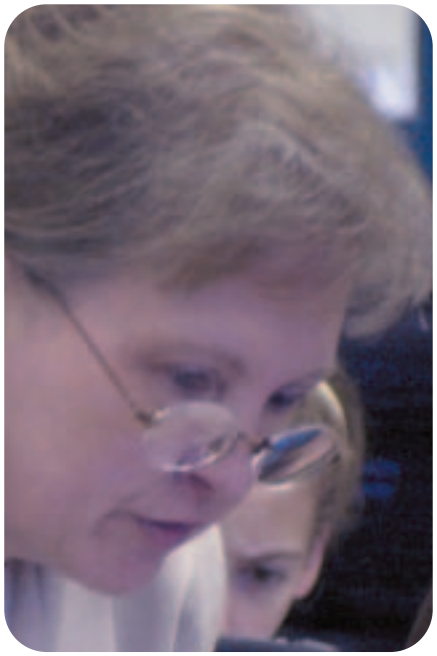
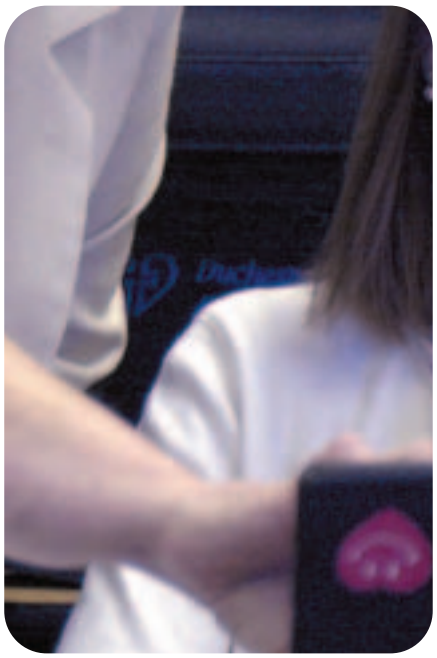
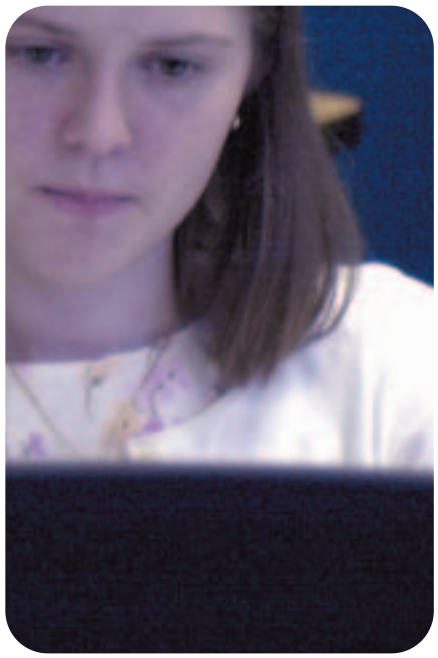
inspiration technology for learning

hp education success stories

invent







"With the growth of ICT in education, the very nature of teaching and learning is changing."

empowering teachers and students

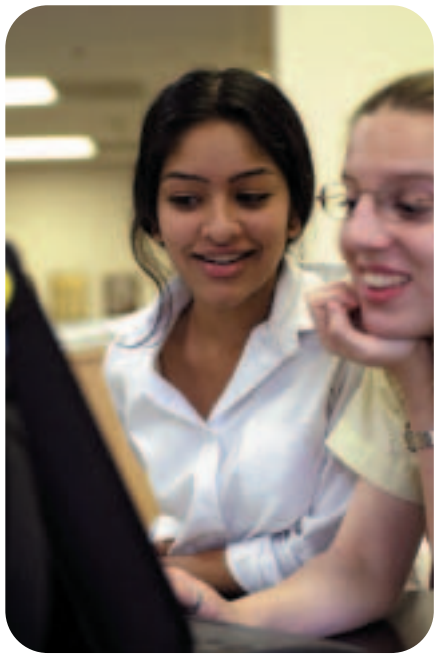
Education professionals are now using information and communication technology (ICT) as much more than a data tool. They're using it to inspire new and exciting ways to teach and learn.

That's where HP can help. Schools and colleges around the world trust us to deliver cost-effective solutions that empower teachers and students to work more creatively — and more effectively — in the classroom and beyond. Supported by industry-leading levels of service from our unique network of local accredited partners, these solutions combine flexibility and value.

The case studies in this brochure explain how HP solutions augment traditional methods of teaching and learning at all levels of education. These stories reveal how ICT can make a real difference to educators and students alike.

For more details of how HP education solutions can help you, call **0870 787 7178** or visit **www.hp.com/uk/educationsolutions**

empowering teachers and students



South East Grid for Learning

security and speed

South East Grid for Learning (SEGfL) is a consortium of Local Education Authorities (LEAs) across the South East of England which work together to provide secure and reliable curriculum broadband resources to schools in their catchment areas. Each LEA aims to provide email and Internet access for all pupils and staff.

