"Rather than being overwhelmed by all there is to do at Te Papa, visitors using our intranet can make informed choices based on what interests them most."
Richard Hinderwell

Te Papa

Location
Wellington, New Zealand

Needs
Advanced multimedia network to provide museum visitors of all ages with an enriched, interactive experience

Applications
Real-time audiovisual streaming, multimedia intranet and collections database, information kiosks, Internet, e-mail, office services

Key 3Com Products
CoreBuilder™ 7000HD (high density) ATM switches
SuperStack® II Switch 1000 Ethernet switches
CELLplex 4000 ATM switch
Transcend® Enterprise Manager network management software

New Zealand Launches Museum of Future Using Converged ATM Network from 3Com®

For the more than one million people who have walked through the doors of The Museum of New Zealand Te Papa Tongarewa since it opened in February 1998, the word "museum" will never be the same. Created to provide New Zealanders with a forum for understanding and exploring their natural and cultural heritage, the Wellington-based museum employs a variety of advanced multimedia applications to captivate visitors of every age and background. By converging voice video and data over an ATM network from 3Com®, Te Papa offers visitors a unique collection of experiences both within and beyond its wide array of exhibits. From a multimedia intranet that previews current offerings to 27 real-time audiovisual projection screens in exhibit halls, Te Papa entertains, excites and educates like no other museum.

"Usually museums are about showing artifacts," stated John Field, Te Papa's director of commercial operations. "By combining displays with things to do and films to watch, our exhibits tell stories that provide an enriched experience to our visitors. One essential component of this experience is the multimedia services delivered by our 3Com network."

Redefining the Modern Museum

A $317 million government project, Te Papa provides free admission and a variety of additional attractions, including theaters, a conference center, motion simulator rides and a five-star restaurant, that are transforming both the museum and museum goer. Under 30-year-olds represent a staggering 40 percent of visitors, and the museum has quickly become a national forum, engaging New Zealanders on a wide array of cultural issues.

"At Te Papa, we put ideas and philosophies on display as well as treasures," said Lynley Cunningham, the museum's director of funds development. "By making each visitor a participant rather than an observer, our converged 3Com network is

"By making each visitor a participant rather than an observer, our converged 3Com network is enabling us to redefine the entire museum concept."

Lynley Cunningham, director of funds development, Museum of New Zealand Te Papa Tongarewa

enabling us to redefine the entire museum concept."

Powered by two 3Com CoreBuilder 7000HD (high density) ATM switches, the highlight of Te Papa's multimedia services is the simultaneous real-time streaming of video footage used to supplement its exhibits. A video broadcast application in the museum displays MPEG II movies stored on a Sun server on 27 screens and TV monitors throughout the museum using an online media ATM setup box from Acorn. Visitors to a show called "Awesome Forces" can watch wide-screen footage of a New Zealand volcano in full eruption, and those intrepid enough to enter "The Earthquake House" can relive—via sound, video and even motion simulation—the earthquake that recently shook the small New Zealand town of Edgecumbe.

Advanced Multimedia Intelligence

The synchronization of these effects is controlled by a proprietary, network-driven software application dubbed "Ted." The brains of Te Papa's converged services, Ted runs on an Enterprise 3000 Sun server with dual OC-3 links to the CoreBuilder 7000 switches. Using Ted, a single operator can program and monitor all video screens, eliminating the need and expense of employing an individual to run each projection system.

"Video projections at most museums, if they exist at all, operate as standalone systems," noted Field. "Unlike continuous video looping or laser discs, we have no moving parts on the floor, which means less maintenance. With Ted and our network, we gain reliability as well as efficiency -- assets that translate into more uptime in front of visitors."

Te Papa visitors are additionally engaged by network-based "Way Finder" kiosks that tell them their location and showcase daily events using touch screen technology. A Web browsing application supports further learning by allowing access to external Web sites related to specific exhibitions or themes. Visitors using the museum's innovative Te Papa OnScreen program on one of 50 PCs can access an intranet that provides samples of the institution's diverse offerings. Te Papa OnScreen has a rich graphical user interface which connects to Hyperwave, a database solution that presents data in a number of different formats

including sound, video, graphics and text.

"Rather than being overwhelmed by all there is to do at Te Papa, visitors using our intranet can make informed choices based on what interests them most," said Richard Hinderwell, the museum's manager of information technology. "They also can learn more about what they see. For example, a search under 'Britten bike' displays text, pictures and facts related to the current exhibition about a New Zealander named Britten, who designed and built the renowned motorcycle. The viewer can even click on an icon to see a clip of the bike in an actual race."

In addition to visitor-oriented applications, Te Papa's network supports administrative services such as "Te Kahui," a multimedia collections database that stores and collates millions of items. Administrators also use Microsoft Office, Microsoft Exchange, the Internet and an intranet for fast access to operating procedures and phone directories.

Reliable Speed and Control

Given the services Te Papa offers, museum planners quickly recognized the need for a high-powered network and contracted Eagle Technology, a reseller in Wellington, supported by its local distributor, Interconnect, to design and implement the architecture.

