ProNetExpert Ltd
Delivering Tomorrow's Technologies Today

CONSULTANCY CASE STUDY

TechSoup Global

TechSoup Global, a 501 (c)(3) nonprofit, was founded in 1987 on the belief that technology is a powerful enabler for social change. Since that day, they have assembled a worldwide network of individuals and organizations that share this conviction. This network — one that you likely belong to — includes foundations and corporations, governments and NGOs, social entrepreneurs and volunteers. Together, these unlikely allies have developed sustainable, community-driven technology solutions to meet today's most urgent social challenges.

ProNetExpert were approached by a Gold US global Channel Partner to provide consultancy services for TechSoup in the form of local Polish speaking CCIE professionals, Routing & Switching, Wireless and Voice specialists.

Our truly global access to these sorts of resources is where our strengths lie and both organisations had no hesitation in engaging with our services over two phases. Phase one was to take the current network design and deploy a wireless network with the equipment that was provided. This included writing all the configurations and rules, to include VPN access to the TechSoup head office in San Francisco. Phase two consisted of implementing a voice solution across this network to be scalable as and when the organisation expands.

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Cobbett Hill Earth Station

Cobbett Hill Earthstation Ltd, is based in the UK, and provide global satellite coverage through Intelsat, Eutelsat, PanAmSat, Loral Skynet, Arabsat, Telstar, plus New Skies satellites. They are a 100% night and day operation, a non stop service provider. They offer expertise in designing and building end to end solutions. Complete Solutions are available ranging from simple VSAT telecommunication systems through to large Gateway earth stations and Global VSAT networks.

ProNetExpert (PNE) were invited to the Cobbett Hill Earth Station (CHE) in Guildford to assess the network needs in order to determine an upgrade path for the existing infrastructure. CHE had seen significant business growth over the past 18 months and were keen to replace the existing core hardware to a highly available and resilient Cisco based infrastructure. The key objective for the client was a solution that is highly redundant and provides scalability for the future.

In addition, CHE had seen vast amounts of multicast storms which have had a severe impact on performance and customer experience. The current hardware was not offering any functionality to limit these storms and protect the network from such scenarios.

ProNetExpert's solution was to focus on Scalability, Resilience and Availability, Manageability and Security. Our proposal was accepted and we were engaged to provide the hardware components, design and planning and configuration. We still work with CHE to this day and are in negotiations to provide 24/7 Support for this solution.

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Britannic Technologies

Britannic Technologies are an award winning specialist in IP communications, systems integration and managed services with over 25 years of experience.

They were founded in 1984 and from the outset established an enviable reputation within the market for delivering high quality telecommunications solutions and services complemented by their ability to innovate within the market. Throughout this time they have developed their position within the fast evolving telecoms market place by partnering with world leading manufacturers and service providers to deliver best of breed solutions to organisations throughout the UK, constantly underpinned by their total commitment to customer care and integration capabilities.

A network design workshop was undertaken by ProNetExpert, the BTL Technical Director and Technical Product Manager taking into consideration the current BTL service offerings over the recognised third party delivery mechanisms as well as proposed new delivery and backup methods. The following are the third party delivery mechanisms;

The workshop concluded that the network follow a strict security model and be robust enough to offer the customers a variety of connection options with the ability to add new connection options and services with minimum to no disruption when applicable.

ProNetExpert's design was devised with two Data Centres being utilised but is capable of standalone operation, with a major limitation of the firewall being a Single Point of Failure (SPOF) with only one Data Centre operational. The first of the two data centres were completed October 2010, with the second in implementation and deployment stage in February 2011.

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CONSULTANCY CASE STUDY

Kings County Office of Education

The Kings County Board of Education are elected officials representing the five trustee areas comprised of Avenal, Corcoran, Hanford, Lemoore, and Armona in California. The County Board of Education operates under the authority of the California Constitution, the State Legislature, California Education Code, and the California State Board of Education.

KCOE (Kings County Office of Education) approached Pronet to help them re-design their layer 2 WAN. The KCOE WAN is used to provide connectivity between the different school districts within the Kings County area. The 196 schools had a combination of Cisco 2950s and Cisco 3550s, which were used to connect back to a central data centre at layer 2 using laser links. The connections were then routed through a Cisco FWSM to provide security between different schools districts and access to data centre services.

This design provided KCOE will a number of problems. They frequently experienced Spanning Tree problems, which would impact the entire network due to the layer 2 nature of the design. Management of firewall rules was difficult as changes to the FWSM pair could potentially impact all school districts. As a result, KCOE provided Pronet with the following design requirements.

- Migration to a layer 3 design
- Maintain existing security segregation between school districts
- Where possible maintain existing hardware investment

Pronet proposed a design based on VRF Lite and Cisco FWSM contexts, with an upgrade of any existing Cisco 2950 switches to Cisco 3750. Each school district and location was assigned to a logical security domain. The security domain consisted of a group of SVI that were placed into a unique VRF. The VRFs were then connected back to back on each router in the path between the school district and the Cisco FWSM.

The FWSM was configured in multi-context with one context for each security domain. The FWSM was also to be configured in transparent mode to provide a layer 2 hop between each VRF on the Cisco 6500 and an intranet VRF. Then EIGRP was configured to run over the top of the whole topology and propagate routes between all VRFs within the security domain. In addition,

EIGRP would run between each of the VRFs on the Cisco 6500 and an intranet VRF via the Cisco FWSM.