To protect pupils from inappropriate content, safety for users of the system is paramount — but the security measures must not prevent ease-of-use. Protected email and high-speed Internet access, secure electronic document interchange, a central depository for curriculum resources and a closed Intranet community that includes all schools in each borough area are vital elements.

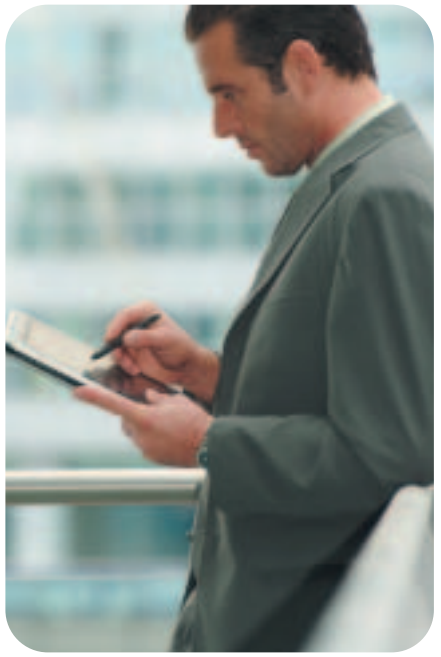
The system also needed to be resilient to failure and offer a high level of availability, every day of the year. It had to deliver good value and ensure that the limited budgets available were used to the best possible effect.

Delivering such a system required some creative design thinking, and an innovative, rather than 'out of the box', approach. To meet their specific targets, four of the SEGfL LEAs — West Berkshire, West Sussex, Medway and Royal Borough of Windsor & Maidenhead — worked with Atomwide, a Compaq Preferred Education Partner since 1999 and an HP Education Partner since the HP and Compaq merger. Atomwide is well-known for its work with LEAs, schools and other local government services.

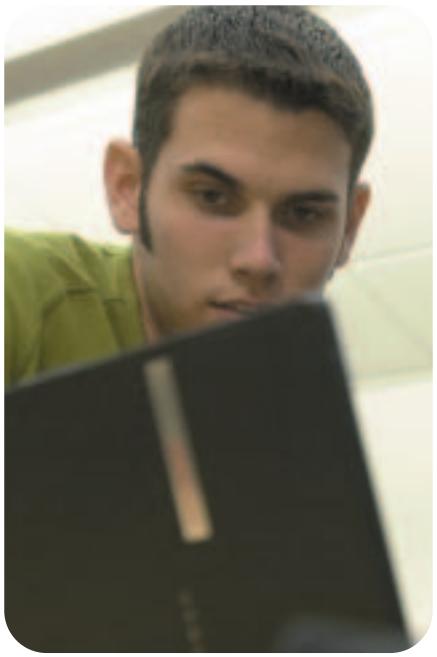
A wide area network (WAN) was developed for each LEA using leased lines from the local cable telecoms provider in each region, supplemented by additional lines from BT for rural areas where cable could not reach. Typically, six appropriately scaled ProLiant servers in each LEA were set up to deliver a selection of services to between 30,000 and 60,000 users. The preferred models were ProLiant ML530, ML370 and DL380 servers. To complete the solution, other components included a Cisco network infrastructure, Microsoft® operating systems and MessageLabs SkyScan for scanning email traffic for viruses and spam.

The servers are linked by a virtual private network (VPN) to Atomwide's main offices in Orpington, from where they are constantly monitored and can be remotely accessed, controlled, upgraded and fault-diagnosed. Each is equipped with an HP Remote Insight Board and Insight Manager software, giving Atomwide engineers the ability to take full control of the servers, at both the operating level and the hardware level.

These systems allow degrees of control and economies of scale that would be impossible if schools tried to provide such a solution individually. The schools benefit from their mutual participation in a larger community, while LEAs maintain ultimate control — rarely possible when services are fully outsourced. The four SEGfL LEAs, together with six LEAs from other regions, make up Atomwide's 'grid network', which comprises more than a third of a million users in over 1,100 schools. And with the addition of independent schools to the network, this solution is set for further success.



"[the system] needed to be good value and ensure that the limited budgets available were used to the best possible effect"



innovation and adaptability

Gateacre Comprehensive School

When Gateacre Community Comprehensive School in Liverpool needed an innovative ICT supplier it turned to HP.

With 1,800 students plus over a 100 staff spread between five buildings, it was essential that any ICT system implemented was flexible. ICT Network Manager, Greg Jones wanted to make sure the system would be good value, easy to manage and very adaptable to meet Gateacres future needs. It was also important that a high level of control could be maintained over pupils' application access plus internet.

enter hp

For the last two years Gateacre has seen big changes to its ICT. First a reduction in the number of file servers was made and the ability to support over 200 computers was implemented. With the addition of new computers also came a whole host of extras: printers, interactive white boards, CD-ROMs and multimedia equipment.

