



**Kingston  
University  
London**

## Kingston University to transform student learning experience with mobile working and BYOD using VMware® Horizon™ 6 and Atlantis Computing

### INDUSTRY

Education

### CORPORATE HEADQUARTERS

Kingston upon Thames, London

### WEBSITE

[www.kingston.ac.uk](http://www.kingston.ac.uk)

### OBJECTIVE

Kingston University was looking to completely transform student experience through technology, so that each student could access mobile working, BYOD and course-related applications from anywhere at any time. The university was ultimately looking to increase its competitiveness and provide one of the strongest technology solutions amongst UK universities.

Additionally, the IT department was keen to explore new ways of managing its desktops that would help increase efficiency while saving time and resources. The IT department wanted to move towards a service-provider model - aiming to offer users a framework in which they can set up their desktops and application mix to suit their individual needs.

As part of a campaign to position itself as the university of choice for today's increasingly tech-savvy market, Kingston University is now using VMware Horizon 6 to transform the way IT services are delivered to its students and staff members. By allowing access to course materials and graphic intensive applications remotely and from any device, Kingston University has allowed its staff and students to work and study in the way which best suits them.

Additionally, the university has been able to manage its 7,000 physical desktops from a central management console, drastically cutting the time it takes to provide software updates including major operating system upgrades (Windows XP to Windows 7), bug fixes, repairs and full system recovery. The IT team is also able to start-up and recover individual desktops in less than a quarter of the time previously taken, enabling Kingston to devote IT resources towards innovative new projects. This VDI environment is supported by Atlantis' virtualized storage solution to ensure optimum performance of the virtual PCs.

Based in Kingston upon Thames, UK, Kingston University has more than 20,000 students and more than 2,000 staff members spread across four separate campuses. Founded as the Kingston Technical Institute back in 1899, the organisation was granted university status in 1992.

Kingston University offers a diverse and comprehensive range of full and part-time courses for both undergraduate and postgraduate students. Additionally, it offers a range of foundational courses and continual professional development programmes.

### Organisational challenges

Responsible for the IT infrastructure and services across the campuses - including data transmission, storage and security - Kingston University's IT department found that servicing so many end-users could be a real challenge; particularly with a team of only six members of staff to manage its 7,000 desktops.

"Our end-users now rely on IT in a way they didn't even just five years ago," explains Simon Harrison, CIO, Kingston

University. "We essentially have three distinct communities demanding IT services - students, academics and administrators. All three expect increasing levels of mobile working, whether that's across the various areas of campus, in university halls, or on an international basis, for example with international students returning home for the holiday or academics presenting their work at conferences across the world. We wanted an IT solution that could accommodate this rising demand for mobility and flexibility and offer users seamless access to their university desktop," explained Simon.

The university IT department also wanted to move away from the traditional user-centric model and reposition its role as a service provider. This would ensure that the department could offer a better level of service to both staff and students and in a faster and more efficient way.

### New Student Demands

"The old model no longer worked for us - students expect the same level of technology they have at home. Technology now seems to be firmly

## VMWARE CASE STUDY

### SOLUTION

To achieve this, Kingston University embarked on an overall IT refresh. Kingston University wanted to offer students and staff the opportunity to access their university desktops and use any university application while working remotely on any device.

It deployed VMware Horizon 6 (with View) to offer end-users a virtualized desktop solution and the ability to use any device from any location to access applications and other learning tools. VMware Mirage was also used to help streamline the desktop maintenance process for the IT team.

### ORGANISATIONAL IMPACT

- Staff and students are now able to access their university desktops – complete with nearly 1000 different applications including graphics intensive CAD programmes – from any location and on any device
- Time taken to update devices reduced by 80%, from four hours to below 40 minutes; while OS migrations cut to just 40 minutes
- Cut resource demands for maintaining desktops – freeing up an IT technician's job role to focus on improving services for students

### SOLUTIONS USED

- VMware Horizon 6

integrated into a student's hierarchy of needs – second only to food and shelter – and is a major deciding factor in whether a student chooses to study at your institution.”

