

**Location:** Isle of Lewis, U.K.

**EMPLOYEES:** 800 Council-employed users—26,000 Western Isles residents and business owners

**INDUSTRY:** Local Government

**APPLICATIONS:** Video-conferencing, Voice over IP, e-government and document management applications



## Satisfied Customer Improves Constituent Services and Anticipates Over \$100,000 Annual Savings with Migration to Secure, Voice Ready Network from 3Com



### CASE STUDY

## IN BRIEF

### GOAL

- › Future-proof the network to enable secure, voice and video convergence
- › Provide scalable and efficient performance to reduce travel costs, increase remote worker productivity and support e-government applications
- › Simplify the wiring closets to increase operations efficiency and decrease maintenance costs

### SOLUTION

- › 3Com® 5500G (core solution in a 48 Gbps XRN® fabric)
- › 3Com 5500-E1 (edge solution)
- › 3Com Network Director

### RESULT

- › Secure, voice ready infrastructure and potential savings of \$125,000/£66,500 annually
- › Reduced travel expenditures, increased worker productivity, and improved constituent satisfaction from government services made available online
- › Space and time savings and increased IT productivity

## SNAPSHOT

Western Isles is a chain of islands off the west coast of Scotland. Although many of the 800 Western Isles Council workers and 26,000 residents are located on the largest Isle of Lewis, many others are scattered on remote islands as far as 200 kilometers away. Travel to the Council headquarters office can take a full day and cost more than \$500/£265, so the Council looked to a converged network solution to dramatically reduce travel expenditures, increase worker productivity and improve satisfaction with government services.

Angus MacArthur, Western Isles Council Head of IT, was very happy with his 3Com network, but in 2005, he realized he needed not only the reliability that it delivered but also a more scalable, future-proof infrastructure. The Council was planning to roll out video-conferencing services, looking to cut operations costs with Voice over IP (VoIP) and seeking an infrastructure capable of supporting bandwidth-intensive document management and transactional applications for workers and residents.

Today, the Council's new 3Com 5500G secure network provides quicker access to high-demand data applications that increase Council workers' productivity and minimize travel requirements. If the remote document access and forthcoming video-conferencing system saves workers 100 trips a year, the Council could save \$50,000/£26,500 annually. Together with planned VoIP savings and decreased network maintenance costs, projected savings could total more than \$125,000/£66,500 each year. Just as important, the Council's network is ready to support applications that will give residents the convenience of using the Internet to conduct government business—activities that currently require many miles of travel or a wait of weeks to accomplish.

“As a user of 3Com equipment, I was always impressed by the reliability and the ease with which it was managed... I wanted to reuse some of the existing equipment in the new network and capitalize on the staff expertise with the 3Com kit.”

Angus MacArthur, Head of IT,  
Western Isles Council

## CHALLENGES

The characteristics that make Western Isles, Scotland, a peaceful place to live also make it a challenging place from which to access public services. Its 26,000 residents and 800 government workers are isolated from the mainland of Scotland by a stormy stretch of water known as the Minch, and the chain of islands is connected by roads, bridges, causeways and ferries. Going to the Council’s headquarters office in Stornoway can cost a day’s travel by boat, car or airplane and as much as \$500/£265. Angus MacArthur, Head of IT, knew that technology could provide efficiencies for workers and residents alike. However, his current 3Com network, although still performing well, was not ready to support new technologies. He faced three major challenges:

- › **Future-proof the network for secure, voice and video convergence.** Making the most of limited tax dollars is always a challenge for local governments, so saving operational costs for voice communications is a logical goal. Given the remote locations of hundreds of Western Isles workers, MacArthur also realized the substantial savings in travel costs that video-conferencing could generate. The existing reliable, but unwieldy network, which had developed over the years to address short-term requirements, now impeded an integrated core and edge switching solution. The Council needed a voice-ready infrastructure with robust security and Quality of Service capabilities that would ensure high-quality audio and bandwidth availability as government service needs evolved.
- › **Provide scalable, efficient performance to reduce travel costs, increase remote worker productivity and support e-government applications.** Access to government applications and housing, planning, education, forestry, archeological and other databases was critical for all Council workers, but especially for remote employees. It was time-consuming and costly to travel to headquarters to access and exchange information. At the same time, e-government initiatives allowing residents to access government services and conduct business over the Internet were being planned to provide more convenient interactions with the Council. The challenge was to ensure that a secure, reliable and easy-to-manage infrastructure was in place for bandwidth-intensive applications, increased user load and transactions that required ever more network support.
- › **Simplify the wiring closets, increase operations efficiency and decrease maintenance costs.** The core and edge wiring closets were crowded with hubs and switches that had been installed over the years as needs arose. MacArthur needed to simplify the wiring closets with a modular, stackable solution while at the same time reusing some of the existing equipment to preserve capital investments. With only a small staff, he also needed to make operating and managing the communications infrastructure more efficient, and decrease maintenance costs associated with troubleshooting network problems.

## WHY 3COM

Over the years, MacArthur had been very satisfied with the reliability and ease of management of his 3Com network. The solution to his problems was clear when he became familiar with the company’s advanced convergence solutions and high-performance switches—Tolly Group testing showed the 3Com Switch 5500G-EI outperforming competitors’ products. Staying with a 3Com solution would also enable the Council to re-deploy existing equipment and capitalize on his staff’s expertise with 3Com systems.

At the new network core, the Western Isles Council solution uses 3Com 5500G switches with XRN stacking to provide distributed routing and resiliency for uninterrupted performance and disaster protection. The solution’s flexible Redundant Power System can power a full stack of XRN switches for cost-effective, trusted performance. Remote wiring closets on the ground, first and second floors of the headquarters building each contain four stacked 48-port 5500-EI switches with 2 Gbps connections back to the main core, allowing economical 10/100 connectivity to edge devices where Gigabit speed is not needed.

IT staff easily manage the entire solution with the single, user-friendly interface of the 3Com Operating System (OS) used by all of the switches in the 5500/5500G families. 3Com Network Director brings further efficiencies to management tasks, letting IT staff monitor, control and make changes to the Council’s local area network (LAN) with only a few mouse clicks from any location on the network.

The voice-ready 5500G switch future proofs the Western Isles Council network with advanced features. It prioritizes network traffic via eight Quality of Service (QoS) queues (vs. four offered by many competing products) to provide robust VoIP and video-conferencing performance when the Council’s infrastructure needs to support these added capabilities. The solution’s Power over Ethernet (PoE) connectivity reduces the need, and accompanying cost, for electrical wiring installation now and as the system grows.

In addition, the 5500 network is easily scalable to accommodate increased user demand. The Switch 5500 family offers a broad portfolio of products to handle the Council’s future network demands at a competitive cost per port. And, should the Council ever require it, the 5500G is capable of providing 10 Gbps connectivity.

## BENEFITS HIGHLIGHTS

- › A voice-ready network to enhance services and reduce costs—without the need for a future infrastructure upgrade—as the Council deploys IP telephony and video-conferencing applications
- › High performing systems to support advanced, economical and productivity-enhancing applications for remote workers and island residents
- › Easier network management that can be implemented by Council IT staff, avoiding the delay and expense of supporting geographically distributed systems and users

### A Voice Ready Network to Avoid Major Infrastructure Expenses for New Applications

The new 3Com 5500G network is ready to support VoIP and video-conferencing applications. By running voice services over the IP network, the Council will realize a significant savings of public tax dollars. Making calls to associates connected to the Council LAN will eliminate those long distance calling expenses. Using VoIP technology will also make advanced call-handling applications—such as find me/follow me, unified messaging and directory services—immediately available to Council employees, helping improve delivery of constituent services while reducing operational costs. Moreover, IT staff will have to manage only a single, converged network.