Most recently Gateacre has seen the introduction of the Mobile Classrooms – HP portable computers and HP wireless technology that provides up to 66MB of bandwidth. The school now has an extra 50 hours of ICT resource per week thanks to the Mobile Classroom – as it can be taken to a location where it can be incorporated into curriculum delivery.

The Mobile Classrooms are just one of the new resources available at Gateacre. Now there are 450 computers throughout its facilities and over 2,400 user accounts. All students have their own user account giving them a secure area to store work that they can access from any networked computer. They also have a web based email account allowing them to communicate inside and outside of school. HP wireless desktop computers have been used to overcome issues of temporary accommodation, and provide ICT tools for teaching staff addressing the issues associated with the Computer for Teachers scheme. And two Compaq Tablet PCs will be delivered soon.

HP was able to deliver good value for money and a system that has relatively low maintenance costs. Paul Coulthard is now able to run a network suited to the school's specific needs. Paul Coulthard, Head of ICT, concludes: "Now we have ownership of our network and can adapt it to meet our aims and aspirations. I am free to dictate the pace of the ICT provision for pupils at Gateacre School."

"…our network and can adapt it to meet our aims and aspirations"

Paul Coulthard, Head of ICT

"Our network has been running for only three weeks and in this time every child in the school has achieved more than they did previously in a whole term and the staff think it is wonderful!"

West Borough School

going their own way

Until recently this school had inadequate computer facilities — frustrating for teachers and children. Headteacher Janet Foulsham understood fully why her teachers were resistant to technology. The solution was obvious but tight budgets can be inhibiting. Quotes from many manufacturers were high and offered unnecessary facilities. Janet felt the quote from Compaq was very competitive, offering a saving of 50 percent in some cases.

The school needed a holistic approach to ICT, best provided by a central network linked to classrooms — a real advance on the stand-alone machines in use.

Robert O'Toole, a network manager at Oxford University, explains, "I know how reliable Compaq systems are and was very confident in my recommendations to the school. The server gives us huge scope for development and will provide administration systems which will be time saving, effective and empowering. They decided to implement a Compaq network in one room allowing a whole class to use IT across the curriculum."

The results? Everyone is delighted. Teachers work collaboratively in their own time, building ICT skills. Janet says, "This far exceeds what we achieved before on courses, because everything we do now is relevant to our teaching."

Steve Howard, school governor, adds, "It is phenomenal to see the change in culture. Staff, children and parents are all so motivated. And when you see three months' work condensed into one afternoon, you get an indication of just what is being achieved."

trust and reliability

Motherwell College

Motherwell College is one of the largest further education colleges in Scotland, with around 2,000 full-time students and a total enrolment of 17,000 students. It opened in 1967 to cater mainly for the training and educational needs of the traditional heavy industries that flourished in Lanarkshire.

Over the past 30 years the needs of local commerce industry and the community have changed considerably and the College has had to adapt its strategies and procedures accordingly. Situated in a catchment area that includes many high-tech companies, the college is committed to equipping learners with Information and Communication Technology (ICT) skills to increase their employability.

Motherwell College's network is critical to its smooth running. An internal audit revealed that the college needed to address the issue of disaster recovery, and data storage solutions needed to be investigated for curriculum material as well as staff and student records. With the correct level of data protection being a government requirement, the college therefore needed a disaster recovery solution to protect mission-critical data and applications.

A single solution was required to improve network availability and speed as well as to protect college data and keep within a limited budget.

Plans were to spread its storage between the main building and a separate nursery facility about 500 metres away.

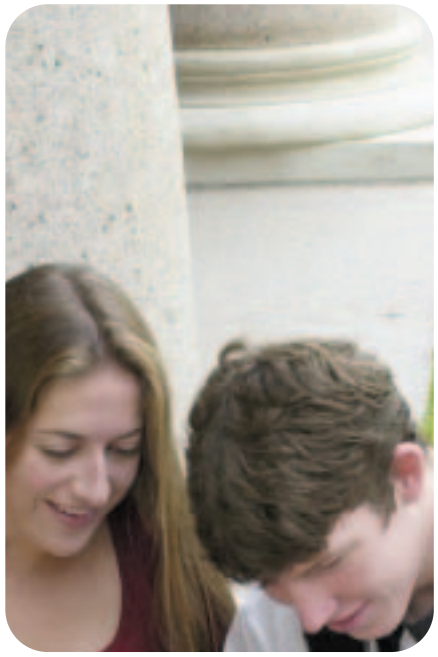
A single solution was required to improve network availability and speed as well as to protect college data and keep within a limited budget. Motherwell chose HP based on the reliability of the colleges existing HP servers and a favourable price point.

