

Improving fiber network rollout

| Bell Canada | *Canada*

Bell Canada is a major telecommunications company in Canada. It offers a broad range of wireline and wireless communication services, including television, high-speed internet, residential telephone services and large enterprise data services. In response to increasing customer expectations for faster internet, Bell has invested hundreds of millions of dollars annually upgrading its fiber infrastructure.

However, as the fiber rollout increased, legacy systems and practices failed to keep pace with demand. Designers worked with a number of local computer-aided design tools and needed to recreate as-built plans in the GIS, which introduced delays in updating engineering records.

Subsequent changes to design records required designers to redraw the network, leading to significant effort and delays. There was a resulting lack of integration with

back-office systems, such as SAP and Assignment, which required further updates.

Leveraging the fiber network model

Bell needed to reduce these inefficiencies in its fiber network design and provisioning process. A Hexagon customer since 2000, Bell uses its network model management software to maintain a definitive source of reliable, location-based information describing its networks and their connectivity. With this software, the company can manage the complete engineering lifecycle of its networks, as well as aerial and underground infrastructure.

Needing to leverage this infrastructure information for its massive fiber deployments, Bell added HxGN NetWorks



Comms, Hexagon's advanced telecommunications GIS. Since making the move, Bell has improved the productivity of its 550 concurrent users by automating critical design steps and reducing redundant data entry.

Data integrity and access have also improved, including design consistency and downstream data integration. Overall, Bell has shortened its fiber deployment cycle, which allows faster expansion into new service territory.

"The whole process is shorter," said Daniel Proulx, senior technical architect for Bell Canada. "This allows the network manager to deploy the fiber network quicker, so we can cover our areas quicker, and get the customer onboard as quickly as possible and stay ahead of the competition."

Automating the design process

A key component of the system enables rapid, automated fiber design with minimal user interaction. Bell worked with Hexagon to add this additional capability to the solution. Leveraging the landbase and GPS-located structures to define available paths, the solution optimizes the placement of features and allocation of fiber.

"It allows us to reduce the number of handoffs," said Proulx. "In the process of network design and deployment, the less handoffs you have, the better."

The tool also allows users to build a raw design based on existing infrastructure, along either an aerial or cable conduit path. Users can place fiber terminals, and once

the terminals are properly set, the system performs automatic fiber allocations. Hexagon's solution applies engineering design rules to ensure users follow business practices, size cables and equipment correctly and minimize wasted fiber.

"Once a design is done or the cable automatically drawn, you can generate all sorts of reports," said Proulx. "You can determine the cable size and length. You can easily generate detail specification of the splicing configuration for the outside technician who will build the network."

Users can perform alternate designs, such as changing source or branch locations. They can also adjust the sizing and location of the load or add dedicated space for future development. The system then recalculates the sizing and assignment automatically without redrawing the whole network. By automating tedious tasks, it shortens design work by several hours.

Improving industry competitiveness

By reducing the time from network design to provisioned service, Bell can deliver high-speed internet access to customers more quickly and improve its competitiveness.

"The demand for faster networks is definitely a major trend these days, so Bell Canada will stand out in this industry if it can deploy the fiber network quickly in all types of areas," said Proulx. "We're confident that with these Hexagon tools, the user will be able to do better, more efficient and quicker designs."



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Daniel Proulx

Senior technical architect
Bell Canada

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