the data being true. “It’s accurate and it’s displayed the way it should be, stored the way it should be, in a rolling process straight from them,” Moustapha says. And because of InEight’s integration with Microsoft, his team is also able to export data from Power BI®, dive right in, and look at the raw data to verify that it is accurate.

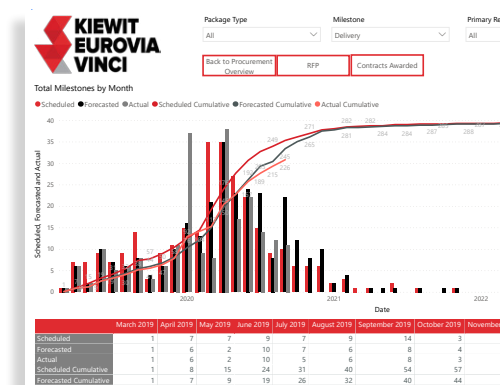
The ability to centralize everything into one single platform is an additional aspect of the InEight dashboards that everyone on the team really likes. “Basically, if you need the truth, whether you’re an office, cost or field engineer, or commercial manager, as long as your data is stored properly, you’re able to see it at the level you need, when you need it,” Moustapha says.

One unexpected advantage for the team? The dashboards seem to be very good for building in-house expertise — expertise that’s empowering not only for projects, but for lives and careers. Moustapha explains it like this: “You build a dashboard and then you show it to everybody. And they see that it’s really cool. And suddenly, they want a page on the dashboard, too. But it goes beyond that. It’s all about educating your people and building that trust and expertise along the way.”

THE SUCCESS IN SAVING TIME

There are many ways to measure success. While it’s easy to look at such metrics in terms of profits or cost savings on material goods, when it comes to construction, it’s also about saving time. The dashboards figure heavily into this benefit as well.

“Let’s say a safety manager needs to see the safety metrics and know in real time what’s happening,” Moustapha explains. “Now they just go to the InEight project dashboard, and right away they’re able to associate something that happened in safety to an environmentally related incident.” And, as users of the InEight® Document solution, Moustapha’s team will have another system at its disposal for automatic reporting.



“We were wasting so much time on repetitive tasks. With the InEight dashboard, people can literally get some of their lives back.”

Saving time applies to the ability to pull reports as well. “We are able to see over 30 types of forms on the project and where they stand along the flow,” Moustapha says. These include procurement service reports which previously had to be pulled manually. “Every week one of our team members would sit and do it. It was part of his job that took up hours,” Moustapha explains, “Now it’s just a click on the dashboard and it’s done.” Another team member in project controls was spending four hours of his Sunday every week pulling up an engineering service during

construction report. “We were wasting so much time on repetitive tasks. With the InEight dashboard, people can literally get some of their lives back.”

Williams agrees and adds that this reclamation of time creates a positive ripple effect. “So if one person saves four hours, and another person creating a PowerPoint® saves two, and another reformatting a file saves even one hour — with hundreds of people over years of a project, it’s easy to see how it all starts to add up to huge chunks of time,” she says.

Are you ready
to build trust in
your project with
real-time data?

**LEARN
MORE**

BIG PROJECT WINS, SMALL PROJECT CONFIDENCE

As the Stage 2 LRT Project continues down each phase of construction, Moustapha looks forward to what lies ahead due to the flexibility of their Connected Analytics solution that adapts as the project adapts. But what about smaller projects? After all, not everything will

Artistic representation of the
light rail transit station



be a multi-billion-dollar proposition. Moustapha believes that because theirs is a mega project with so many disciplines, it has helped set a precedent for building better reports for any size venture. “I believe everything we do here can be leveraged to any size project,” he says. “Because if we can do it on something this massive, there’s absolutely no reason why it can’t be done on something smaller, and perhaps in an even smoother, faster fashion.”

What would things look like if they didn’t have InEight’s Connected Analytic solution? “I don’t like to think about what would’ve happened if we hadn’t started this whole process,” Moustapha says. “We were a year into the project and still didn’t have a way to centralize information. When I look back, it seems crazy compared to how things are now.” Down the road, he and his team plan on using the solution for benchmarking as well. “We’re going to see where we’re headed and if we’re doing well. And then in 20 years, we’re going to use it as benchmarking for many other projects.”

“Just keep in mind that it’s an iterative process. It takes time to implement in the minds of the people who are going to be using it. Take a breath and relax because whatever happens, InEight’s got you.”

Asked what advice he would give to somebody else looking at Connected Analytics, he smiles. “At the beginning I was really frying up the data,” he says. “Just keep in mind that it’s an iterative process. It takes time to implement in the minds of the people who are going to be using it. Take a breath and relax because whatever happens, InEight’s got you.”

About InEight

InEight provides field-tested project management software for the owners, contractors, engineers and architects who are building the world around us. Over 300,000 users and more than 750 customers worldwide rely on InEight for real-time insights that help manage risk and keep projects on schedule and under budget across the entire life cycle. From pre-planning to design, from estimating to scheduling, and from field execution to turnover, InEight has powered more than \$400 billion in projects globally across infrastructure, public sector, energy and power, oil, gas and chemical, mining, and commercial. For more information, visit [InEight.com](https://ineight.com).