High Storrs School Case Study

Project Background

IT management is hard work. Demands from management, requests from any number of users and most importantly a tight budget to satisfy everyone with. We would all like a bottomless pit of money so we can do our job properly but the situation is even worse when you work for one of our nation's cash strapped schools.

John Dowd is Head of Computing and ICT (Information Communication and Technology) Co-ordinator at High Storrs School in Sheffield and, as at most state schools, money is tight. Unfortunately, demands are also high. ICT was the third most popular subject in modern schools according to a recent survey, (Art and P.E. were top) so it is important for the students to have enough IT equipment.

The government has also placed more and more emphasis on IT through the national curriculum, pushing for schools to provide students with the computer facilities they might not have at home. This means e-mail for all and Internet access to boot.

High Storrs is an old school with an excellent record. The school was established around 120 years ago and 70 percent of its pupils gain 5 GCSEs at grade C or above. The statistics are similar for 'A' level and GNVQ students too with a full range of subjects available.

Reliability Issues

The school currently has two different networks, one for the pupils and one for administrative support. The administration network is mainly used for word processing and the school's management database known as SIMS. The curriculum network provides subject specific and specialised software to

various classrooms and dedicated computer rooms where pupils use the machines for printing, file sharing and different applications. The networks are both Internet and e-mail equipped via a Linux proxy server.

The problem John Dowd was having at High Storrs School was reliability. As the network had grown with the increased intake of pupils, and machines added as and when the tight budget would allow, small, yet vital parts like network cards were purchased from a range of different suppliers. "At first there were no problems," said John, "however I had some problems re-using network cards from some suppliers and even had problems getting cards to work after re-installing software, a necessary task sometimes after pupils have been using and managed to crash a machine with some vital files deleted."

A Growing Network

Luckily, John had purchased some D-Link DE-220PCT ISA combo cards, which stood out from the rest because of their reliability. "They worked first time, second time and every time," enthused John. Importantly, D-Link had branded their name on the product allowing John to take notice of the manufacturer. "A small point but identifying a card from some suppliers when attempting to re-use it can sometimes be incredibly difficult," explained John.

In October 1998, John was offered over 200 computers from Sheffield Hallam University. Not one to refuse such an opportunity, despite the work it would need to install the machines, John accepted the offer. The university was having a clearout as they made sure all their systems were Y2K compliant, however at the time these were still fairly powerful machines, many of them Intel Pentium 200Mhz PCs.

When it came to installation, John remembered the D-Link network cards he had bought previously. Although some of the university PCs still had network cards, John found problems with identifying different manufacturers devices

and finding appropriate drivers. John's solution was simple, "I bought bulk packs of DE-220s saving time, effort, heartache and money," explained John.

The Right Solution

The new computers were temporarily linked using D-Link hubs. John used DE-824TP - 24 port 10Base-T 10Mbps Ethernet; DE-816TP -16 port 10Base-T 10Mbps Ethernet and DE-809TC 8 port 10Mbps Ethernet mini hubs, depending on the number of computers in the given location. As before, John contacted his normal suppliers including Novatech and Hills components and purchased the products due to his previous good experience with the D-Link network cards. D-Link did not disappoint - the hubs were quickly and cost-efficiently installed.

In June 1999, John was able to expand his curriculum network thanks to a charitable sponsorship. John approached several suppliers to design a network of his own. The aim of the project was to provide a CAT 5 point to every room in the school, no mean feat in a school of 1800 pupils. John used the D-Link product guide to aid the decision making process - "the guide was useful in giving me the specifications of the products and help with deciding how I wanted the network to look," said John.

By this time D-Link had made a very good impression on John, D-Link products had proved to be reliable, simple to install and above all excellent value for money.

With this in mind he requested a quote for D-Link products for all the 'active' areas of the network such as cards, switches and hubs (DE-528CT cards replaced the ISA cards on later installations). "Although the supplier (Quad MicroTech Ltd) that did my cabling had a relationship with a different manufacturer of network actives, I had them quote for D-Link products and compared this with my usual hardware supplier," said John. After looking at the alternatives John decided on D-Link products for all the network activities,

"the prices were competitive and I had my positive experiences of the quality and reliability of the product," John explained.

A Network with Flexibility

The network has changed a lot since Information Technology first came to High Storrs. The first curriculum network provided printing and e-mail services to just five computers in one room. Now thanks to the work of John, donors generosity such as Hallam University and of course D-Link's product family, the network now consists of over 140 machines with flood wiring of CAT 5 over the entire main school block via seven wiring cabinets.

As most of the administration work is done from one location, the administration network is mainly run from two of the main wiring cabinets using D-Link's 24 port 10-Base-T hub. Other cabinets only contain 8 port hubs and not all the connections are used, although this may change in the future as more staff seek access to the school database. Presently there are three typists, three finance package users and twelve stations for the pastoral staff to access the school database containing pupil records, staff and timetabling information. The finance users and the typists share an NT fileserver but are connected to separate printers as the former have a specific printer for cheques, etc.

The curriculum network is organised along slightly different lines - D-Link's DES-1016 10/100Mbps switches provide a segmented network. John has 7 cabinets each with a single DES-1016 switch linked to DE-824TP or DE-809TC hubs as appropriate. Although all the rooms have a CAT 5 point, resource allocation means that only 8 of 80 rooms actually have groups of computers in them. Groups consist of between six and twenty-two PCs connected via a 24-port hub. This system allows whole classes to use the computers at once. Some PCs are on trolleys so they can be speedily deployed to rooms without a computer if necessary.

In the background the switches are linked to the main servers via 100MB network cards. The school runs an e-mail server, home directory server, virtual CD server and an application server. The administration and curriculum networks are both connected via two network cards to a Linux proxy server to provide Internet and e-mail access.

The school network is very important to High Storrs. Using D-Link products, the school has been able to provide every pupil with their own e-mail address and home directory. Pupils can access their files from anywhere in the school although the main benefit comes from enabling pupils to bring up copies of their class work on PCs in the library. The school even has a video conferencing link with a school in Germany!

"Reliability of the network is of prime importance as pupils need to be able to access their work on the server from any machine on the network," said John. So far John's faith in D-Link has been repaid with only one fault reported which was quickly and efficiently sorted. "One hub started playing up," explained John, "it was fixed quickly with no fuss under the five-year warranty. It hadn't been a consideration when buying the product but was very satisfying."

When it comes to network kits, John may be on a budget but he has an important network to run and cannot afford to cut quality, D-Link gave him the best of both worlds. "Network products are ideally fit and forget items. They should work first time out of the box without any unnecessary hassle and continue to work without needing constant tinkering. When moved, re-installed or re-used they should need minimum effort to get them working again. They should also do all this without costing huge sums of money," said John "I have found that D-Link products meet these requirements, unlike some of the competition I have experienced," John said.

Future Developments and Summary

It is not overstating the facts to say the High Storrs School project has been a success. The school recently loaned equipment to the British National Science Fiction Convention including a D-Link DE-809TC hub. All the equipment functioned perfectly for the entire weekend.

The school is also set to join a city learning centre scheme, becoming a spoke school on the network. This means High Storrs will receive a significant amount of funding in September 2001. John Dowd hopes to spend the extra cash on new 100 Base-T switches to improve overall network performance.

"The results from High Storrs School are a perfect demonstration of the key benefits of D-Link products - reliability, simple installation, ease of use and competitive prices," said Dion Luyk, General Manager UK, Eire & Benelux, D-Link (Europe). "In the most taxing of environments, D-Link products have performed well with the demands placed on them and proven daily their durability, quality and versatility."