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CASE STUDY: ENGINEERING/CONSULTING

MORRISON HERSHFIELD DEPLOYS FAST PRIMUS FIBRE TO SUPPORT TODAY'S APPS – AND THOSE OF THE FUTURE

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SUMMARY

Region: Canada

Industry: Engineering

Locations: Victoria, Vancouver, and Nanaimo, BC; Calgary and Edmonton, AB; Winnipeg, MB; Burlington, Toronto, and Ottawa, ON; Whitehorse, YT; and St. John's, NF

Employees: 750

Business Challenges: needed faster bandwidth and improved upload speed

Solution: 10 and 30 Mbps symmetrical Primus Fibre Internet service

Key Results:

- Improved application performance through fast fibre connectivity
- Reliable network redundancy
- Reduced user calls to IT and reduced IT network maintenance time
- Future proofed the access network with Internet redundancy to support transition to cloud computing

BACKGROUND

Established in Toronto in 1946, Morrison Hershfield is an employee-owned engineering consultancy that provides integrated infrastructure solutions for civil engineering, buildings, land development, and for the telecom, pharmaceutical, energy, transit, water, and environmental sectors. Over time, the firm has transitioned from crafting specialized projects for customers in these areas to delivering comprehensive, multi-disciplinary services for large developments. In this work, Morrison Hershfield is able to draw on the specialist expertise of approximately 750 engineering practitioners from 17 offices across North America that each focus on a particular discipline.

BUSINESS CHALLENGE

While Morrison Hershfield relies on the participation of different groups in fulfilling client needs, the distributed nature of its operation means that support for collaboration between team members, customers, and suppliers is a critical business requirement. In order to maintain high availability in its telecommunications infrastructure, the firm has maintained two links at each of its office locations: a private MPLS network for internal, corporate communications, and a local Internet connection for public-facing applications and activities. According to Peter Jevnisek, telecommunications specialist & assistant manager, IT services, Morrison Hershfield: "we have had this architecture for a number of years now, and generally the requirement for the Internet links is such that we have been able to use lower cost access solutions such as ADSL or cable, which are generally not managed, to keep our costs down."

However, the company was either unable to access ADSL or cable feeds and speeds in some locations – or Jevnisek noted, "more often than not, speeds were simply no longer adequate." While bandwidth requirements vary with Morrison Hershfield office size, in many locations, the firm was limited to 1 Megabit of upload speed. To address this issue, the IT team initially tried deploying two ADSL connections at a particular office location to achieve

adequate performance, but as Jevnisek explained, "even with two combined, at 2 Megabits, it simply was not enough."

Morrison Hershfield hosts most of its corporate IT services internally out of two data centres, located in Toronto and Vancouver, which run the company's email system, its DST ERP system, a SharePoint knowledge portal site, its file storage network access system, contact centre, and Microsoft Lync unified communications, including desktop sharing, presence, telephone, text, video capabilities, supported by the private MPLS WAN. Internet service, which is delivered through local providers, is for public access, such as Google search, or communication back and forth between firm clients and employees. The Internet link also serves as a backup for the MPLS to provide redundancy – the need to ensure uninterrupted business operation served as another driver for procurement of a service that could deliver fast upload speeds.

For Morrison Hershfield, ensuring network capacity for future use was another concern. Though the company is not now using cloud computing services, it expects to do so in the near term and wished to have the necessary bandwidth to support this transition. "Traditionally, a lot of data has been consumed on download, and less on upload at the regional offices," Jevnisek explained, "but there is a shift with services offered in the cloud as there will be more data going out. We wanted to be prepared for that."

THE SOLUTION

A One option for Morrison Hershfield was a managed Internet solution (offered by Canadian telecom incumbents), but the firm was reluctant to pay the premium associated with a managed solution. In contrast, Primus offered a "good price point for the same bandwidth and in that sense was a good fit," Jevnisek explained. Morrison Hershfield evaluates deployment options at each of its locations on a case-by-case basis, taking into account the office size and connectivity requirements, as well as local supply: "we generally try to stick to lower cost solutions for our Internet service as it is a lower priority. If we happen to lose connectivity to the Internet locally, we are able to automatically reroute and redirect across the MPLS, so the requirement for that to be high availability is less." While fibre is often more expensive than other access solutions, Jevnisek noted that Primus was able to provide the service at a competitive rate. In addition, Primus was present in many of the areas for which the firm will look to source faster speed fibre service: "we didn't want to go with a provider that could only deliver in one or two locations. We were looking for a long-term partner."