After choosing ATM because of its scalability and low-latency delivery of multimedia services, Te Papa evaluated solutions from

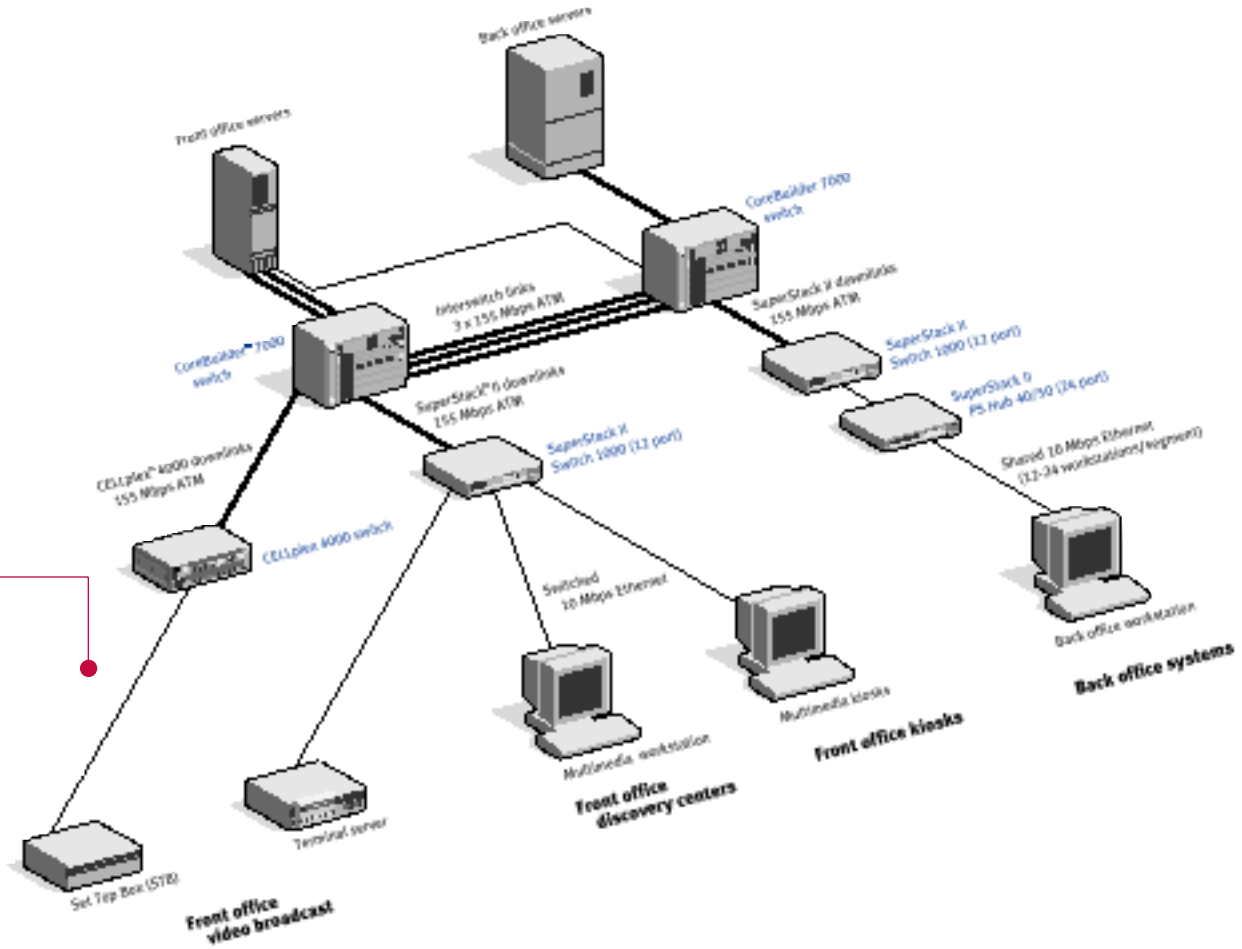
Ungermann Bass, Bay Networks, Cisco and 3Com. "3Com was the only vendor at the time with the ability to integrate a resilient ATM backbone with Ethernet edge devices and to converge data with voice and video, which made it a very easy decision," recalled Interconnect consultant, Ian Quinn.

As presently constituted, Te Papa's converged network is based on the 3Com CoreBuilder 7000HD ATM switches, each of which has dual power supplies and redundant switching engines. The ATM switches have three 155 Mbps (megabits per second) OC-3 links to one another as well as to several servers and 15 3Com SuperStack® II Switch 1000 Ethernet edge switches. The SuperStack II Switch 1000s provide switched 10 Mbps Ethernet connections to visitors' PCs, information kiosks and 200 employees' desktops. The CoreBuilder 7000 switches also deliver OC-3 connections to several CELLplex 4000 switches, which distribute ATM connections to the set-top boxes or decoders that power the museum's 27 audio/visual systems.
Te Papa additionally utilizes 3Com's Transcend® Enterprise Manager to manage the network.

"3Com was the only vendor at the time with the ability to integrate a resilient ATM backbone with Ethernet edge devices and to converge data with voice and video, which made it a very easy decision."
Ian Quinn

3Com®
More connected.™

"Using the 3Com network, Te Papa has all the speed and reliability it needs to run its mission-critical applications now and in the future," said Quinn. "In fact, we can run up to 48 concurrent video streams with absolutely no degradation in quality. It's just one more way the museum is ahead of its time," he added.



o learn more about 3Com products and services, visit our World Wide Web site at http://www.3com.com.

Printed in U.S.A. on recycled paper

000000-001 X/98