Video-conferencing is a particularly attractive VoIP application to the Western Isles Council, given the remote location of many council workers. For example, if Council workers in Barra, the southernmost island in the chain, want to discuss the details of housing rates or benefits with experts in Stornoway, they will no longer have to spend \$500/£265 for a round trip plane ticket or travel on two ferries for a face-to-face meeting. They can use their network to span the more than 135 miles (217 km) across the islands and simply sit down at a video conference unit connected to their desktop PC for immediate and visual access to the expertise needed. If the Council's 800 workers make 100 fewer trips a year to access information or attend meetings, the savings in travel costs could amount to \$50,000/£26,500.

### Ensure High Performance for Increased Remote Worker Productivity and E-government Services

With its 3Com network, the Council gains a scalable solution able to further reduce time-consuming, expensive travel and improve resident satisfaction with government services. The new infrastructure lets local and remote Council employees experience efficient, trouble-free access to vital databases and document management applications. One Western Isles Woodland Project Officer located in a remote office now enjoys quick and reliable access to the Forestry database hosted on the mainland and can easily exchange emails and large file attachments with colleagues. Council archeologists who are databasing 11,500 Western Isles archeological sites can now confidently share their data via easily accessed online information instead of requiring fellow archeologists and the public to travel to the Council office to view it.

The new network can support the transition of the Council Internet site from an information-based site to a transactional web portal, allowing users to complete Council processes online. The planning process provides one example of how the Western Isles community can benefit from these upgraded services. If residents or business owners want to construct or remodel buildings, they currently have to apply to the Council Planning Department by filling out a paper application, attaching an architect's plan and delivering it to department offices—often after multiple phone conversations about the project. Then the Council publishes a note of planning in the local newspaper to give neighbors an opportunity to respond. A process that often takes weeks and might include driving miles and ferry travel to Council offices, numerous phone discussions and their accompanying costs, duplication of paperwork and extensive mailings to local planning and environmental agencies can be reduced to days with no travel at all.

### Easier Network Management by Council IT Staff

Because the new 5500s are stackable, use fewer cables and feature more ports, the wiring closets and telecommunications racks in Council headquarters can be better organized and easier to maintain. The switches' XRN stacking, which links disparate units into one logical device with a single IP address, further increases efficiency. Use of 3Com Network Director for central management and configuration expedites installation and maintenance. And because the new infrastructure is providing fewer system-related technical problems and a single 3Com OS throughout the network, IT members can troubleshoot issues faster, more easily address other issues and develop new applications.

## LOOKING AHEAD

The secure, voice ready 3Com network is providing a reliable and future-proof infrastructure for data, voice and multimedia communications. As MacArthur noted, "Western Isles is largely comprised of small villages,

"Western Isles is largely comprised of small villages, many of them on remote islands. Our new 3Com network will enable us to provide public services online without having people fly, drive or sail to Stornoway, and that's an important public service."

Angus MacArthur

many of them on remote islands. Our new 3Com network will enable us to provide public services online without having people fly, drive or sail to Stornoway, and that's an important public service."

Building on its new 3Com solution, the Council will be able to launch a myriad of cost-saving and efficiency-boosting applications and services without a major and expensive infrastructure overhaul. As network capabilities expand the Council's communication options and budget is stretched by significantly reduced expenses, the impact of physical distance and weather on Western Isles residents will be lessened, strengthening community connections and fostering enhanced business activities.



**LEARN MORE: Visit [www.3com.com/case\\_studies](http://www.3com.com/case_studies).**

3Com Corporation, Corporate Headquarters, 350 Campus Drive, Marlborough, MA 01752-3064  
3Com is publicly traded on NASDAQ under the symbol COMS.

Copyright © 2006 3Com Corporation. All rights reserved. 3Com, the 3Com logo and XRN are registered trademarks of 3Com Corporation. All other company and product names may be trademarks of their respective companies. While every effort is made to ensure the information given is accurate, 3Com does not accept liability for any errors or mistakes which may arise. All specifications are subject to change without notice.

505373-001 08/06