Morrison Hershfield's move to a 10 Megabit fibre service from Primus for its Ottawa and Calgary locations and to a 30 Megabit service for the Toronto office delivered an immediate and "significant boost to available bandwidth," Jevnisek stated. Going forward, the firm will consider additional fibre roll out and has the Edmonton office, which currently runs on a 1 Megabit ADSL service, in its sights as the next upgrade location.

For Morrison Hershfield, the transition to fibre was a relatively straightforward process. Jevnisek, who was project lead on the installations, especially appreciated Primus' two-page contract, which set the tone for simple and efficient interchange on service delivery dates and onsite details, and for continuity in technical support: "I was quite impressed with how smoothly the process went. The communication was clear throughout, I had a single point of contact that I could reach out to, and the response was always timely. I deal with telecommunications companies all the time, and I would say that Primus was certainly one of the best, if not the smoothest experience. I was quite pleased with how things went."

Primus delivered the fibre service "exactly where we needed it," Jevnisek explained – straight to the server room in each office location, managing all linkages on the backend and installing a hardware switch on the rack that Morrison Hershfield simply connected into. Since the offices already had Internet service, there was no need to create backup infrastructure in case of failure during the switchover to fibre. "All we needed to do when the link was ready was plug in, reconfigure the router, and we were up and running," according to Jevnisek. This process typically involved five minutes of downtime, which was not experienced by users as the IT team redirected Internet traffic to the MPLS link for the duration of testing and migration of traffic to the new link. Jevnisek described the process as seamless: "It was as if nothing happened."

KEY OUTCOMES

Fast fibre supports improved application performance

Moving from the old ADSL or cable connections to the fibre service, Morrison Hershfield experienced an immediate performance boost. Since performance varies from application to application depending on bandwidth intensity, the IT team did not capture metrics that would offer a generalized 'before and after' picture that could quantify the benefits of fibre implementation. However, Jevnisek pointed to specific examples of improvement, such as the instant delivery of speedier access to certain websites which

pre-fibre had taken time to resolve when lines were congested. Upload speeds also improved as the firm's bandwidth increased tenfold in Calgary and Ottawa, and even more so in Toronto. According to Jevnisek, "the amount of time it takes to upload files to our client sites is now a fraction of what it used to take, and because uploading no longer congests the links, it's possible to maintain the browser experience for other users."

Service reliability reduces IT maintenance requirements

The fibre service is also proving its reliability. As Jevnisek explained, ADSL is prone to instability with higher packet loss, and the IT team found it needed from time to time to reboot equipment to restore service: "but with fibre you don't have to do that. It's quite reliable and we haven't had any issues with fibre in the offices where we have installed it." Service reliability has translated into a decrease in trouble tickets, particularly in Calgary, where prior to fibre implementation there were many calls to IT from the user base. At that location, the IT team tried using networking hardware to manage traffic flow and assign priority to certain different applications, but "we were wasting our time," Jevnisek observed. "It was time consuming working with a link that really didn't have enough bandwidth. Once we upgraded, all of that went away."

Fibre a critical input to cloud future proofing

Morrison Hershfield is currently looking into deployment of Office 365, Microsoft's cloud-based user productivity suite, as a migration path from Office 2013. The firm is also considering implementation of a cloud solution for file backup which will require a fair bit of upload bandwidth. Currently, backup files travel to the Toronto data centre and are replicated at the Vancouver site for disaster recovery. The solution that the firm is now evaluating backs up to the cloud, which means that traffic would travel via the Internet, as opposed to the firm's more costly MPLS link. Jevnisek concluded: "we are now prepared for that. We are future proofed and better able to take advantage of cloud services. The access networks are the key and critical piece of infrastructure in moving to the cloud. This is where you will now want Internet redundancy because if you lose that communications link, you're dead in the water."