

## **Network Infrastructure Project Overview**

### **Introduction**

The Network Infrastructure is comprised of technical components such as routers and switches that interconnect computers and applications across the Company. These components all work together to enable the transport and sharing of SCADA data, VHF radio, and corporate data between the Company's computers across the province. For example, serving customers in Corner Brook requires Customer Service System information to be transmitted from St. John's over the network infrastructure to a cashier's personal computer in Corner Brook. Appendix A contains an explanation of the role of network infrastructure components in the information technology environment at Newfoundland Power.

The purpose of this project is to replace aging components of the Company's corporate network infrastructure that have become obsolete. KPMG Consulting states, "Computer and network hardware (e.g., computers, printers, routers, bridges) typically have a life cycle of two to five years."<sup>1</sup> The average age of all network components being replaced through this project is six years.

The network components that will be replaced in 2003 and 2004 are considered to be obsolete, either for technical or functional reasons. Technical obsolescence occurs when a technology component becomes either outdated or unreliable, or when the vendor that developed the component no longer supports it. Functional obsolescence occurs when the business requirements of a system change to the point where the system is incapable of providing the required functionality.

The Company's network across the province contains components that are no longer manufactured. Vendor support for these components is also in decline.

- Fourteen of these components are Motorola 6520 routers that are currently six years old. These routers are no longer manufactured and vendor support is diminished.
- Two Nortel phone switches and a Redcom radio switch are twelve years old and are no longer supported by the manufacturer.

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<sup>1</sup> KPMG Consulting provides business consulting and systems integration to companies and government organizations. They have approximately 16,000 professionals in 39 countries with an average of 12 years of industry-specific experience. They access the latest technology information through nearly 50 alliances with leading software and hardware companies.

Within St. John's, the network components have become outdated and do not provide the capacity to connect additional shared servers to the corporate network.

- Two Cisco 5509 routers currently connect the Company's Head Office on Kenmount Road to the Duffy Place office. These components are currently three years old and will no longer have sufficient capacity to connect shared servers to the Company's network.

### **Alternatives**

The Company considered two alternatives when assessing options for moving forward with this initiative:

- 1) Continue to operate the existing components in the corporate network, and;
- 2) Replace the network components with vendor-supported components with increased capacity for future growth.

Continuing to operate with the existing components would put the normal operation of the Company's network infrastructure at an unacceptable level of risk. Should the network infrastructure fail, the Company's ability to serve customers and to monitor and control the electrical distribution system would be diminished. Vendors no longer manufacture many of these components and technical support for them is decreasing. Also, many of the components no longer have sufficient capacity to meet the requirements of the Company's applications. Replacing the network components with vendor-supported components will eliminate reliance on obsolete technology and provide capacity to connect shared servers in the future.

### **Benefits**

The benefits of replacing the existing network components include:

- Eliminates the Company's dependence on technology that is no longer manufactured.
- Reduces the risk of a network failure associated with our reliance on network components for which vendor support is in decline.
- Provides additional capacity to connect shared servers to the corporate network in the future.
- Provides flexibility to take advantage of advanced telecommunications technology.
- Reduces training requirements for internal staff due to the standardization of networking components across the province.
- Increases our ability to remotely monitor and administer network components across the province from a central location.
- Reduces the number of spare parts needed to support the corporate network.
- Reduces the risk of future obsolescence by aligning with a market-leading vendor.

## Costs

<b>Replacement of Obsolete Network Components</b> <b>(\$000s)</b>			
<b>Description</b>	<b>2003 Project Costs</b>	<b>2004 Project Costs</b>	<b>Total</b>
Internal Labour	36	28	64
Hardware	431	277	708
Implementation Services	75	-	75
<b>Total</b>	<b>542</b>	<b>305</b>	<b>847</b>

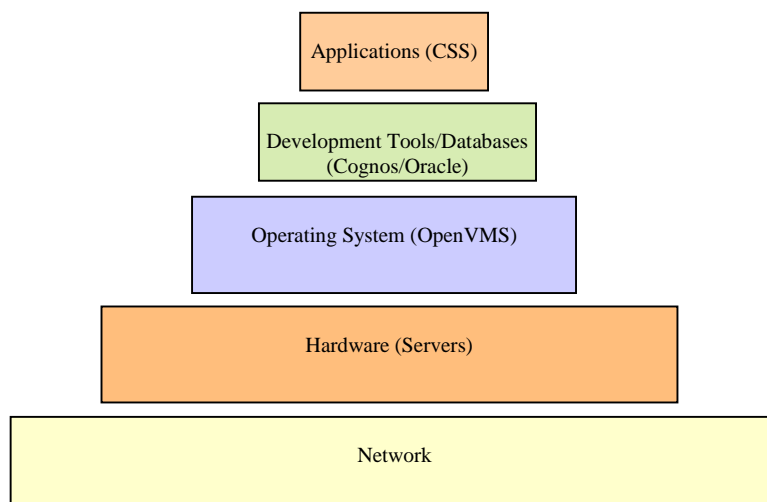
The capital cost of replacing network components is estimated at \$847,000 over a two-year period, with ongoing operating costs estimated to remain at existing levels of \$54,000 annually.

## Summary

The corporate network is the foundation for the operation of such critical applications as the Customer Service System and the Problem Call Logging System. The Company's continued use of obsolete network components exposes these applications to an unacceptable risk of disruption. The replacement of the obsolete network components will ensure the continued stability of the corporate network, thereby avoiding disruptions to customer service and the interruption of critical communications. The purchase of these components will be tendered in order to ensure they are obtained at least cost.

## **A Simplified Explanation of the Information Technology Environment at Newfoundland Power**

Newfoundland Power has many different pieces of equipment and software applications that together form the computer environment by which Newfoundland Power serves customers, maintains reliability, and operates efficiently. The overall structure of the technology components is complex and inter-dependent, and can be simply described using the following pyramid:



The example of customer service can be used to illustrate the interdependency between the technology components at Newfoundland Power. Newfoundland Power's Customer Service System is a central tool used by employees to provide service to customers. It contains real time information on all customers' accounts.

The Customer Service System application was written using Cognos technology development tools and an Oracle database. This application and database resides on the OpenVMS operating system that is installed on server hardware. Contact Centre agents access the application and database on a real time basis via the Company's network from across the province. In order to provide an appropriate level of service to customers using the Customer Service System province wide, all network components must be reliable and functioning properly.

The network's level of criticality to other applications (such as the System Control and Data Acquisition (SCADA) system used to operate electrical assets) is similar to its criticality to the Customer Service System.

The network is the communications backbone of the information technology environment at Newfoundland Power. It effectively enables uniform quality of service standards across the Company's service territory.