The college solution includes Novell Storage Services disk mirroring, which automatically stores data onto separate disks simultaneously.

The solution uses a five-node stretch cluster configuration, with a 750 GB Storage Area Network (SAN), and redundant links to storage and the college LAN. Three HP ProLiant servers are located in the main building and two in the nursery. College employees installed the hardware with HP professionals helping to configure the redundant network interface cards, providing on-site training for the RAID arrays and installing HP Insight Manager. HP also provided an uninterruptible power supply (UPS) and the associated training.

"The HP cluster server solution has provided the College with a functional, reliable and stable platform for its environment. This has been added to by the addition of new servers from HP – which have continued to provide superb reliability and performance," said John Morrison, Motherwell College.

"The college has seen a shift to a more collaborative learning culture"



learning at your fingertips

Philip Morant College

The staff and sixth formers at the Philip Morant College in Colchester have embarked on an exciting learning experience with iPAQ Pocket PCs. The college's innovative 'Learning @ your Fingertips' project aims to assess the effect of the latest handheld computers on student achievement and ICT skills. Since the Microsoft® Windows® Powered iPAQ Pocket PCs were introduced, teaching and learning styles at the college have changed significantly. The college has seen a shift to a more collaborative learning culture, where students and teachers share ideas and resources. Headteacher Russell Moon describes the iPAQ as "an invaluable organisational tool."

learning together

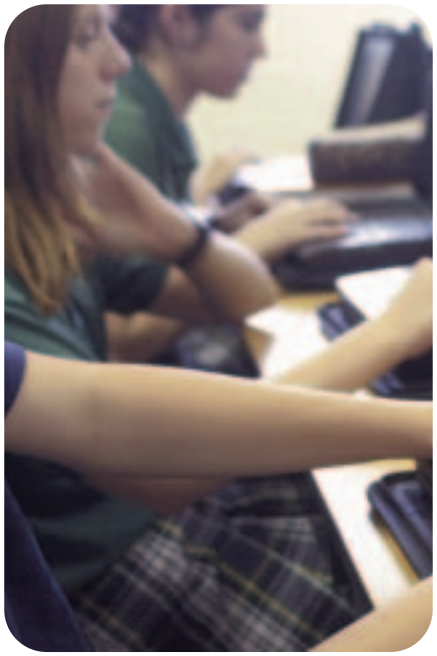
Students now have personal access to pocket versions of Microsoft® Word, Microsoft® Excel and Microsoft® Windows® Media Player, and can exchange information using the iPAQ Pocket PCs' infrared file exchange facility. This has resulted in increased collaboration between learners.

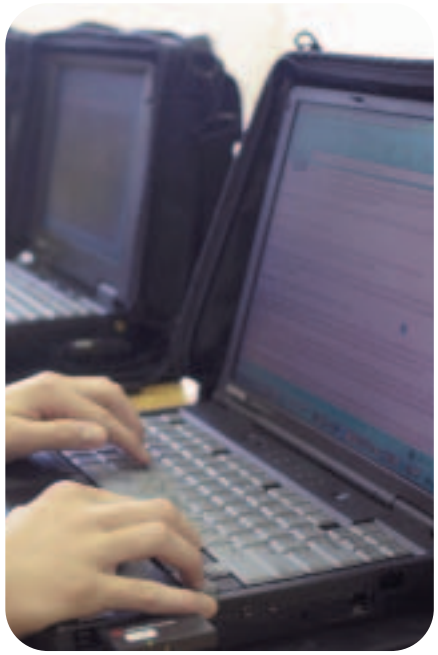
The relationship between students and staff has also changed. Project Leader Steve Goodridge and his A-level technology students share their learning experiences at the beginning of each lesson. Together they look at how they have used the iPAQ Pocket PCs in their studies and discuss new software downloaded from websites such as PocketPC.com

working across the curriculum

The Pocket PCs have enhanced teaching in many areas of the curriculum. Teachers in the Modern Languages department use the ebook reader facility to download selections of foreign language texts for use in lessons. Science teacher Sarah Reay has made significant changes to the way she works. "For example, students' notes are now linked to a glossary using Pocket Word," she says. "The glossary grows throughout the course and provides an excellent resource that students can access at any time."

The college's administration has also benefited from the project. "We've been able to make student data available to essential staff, so whenever they need to contact a parent they have all the information they need at their fingertips," explains Russell Moon. "The iPAQ Pocket PCs reduce the need for staff to carry paper records and make it easy to record the outcome of conversations with parents."





from laptop to large screen

"Logically, the school realised that without staff competence in ICT, teaching through ICT would be a non-starter. And success followed."

Haileybury College

Haileybury College is an independent secondary school in Hertfordshire. Because of the school's layout — many separate buildings peppered across large grounds — mobile computing figured largely in Haileybury's approach to developing their computer network. Laptop computers, for mobility across the entire site, were chosen to complement fixed machines. Stage one was to lease 40 laptops — not for pupils, but to train staff. Logically, the school realised that without staff competence in ICT, teaching through ICT would be a non-starter. And success followed.

