



HYDRO ONE MODERNIZES ITS IT INFRASTRUCTURE TO MEET MARKET DEMANDS

Technology increases agility to meet changing customer and regulator demands

Hydro One is the primary electricity transmission and distribution utility serving Ontario. In 2020, the company invested approximately \$1.9 billion in its transmission and distribution networks and its 8,700 skilled employees serve nearly 1.4 million residential, business, and industrial customers from Toronto to Hudson Bay.

Market disruptions drive change

Hydro One must meet stringent reliability targets while also ensuring its portion of the bill remains low, all while operating models for utilities are becoming more complex, with a growing number of energy sources, a greater frequency of weather events, security concerns, and an increased emphasis on customer service.

The company's data centres are mission critical and vital to the continuity of daily business operations.

To help achieve its business objectives, Hydro One invested in newer technologies, software solutions, and IT-process improvements. Technologies such as virtualization and automation were used to drive flexibility, scalability, and agility. This helped Hydro One address the recurring operating expenditures (OPEX) of its aging core of IT assets and also prepare for a pending IT refresh.

Switching on IT transformation

Hydro One decided to take steps to transform its IT infrastructure and processes. Leadership chose to optimize outcomes in four key areas.

- IT and process visibility: Hydro One wanted a clearer picture of its IT infrastructure and how its performance affects business operations.
- IT and process costs: It also needed to minimize operational costs to keep costs down and demonstrate those savings to its regulator.
- Customer service: The goal was to offer exceptional service at the best value for both internal and external customers.
- Increased agility and reliability: The company wanted an IT infrastructure that would provide the foundation for growth.

Hydro One engaged longstanding technology partners Capgemini and Inergi (a Capgemini company) to move its IT infrastructure onto a private cloud. The complex project included the migration of over 1,000 virtual servers to new hardware and software platforms and upgrading four critical business applications: SAP, iHUB, Tivoli, and Itron. The result would reduce the overall legacy footprint as well as operating costs. VMware, Oracle, and HPE were chosen as technology partners to help deliver the migration.

Working with Capgemini, Hydro One built a roadmap for standardized, uniform IT with all of the latest software and applications. The goal was to create a hardware foundation that provided the agility to expand and contract as IT needed while realizing savings for support costs. To do this, a vendor-validated reference architecture and a new composable infrastructure, which improved the organization's operational capabilities, were implemented.

Re-platforming SAP for the future

SAP is the heart of the Hydro One business landscape, supporting all its core business processes including HR, supply chain, customer service, and finance. Hydro One relies on 23 SAP components across its business. The landscape was stable and performed adequately but its age meant it lacked agility and visibility, operating costs were rising, and its infrastructure had end-of-life issues. In addition, an exponential increase in data stored meant the existing environment was approaching capacity and led to performance bottlenecks and difficulties spinning up new project environments. With an ever-increasing amount of data and growing complexity, moving SAP into a new infrastructure was the best way forward. The platform is based on an innovative composable infrastructure technology from HPE based on the latest scalable processors from Intel to ensure future growth and scalability.

VMware, the visualization provider for SAP, supplied the capability and flexibility to manage the change. The initial plan was for the implementation team to gather at a central site but the pandemic forced a change. Capgemini's global team – alongside the local team in Toronto – achieved the complex migration working remotely without issue or disruption to Hydro One employees. More than 50 links to external systems were reconnected to SAP once the system was moved to new virtualized hardware standardized on the Linux operating system. The result was an increase in availability and performance.

The new platform means the infrastructure is ready for automation, which will reduce the involvement of the technical team by leveraging new technologies. Now, Hydro One has a single pane of glass to monitor the new data centre using a VMware platform support approach and tools which work on any device and format, enabling new application topology and reach.

Preparing for a move to the cloud

The migration of Hydro One's environment to a flexible and much more cost-effective, virtualized environment lays the groundwork for the next step of moving to a public cloud in the near future. Even before the move, it is already delivering benefits. The company's core processes of finance, human resources, supply-chain management, field services, and customer service are now on virtual environments.

The move to the private cloud has significantly lowered operating costs. Hydro One built its business case on support-cost savings since the modernized IT environment is much easier to manage with a single view into all areas of the business. And the IT foundation has the ability to add new technologies such as automation to the ecosystem with no disruption.

In addition, the Hydro One and Capgemini teams successfully moved to the new IT infrastructure in August 2020 with team members scattered around the globe. Once again, the original plan was to assemble the group, but pandemic restrictions meant team members worked from home. Even with everyone operating remotely, the infrastructure implementation happened over a long

weekend and business continuity was managed successfully.

Technologies alone did not meet the need, and Capgemini implemented organizational change management to drive the process forward. The holistic solution has delivered:

- A new and intelligent composable infrastructure that enables fluid pools of physical and virtual compute, storage, and resources to be composted into any configuration for any workload
- Increased reliability means less impacts on customers
- Financial predictability with the retirement of legacy systems and lower operational costs.

The result is an agile, modern, and supportable IT transformation delivering support-cost savings and improved predictability. By moving away from a monolithic model, Hydro One has created a standardized, scalable infrastructure. When the move to the cloud happens, the organization can reuse its existing environment to run other applications if needed. It gives Hydro One the ability to grow both vertically and horizontally easily on a strong technology foundation.



As we execute on our strategy at Hydro One to become the safest and most efficient utility, we are excited about the new collaborative IT partnership that we have formed with Capgemini. Our new model will enable improved business outcomes with enabling technology and drive cost reductions in IT operations. We are excited to have a global partner in Capgemini who will work with us as a strategic partner to continue to transform our IT capabilities to deliver ever-increasing business value."

Brad Bowness,
Chief Information
Officer,
Hydro One



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For more information, please contact:

Tom Mosseau
Vice President and Utilities Lead
Capgemini Canada
tom.mosseau@capgemini.com