

Helping Bell Canada Transform Their Network with an Enterprise Geospatial Data Platform

CGI scales a minimum viable product to an enterprise-wide data platform via an agile, low-code approach

Canada's largest communications company, Bell Canada (Bell), leads the industry in providing world-class services to consumers and businesses across the country. Residential services include fiber-based TV and Internet, connected home, home phone and national wireless, while its wide range of business communications services extend to data hosting and cloud computing. Bell also operates an extensive network of retail outlets across Canada.

To deliver the next generation services its customers demand, Bell invests heavily in research and development to advance its network infrastructure and design innovative solutions. With 22 million subscribers, multiple business segments and more than 60,000 employees, Bell operations generate massive volumes of data. The company is constantly seeking ways to better use that data to support effective broadband network investments, ongoing service improvements and efficient operations.



Collaboration, visualization and analytics for **better planning**

As a longstanding consulting and IT services provider to Bell with extensive knowledge of its operations and goals, CGI recommended use of data visualization and geospatial technologies to increase the effectiveness of Bell's network planning process. Initially rolled out as a proof of concept several years ago, the initiative has evolved into an enterprise-wide geospatial data platform that is helping Bell to unlock powerful data insights for network planning, analytics and much more.

In managing its extensive optical fiber and legacy copper network, Bell relies on its network planners to advise where to install new infrastructure or upgrade existing network and capacity to better serve both current and new customers. Network planners require access to specific data assets (e.g., fibers, interfaces, terminals and poles) to optimize their recommendations. Effective network investment planning also requires integrating network inventory data with data from external sources, such as information about new residential developments and municipal infrastructure programs. In planning, Bell also wishes to take advantage of opportunities when municipalities dig for water or sewer lines to pass conduits and lay fiber cables underground, as it may take up to 10 years before some municipalities allow digging again.

Prior to the geospatial data platform initiative, most network planning activities were carried out autonomously, with little consultation between the planners responsible for different geographies. Additionally, planners often used manual, paper-based processes, making it difficult to analyze multiple data sources or share information with one another.

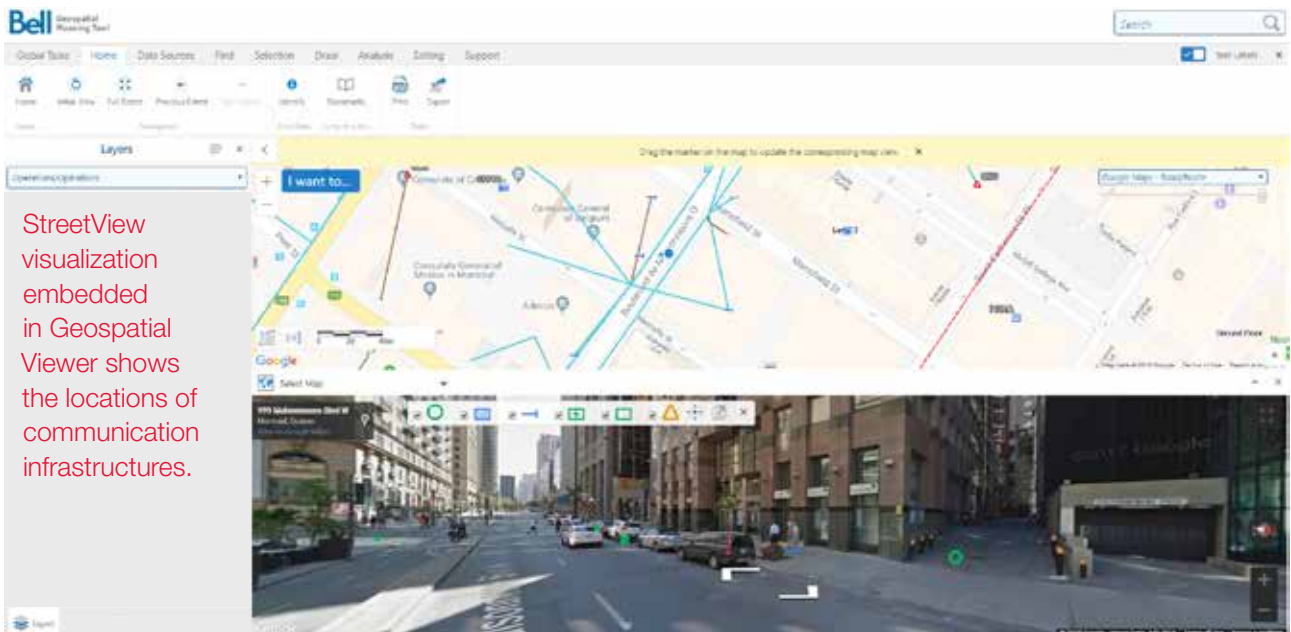
Bell needed a way to make the data accessible via a web application so planners could better collaborate. In addition, they aimed to make it easier for planners to visualize and analyze large amounts of complex data.



New geospatial capabilities make **immediate impact**

CGI worked with Bell to rapidly deliver the new collaboration and visualization platform proof of concept using a low-code approach, agile methods and continuous delivery mind-set, completing the initial version in just four weeks.

The minimum viable product (MVP) was created using commercially available technologies, Bell data assets and data services from geospatial data leaders such as ESRI and Google. It allowed multiple layers of data such as areas of interest, fiber segments and engineering components to be viewed, searched, visualized and printed in support of network planning activities.



Scaling from **MVP to enterprise-wide**

CGI evolved the platform through agile sprint deliveries with a continuous improvement approach to include more data sources, functionality and mobile capabilities. Bell quickly recognized the value such a solution could deliver to other areas of the business. Word spread quickly as more data was integrated from across Bell's production environments, leading to a queue of additional business domains wanting to use the platform.

Requests were prioritized and CGI began training additional Bell resources on how to configure the low-code platform to meet unique business needs. A key advantage of the platform was its ability to accommodate additional use cases very rapidly, scaling well to meet new needs. As a result, Bell decided to forego a planned enterprise data warehouse investment and instead use the CGI solution as the enterprise geospatial data platform.

“ [CGI’s] commitment and passion toward finding efficient, effective and out-of-the-box ways to deliver solutions ... throughout our project is worthy of praise.”

Bell Product Owner

Today, more than 225 layers of spatial data are housed within the platform’s data warehouse and refreshed periodically, with new layers added during each sprint. The geospatial platform ecosystem is responsive to any data need, including the ability to upload data on the fly for specific analytical needs.

By harnessing the power of spatial data to support its continued business optimization and growth objectives, the platform helps Bell advance toward its goal to be recognized as Canada’s leading communications company.

Improving service, analyzing network capabilities and enhancing technician productivity

Since the original MVP, use of the geospatial platform has expanded, and the solution stands today as an enterprise-wide platform used across many Bell sectors. With a company as large and diversified as Bell, the ability to integrate data from discrete business organizations (e.g., mobility, network, retail) provides a competitive advantage. The company has harnessed the power of spatial data to support diverse business challenges, including:

- Network traffic analytics to optimize the quality of experience
- Network diversity business rules to improve service reliability
- Analytics to evaluate equipment impact in flood conditions
- Strategic planning layers showing the state of the ongoing network builds
- Rapidly qualifying communities for the Connect to Innovate Canada funding program
- Quickly assessing wireless Internet targeted communities
- Creation of thematic coverage maps to show what bandwidth is available at each serviced address as an extension of the Bell Big Data Initiative
- Lightweight mobile application access for field technicians to the complete network map
- Field technician tracking (location in real time) and equipment placement



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