With parental support, all pupils in Years 7 and 8 now have a robust HP portable — educating them early on in the skills required for an ICT-based curriculum. Each boarding house also has an online desktop for pupils to use outside daily school time, and the school has set up a large-screen interactive online skills teaching suite.

Leasing was the preferred purchase option, helping cashflow and eliminating the spending peaks of normal procurement. The school regarded the onsite engineering support as a key element of the package. Leading all others, HP was selected to provide the school's fully integrated network.

a new passion for learning

The City Learning Centre in Leeds is a first step in the government's 'Excellence in Cities' initiative, designed to improve the quality of teaching and learning using ICT. Based at Cockburn High School in one of the most deprived areas of the country, it's the first purpose-built centre in the UK.

"When the students enter the centre for the first time the noise they make is phenomenal," says Steve Burt, the Centre Manager. "Yet on subsequent visits the centre is filled with the quiet hum of industry as students become absorbed in their work."

Stocked with a suite of 80 desktop computers networked to two ProLiant servers, the centre is used by 300 students every day, and is open to the general public during the evenings and at weekends.

success built on reliability

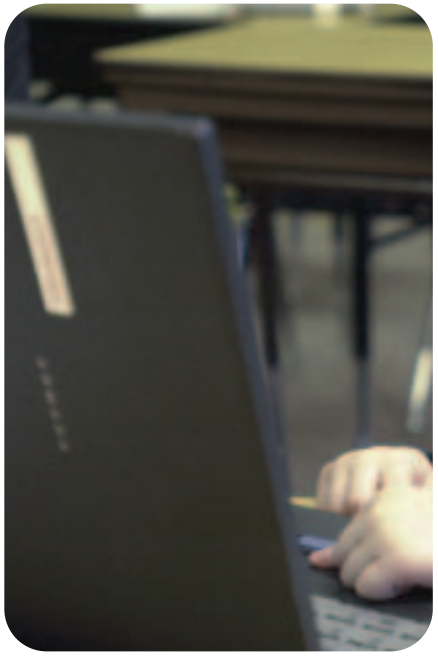
Teachers at Cockburn High work with the Learning Resources Manager to develop individual learning programmes that enable students to work at their own pace. "Students who have been disengaged from learning are turning up at 8.00am to carry out their own project research using the Internet," remarks Steve.

The centre uses Ranger software to ensure that students and the system are securely protected from inappropriate material and the risk of viruses from the internet. "Ranger makes the administration of the PCs very easy," explains Chris Hickmott, technical officer at the centre. "The remote control facility is particularly useful — from my PC I can see what's happening on every other machine in the centre."

All the equipment is leased from HP, which means none of it will ever be more than three years old. And any new equipment will fit into the existing system. The decision to go with HP was a crucial one. "Everything depends on the reliability of the kit," says Steve Burt. So far the Centre has suffered no problems or downtime.

"The speed with which the pupils have taken to this technology and used it to best advantage is quite staggering," Steve concludes. "There are no two ways about it — they love it."

City Learning Centre Leeds



"The centre is filled with the quiet hum of industry as students become absorbed in their work."

Steve Burt, Manager,
City Learning Centre

top of the league

"…by combining children's interest in football with ICT, this solution offers a different approach to learning that's proving very successful."

Everton Study Centre

The Extra Time Study Centre at Everton Football Club is a joint project involving the club, Liverpool LEA and the Department for Education and Employment. Based at Everton's Goodison Park football stadium, the centre aims to improve the literacy, numeracy and ICT skills of pupils in the area — using football to help motivate the children to learn.

A key part of the centre's ethos is to encourage children who would not normally be interested in ICT to visit the centre. Many of the children come from families with a long history of unemployment, and so social inclusion is an important consideration.

"This is a most worthwhile initiative," says Sir Philip Carter, Chairman of Everton Football Club. "The children obviously enjoy it and it's something that we are delighted to be involved with."

a winning solution

Staff at the centre selected HP to provide innovative, flexible resources that would not only encourage children to visit the centre, but also hold their attention for longer than traditional learning methods.

Working to a tight implementation deadline, HP delivered a leading ICT solution, including the deployment of handheld HP Microsoft® Windows® Powered iPAQ Pocket PCs to trigger interest in the students attending the centre. Using the iPAQ Pocket PCs, children can access a wealth of web-specific and learning resources such as electronic books, freely available for education purposes. This approach — together with the surroundings of a football club at the heart of the city's heritage — provides a uniquely compelling combination of reasons for local children to visit the centre.

The quality of the network delivered by HP ProLiant servers and iPAQ desktop PCs means that high volumes of children and teaching staff with varying degrees of experience can enjoy a consistent ICT environment.

