



Case Study: Pate's Grammar School



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Pate's Grammar School

With a history going back to 1574, Pate's Grammar School is one of the country's leading secondary schools. Located in Cheltenham, Gloucestershire, Pate's is a Beacon School with "extra special status" as a language and science college. With 1000 students, 100 staff and 500 desktop computers, Information Technology is the enabler to modern learning at the school.

Motivated by an excellent OFSTED report, the School needed 100 desktop computers to improve a library and language teaching room, plus 18 screens for a sixth form study room. The School needed these desktops to keep pace with growing demand for IT-enabled teaching.

Pate's have a lean IT department with just two specialists managing the entire IT. As Graham Woodsford, Network Manager explains, "We had to come up with a novel way to give us 100 more screens on desks but reduce the work needed to look after them."

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Virtual Servers

The School wanted to invest but the challenge was finding a solution which did not mean hiring more IT staff. Woodsford highlights, "We needed an alternative to conventional PCs because we had a limited budget and we could not overburden the IT team."

The Pate's IT team were aware of virtual computing but it was a meeting with Commercial IT Services, a company experienced in virtual computing technology, which led the school to introduce 100 virtual desktop computers. Woodsford explains, "We had little time to do something over the summer holiday and a meeting with Commercial IT Services introduced the possibility to install virtual computing based on Citrix and VMware."

Citrix XenDesktop is a software technology which delivers the Windows operating system and software applications as an on-demand service to the desktop; removing the need for conventional PCs loaded with software.

Teachers and students access software using a conventional 19" display connected to a ChipPC. The ChipPC connects the display, keyboard and mouse to the network. Woodsford points out, "The thin client saves us space and money because it is the size of a matchbox and uses almost no power."

Commercial IT Services also installed a VMware Virtual Data Centre. VMware is software which minimises the number of server computers by enabling "virtual servers" containing data and applications to run on a reduced number of physical computers. Woodsford highlights, "With the Commercial solution we have a Virtual Data Centre running on two power-efficient HP diskless servers linked to a Storage Area Network (SAN) data store. With this equipment, we save space and money, and we have flexibility to grow in the future."

Interestingly, Pate's did not just use thin client desktops. The School also installed 30 "diskless" PCs using Citrix Provisioning Server to run computer-intensive multimedia applications. Citrix



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Provisioning Server enables the IT team to use the software of a single virtual server on multiple desktops in a scalable and cost-effective way. Woodsford explains, "Thin clients are great for most applications but diskless PCs are the most cost-effective way to run power-hungry applications such as multimedia in the language lab."

Saving cost

Virtual computing uses less electricity than conventional PCs and servers. Woodsford estimates, "Pate's save £4,500 each year in electricity alone. With Commercial's solution, we avoided installing an £8,000 air-conditioning unit in the Junior Library." Importantly, the power decrease helps the School meet its statutory duty to become environmentally sustainable and carbon neutral by 2020.

In addition, virtual computing significantly reduces IT management time and cost compared with managing conventional networked PCs and servers. This enabled Pate's to introduce the 100 extra desktops without hiring another IT staff member. Woodsford explains, "Through the virtual computing project we avoid hiring another IT specialist. This saves the School the continuing annual salary of another staff member."

He points out the saving on IT management time, "The Commercial solution was ideal because, as a network manager, I don't have to spend much time maintaining and managing desktops." The IT team now focus on the back-end servers. Woodsford explains, "I have great flexibility from my office. If a student or teacher has locked-up software, I can unlock it from my desk. We no longer have to visit the classroom or disrupt a lesson to fix a desktop problem."

Another key benefit is reliability. Woodsford explains, "We don't have problems with the new desktops at all. They just turn on and work." Diskless PCs boot faster – in 45 seconds compared with one and a half minutes booting from their own hard drives.

Flexible teaching and security

Big benefits come from lesson flexibility and software mobility. For example, teachers may need Windows XP for an English lesson and Linux software for a Design and Technology workshop.

Woodsford explains, "Now we can respond faster to teaching needs. With a few mouse clicks, we can change the operating system and software for a new lesson." The next time the teacher starts the thin client or PC, they have their new teaching environment ready-to-go."

A challenge with school computing is some students play games, accidentally introduce viruses and corrupt software. Virtual computing delivers a new desktop environment every time a student starts working, removing any student-introduced problems. Woodsford explains, "We avoid having to clear games, spyware and viruses from what would have been 100 PCs. This is a huge saving in IT management time and reduces security risk."

The school's underused Junior Library is now the teaching room of choice. Woodsford explains, "We now have an attractive teaching space used 80% of the schoolday because it is so flexible and can be for used for many different classes."

Why Commercial IT Services?

Choosing the right supplier was important to Pate's. Woodsford explains, "We worked well with Commercial IT Services from start-to-finish. They knew exactly what they were doing and the project management was excellent." It's interesting to understand how the project with Commercial IT Services has taken a burden off the IT team at Pate's. Woodsford explains, "I don't have to worry about the virtual computing. If I have concerns, I call Commercial and they address any problems." He summarises, "It's been a stress free experience."

What next?

With the confidence gained from the project, the Pate's IT team plan to extend the virtual computing platform. Woodsford explains, "It's modular technology. We have enough back-end server power to expand and add more desktops." As part of their five-year IT replacement cycle, the School plans to renew another library and equip two further classrooms.

For Pate's, the transition from conventional networked PCs to virtual desktop computing has been easy. Woodsford finishes, "The virtual computing project with Commercial has been successful and not as stressful as I thought it would be. In the end it has been a pleasure to see the new system go in and work so well."

Lessons learned

Make sure you find a supplier experienced in virtual computing. Woodsford explains, "There is an advantage in using professionals like Commercial. Commercial understood what we needed and delivered it. The project was on-time and in-budget. It just works."

When deciding on virtual computing, consider the balance of thin clients to diskless PCs. Woodsford explains, "Thin clients are fine for Microsoft Office applications and web browsing. However, it's better to stream the desktop environment to diskless PCs for computer-intensive applications such as multimedia."

Unless you have sufficient experience with virtual computing, it is best not to do-it-yourself. Woodsford points out, "Although we could have done it ourselves, the benefit of having Commercial IT Services is that it was done right and done right first time."