With wireless technology a new feature in British classrooms, nothing quite like this had been attempted before. Yet by combining children's interest in football with ICT, this solution offers a different approach to learning that's proving very successful. "We're delighted with the motivation and attainment of the pupils," says Ken Heaton, manager of the centre.

"With the growth of ICT in education, the very nature of teaching and learning is changing."

a new way of learning

Granada Learning, one of the leading suppliers of educational software and tools to primary and secondary schools in the UK, has formed an alliance with HP that creates a leading service for ICT in education at all levels. Part of the project has been the creation of ICT learning centres in Manchester and Newcastle-upon-Tyne.

The training facilities at the Manchester centre were so popular with children, teachers and LEA advisers that Granada Learning opened a new centre in Newcastle at the beginning of July.

"HP continues to develop innovative ideas to provide solutions for the future of education," explains Dave McCann, HP UK Sales Manager, Education. "With the growth of ICT in education, the very nature of teaching and learning is changing. HP will be there to drive forward these changes and help educators make the most of technology as it becomes available."

Granada Learning Centres

making a real difference in education

The Granada Learning Centre in Manchester offers educators and pupils two purpose-built training rooms equipped with suites of computers. Training is organised by Education Consultants who deliver a range of standard courses, including New Opportunities Fund (NOF) training. They also offer training tailored to the specific needs of teachers and LEA advisers, as well as specialist courses, such as using ICT in special needs teaching.

Andrew Chinn, Numeracy Consultant for Salford LEA, has taken groups of teachers to the Granada Learning Centre in Manchester, where they used Granada Learning software to develop areas of the maths curriculum. "The Centre staff demonstrate the software and remain on hand to help throughout the day. Their support is exemplary and teachers' evaluations are always very positive," he says.

The HP partnership with Granada Learning is about joint thinking and collaborative activities to provide solutions that get closer to the needs of children and educators. It provides excellent facilities and technologies that make a real difference in education.

exceeding expectations

"Considering the scale of the project and past experiences it has exceeded all my expectations"

Pete Griffiths, Network Manager

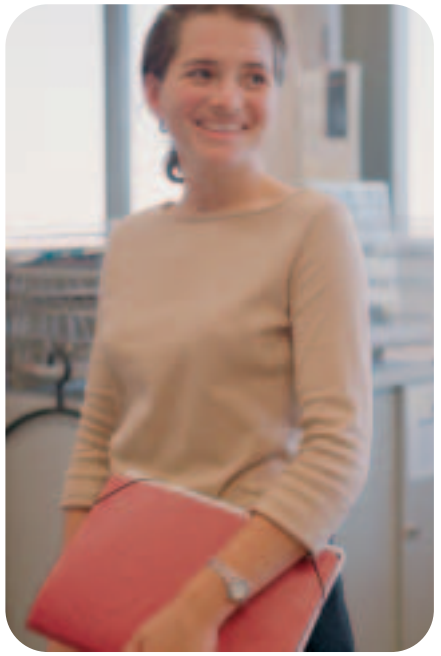
Peterborough Regional College

Two years ago Peterborough Regional College began an ambitious three-year programme to replace PCs throughout its campus. Given the sheer scale of the project the staff at Peterborough wanted to ensure they would be working with a provider capable of both reducing the overall cost of network management and also schooled in the fine art of easy integration. HP fitted Peterborough's requirements perfectly.

This year the standardisation to HP across the campus included the replacement of 246 Compaq Evo desktop PCs. These will provide extended lifecycles of up to 9-12 months, and with a footprint 50% smaller than a classic desktop model they fit Peterborough college's requirements perfectly. There was also a transition to new servers, to take advantage of faster processors, USB2 connections for faster connectivity and the latest chipset. "Over the summer we upgraded to new rack-mounted servers running Novell NetWare cluster services and the combination has been rock solid and problem free since the students returned in September," says Pete Griffiths, Network Manager.

Hardware faults are few and far between and when replacement parts are required they arrive swiftly. When necessary a technician arrives soon after a call has been placed to diagnose a fault or to fit a part. Drivers are easy to get from the support website and simple to install. More elements of the continued stable and consistent platform that HP has provided.

Previously Peterborough has never has a direct relationship with a Tier One Manufacturer but now a strong relationship has been established. It is almost an exclusively HP "house." But Peterborough has used more than just HP's hardware in its transition. Alteris Express manageability



software was used to deploy hundreds of PCs at one time. And by utilising HP Insight Manager, a web-based management tool, ICT managers now have anytime, anywhere access to management information across the HP PC network.

Since standardising on HP PCs, rather than a mix-and-match approach that was prevalent before, the Peterborough College ITC department have found that there are far fewer PC support calls to their classrooms, continuing to reduce education downtime. "Considering the scale of the project and past experiences it has exceeded all my expectations," concludes Pete Griffiths.

bespoke computing solutions

"Cranfield wanted a solution as opposed to a piece of kit"

Howard Hall,
managing director
of the DTP Group

It's not easy being a student at the Cranfield School of Management. Renowned for high-quality postgraduate teaching and research, as well as its strong links to industry and business, it is one of the top ten business schools in the world.

MBA students at Cranfield are expected to complete 70 hours of study time each week. To assist them, every student has the use of a new HP Omnibook XE3 laptop included in the course fee. The laptops come as part of a bespoke bundle provided by Leeds-based HP reseller DTP. With a strong record of providing technology for higher education, DTP has so far supplied 1,000 laptops to Cranfield.

"Cranfield wanted a solution as opposed to a piece of kit," explains Howard Hall, managing director of the DTP Group. "Continuity of product specification was also important. We worked with the university to produce the software image it wanted, which includes standard Microsoft® Windows®, virus protection, messaging and Microsoft® Office. All machines are supplied with this ready-loaded."

In addition to the pre-loaded software, the HP Omnibook XE3's built-in modem is vital resource. With it, students have access to Cranfield's fixed landline network within the university or are able to work off-site via the Internet.

Keith Temple, Cranfield's team leader for student support, adds, "The main reason that we went with HP was because we were able to go through the channel with a dealer who could provide more personal service and support. The HP Omnibook XE3 comes within our budget, is powerful and robust. The laptop project is a great success and the service from DTP is excellent. HP also lives up to its reputation for good service and support."

DTP also supplies support desk and recovery services for Cranfield. "When students used to bring their own laptops, it created difficulties because they would turn to us when things went wrong and we had to deal with many different models," concludes Cranfield's director of full time MBA courses, Pauline Weight. "Now, if anything goes wrong, they just take them to our IT department which can quickly replace the hard disk. This avoids disruption to their work. Having the HP laptops is a great benefit to us and to the students."

Cranfield School of Management

London Borough of Sutton

working around the clock

The London Borough of Sutton's Management Information Service is at the heart of a wide area network (WAN) that links 56 primary, special and secondary schools. The service, which runs on HP servers, operates 24 hours a day, seven days a week. It will provide every pupil, teacher and administrator in the authority with Internet connectivity, filtered web access, LEA and curriculum-specific resources, and filtered, monitored email facilities.

Gary Shambrook, Business Systems Manager, says, "the LEA made a considerable investment so we had to make sure we got it right. Reliability is centrally important to this project, and that's why we chose to use ProLiant servers. We'd already worked with HP for some time — all our primary and special schools, and some of our secondary schools, use HP servers and desktop PCs."

a secure and resilient system

Sutton LEA's technicians worked with Atomwide, an HP Preferred Education Partner, to design a system with a high degree of security, remote manageability and resilience. The WAN is based on routing and switching technology across a mixture of leased lines, and can be monitored, managed and protected from either Sutton LEA's head office or from Atomwide's local office.

Most of the system's workload is handled by two ProLiant ML370 servers and one ProLiant ML530 server. These host the Internet, intranet and email systems, and are supported by four Deskpro EN PCs, operating as dedicated systems for other network IP-based applications.

Since going live, the system has proved popular and productive, and is already being expanded with additional services and capabilities as enthusiasm grows for this centralised ICT resource development.

Gary Shambrook is convinced that his team chose the right solution. "The HP equipment and support have been excellent. We look forward to maintaining this close working relationship in the future."

"Reliability is centrally important to this project, and that's why we chose to use ProLiant servers."

foundation for academic excellence

"HP has a blueprint for the future. We can see how this vision will simplify the way we manage our server and storage infrastructure."

Adrian Jane, deputy application services manager, University of Plymouth

University of Plymouth

With 27,000 students and 3,000 staff at four major campuses in the United Kingdom, the University of Plymouth has diverse and complex computing requirements. To keep the institution at the forefront of its domain, information technology (IT) professionals there chose StorageWorks solutions by HP as the cornerstone of an innovative and evolving data storage architecture.

"As we add software applications and expand our computing capabilities, our data storage requirements are continually increasing," explains Adrian Jane, deputy application services manager, University of Plymouth. "Previously, we used server-attached storage devices, and it was becoming almost impossible to manage our growing infrastructure. A storage area network (SAN) from HP solves that problem, and allows us to consolidate servers so we can better serve our staff and students."

selecting a flexible, cost-effective storage infrastructure

In addition to creating a fault-resilient computing environment to support the round-the-clock demands of students, Jane and his team needed to devise a scalable storage solution for a campus-wide implementation of Microsoft Exchange 2000 software. They wanted to find a technology partner that could understand the university's specialised educational environment, was a leader in storage area network (SAN) technology and had in-depth experience with the Microsoft Exchange 2000 application.

After a thorough evaluation, HP won the bid over five other technology vendors. "HP came out on top with both the lowest cost of ownership figures and the best overall value for our money." Jane adds: "HP has a blueprint for the future. We can see how this vision will simplify the way we manage our server and storage infrastructure."

Ultimately, the SAN will help the university build a more stable IT environment by consolidating servers. The SAN enables a centralised storage infrastructure, and the StorageWorks Command Console makes for easy centralised management — dramatically simplifying the process of installing, maintaining and updating software applications. "Centralising software installations on the SAN will reduce inaccuracies and maximise our IT resources," Jane confirms.

HP continually works with the university's IT staff to keep the team abreast of new products and procedures to improve the student work environment. "The educational community in the United Kingdom is a tight-knit group, so ineffective technology rarely gets a second chance," Jane concludes. "Conversely, a successful solution, like our StorageWorks SAN, will spread by word of mouth throughout the educational community."

"We have confidence in HP's ability to stay ahead of our requirements," Jane says. "HP recognizes our ambitions and is dedicated to helping us achieve our goals. That's the basis of a very strong working relationship."

best loved servers

After conducting an ICT upgrade consultation process, Stanmore College decided to increase its ICT budget and invest in a new server for their integrated network system. Only one name was in the frame. The ProLiant 1500.

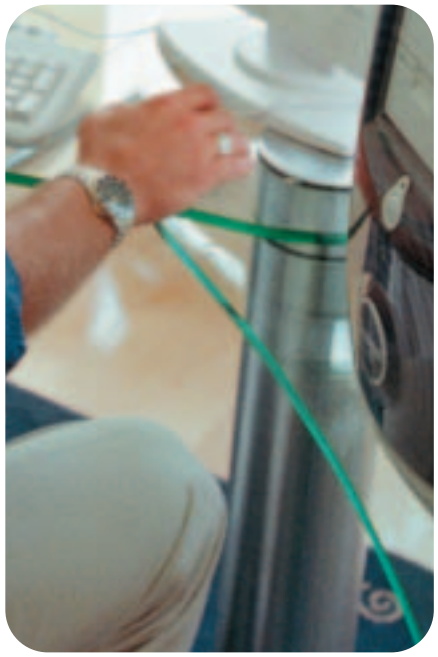
Since day one — and in constant use seven days a week, 24 hours a day — the ProLiant server has never crashed. The college describes ProLiant servers as "the best on the market" with robust, tried and tested technology on which they co-ordinate every department and curriculum area, with information accessible both internally and remotely.

Enormous everyday demands on their 400 computers include the delivery of teaching and data material for music, media, AV, word processing, accounts, maths, science, English and administration. As the college reports, "a good ICT infrastructure frees teachers to concentrate on the business of teaching, rather than spending valuable time researching ICT solutions."

Stanmore College

"...a good ICT infrastructure frees teachers to concentrate on the business of teaching, rather than spending valuable time researching ICT solutions."

flying machines



"Robustness and ultra-reliability were central to choosing to work with HP"

Dr. Marco Luchini's field of research at Imperial College is in high temperature superconductors (HTSCs). They are at the heart of today's most sophisticated communications — for example, HTSCs are used to filter and separate individual mobile phone calls from the thousands that go through transmission stations on the same frequency at any given moment.

Dr. Luchini's work in advancing the capabilities of HTSCs requires huge calculations. Replacing the massive and expensive mainframe computers that he used to depend on, Dr. Luchini has set up his Beowulf software on a cluster of 16 HP XP1000 workstations, linked by Ethernet and powered by the latest HP EV6 processors.

Robustness and ultra-reliability were central to choosing to work with HP, as he emphasises. "Imagine if a processor went down after five days of calculations and we had to start again!" Instead, he chooses to drive flying machines; HP's sophisticated Alpha technology.

Imperial College

Cambridge University

the hp room

All graduates and senior staff from Cambridge have automatic membership of the University Centre, the long-established reading room and club on the banks of the river Cam. HP is now sponsoring a major new project here, allowing members access to the world's newest and best computer technology.

This HP room is a Cyber Cafe with much more. By day, members can relax with computer games or do some quiet work. By night, the network is transformed into a powerful Beowulf cluster — making it one of the fastest and most powerful processing facilities in the University and capable of meeting the serious demands of the University's top researchers.

"...one of the fastest and most powerful processing facilities in the University and capable of meeting the serious demands of the University's top researchers"

The technology includes nine Professional Workstation SP700s, each providing 500MB RAM and 9GB SCSI hard disk space. There are a further three Public Workstation Facility machines linked to the University's network. HP's ongoing role will be to update the equipment regularly to ensure graduates experience only the most up-to-date systems and software. With Stephen Hawking as a research neighbour, nothing else would quite measure up.

Further details on all of the material in this document can be found on the HP education website **www.hp.com/uk/educationsolutions**
You can also call us on **0870 787 7178**

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