“From the moment they arrive to the day they graduate we want to make sure students don't ever experience a second of frustration with our IT facilities. From email access to social media, we want everything to run smoothly. Supporting laptops, tablets and smart phones, we knew we would have to deliver an IT experience that could accommodate any number of different working methods.”

### IT administration burdens

While the IT team was keen to focus on innovation and delivering new ways of working, much of their time was taken up with maintaining the university-owned desktops and laptops which are available for students to use. Deploying desktop images was also a particularly difficult challenge - with the base image requiring 35GB of data over a much slower network, it would often take up to four hours to deploy.

“Back in the first quarter of 2014, the team had to manage software updates for 800 machines which was an extremely onerous task. In all it took almost 1,200 hours during a three-month period,” explains Dan Bolton, End-User Computing Solutions Manager at Kingston University.

“Not only was it an exceptionally slow process as each image had to be tied to a desktop; if anything went wrong - due to software corruption, a virus, failed hardware – then everything had to be reinstalled. It was impossible to keep up with, which meant that a number of machines were frequently being left out of order for several weeks until we could physically get there to fix them. This meant there were fewer PCs for our students to use to access crucial facilities.”

PC compliance was also a serious issue. The update process was done through push technology, meaning that patching and security updates could be very hit or miss as any interruption (such as a student turning off the machine midway through the process) would halt the upgrade.

“We lacked the resources to manually update all desktops, so some of our staff were continuing to use machines that were years out of date, which meant they were less responsive – not to mention the threat of serious risks to our data security,” adds Bolton.

### Restrictive user experience

Additionally, due to the graphically intensive nature of a lot of student work, the previous desktop software, Quest Software's vWorkspace, could be restrictive on user experience. vWorkspace struggled to access applications which required graphic acceleration, many of which, such as CAD programs, were integral to the students' learning experience. Instead, the IT department was forced to dedicate specific PCs for specialist applications, often leaving students to queue for PCs in labs in order to access the tools they needed to complete assignments.

### The solution

At the start of 2014, Kingston University embarked on an ambitious technology refresh strategy. Aiming to develop a technology solution that would not only better service the needs of current students but also attract new prospects, the IT department rebuilt its infrastructure from the bottom up. The Kingston IT team oversaw the re-cabling of the university; providing high speed web and data access to the entire campus enhanced with the introduction of more than 4,500 wireless access points. Additionally, servers, storage and back-up hardware were all replaced, providing a robust and resilient foundation for a seamless end-user experience.

Harrison explains: “An important part of the challenge was that we wanted a single solution that could help us manage both a physical and virtual environment. With this in mind, we quickly began looking at VMware Horizon 6.”

### Improving the User Experience

While the initial technology refresh provided the infrastructure for a faster system which offered better connection for students, the university also wanted to build on the improved IT experience

***“Technology is absolutely essential for both attracting students and ensuring they have the best academic experience. We strongly believe that universities have to constantly evolve their entire technology offering - from infrastructure and networking, to the applications they make available and how they are accessed - if they are going to remain competitive and meet the expectations of new and prospective students. VMware Horizon 6 allows us to give students the freedom to work from any location - whether that is on campus or at home - while still being able to access their university desktop, complete with all the applications they need for their course. With VMware Horizon, I believe Kingston University offers one of the country’s most complete and compelling access to learning environments in the UK.”***

Simon Harrison, Chief Information Officer, Kingston University

that the infrastructure refresh could offer end-users, ensuring that students and faculty could work in the way they wanted to.

The university chose the storage software provider Atlantis Computing to help overhaul its IT infrastructure, consolidating its data centre and simplifying the storage environment to provide a solid and reliable base for VMware’s virtualized desktop solution.

“We’d already invested significant amounts of time and resource in bringing the university’s IT estate up to date - we wanted to make sure that end-users could directly benefit from the refresh. While we did consider Citrix, we felt Horizon 6 represented a best-of-breed virtual desktop solution,” said Harrison. “It offered the technical capabilities we needed and also allowed us to reduce the number of point solutions we were using, simplifying our overall IT estate. Choosing VMware meant we now had a strategic partner. Not only had we used Horizon 6 to power the Virtual Desktop, but VMware underpinned our data center operations; the company’s vision really aligned with our vision for the desktop and datacenter of the future.”

### **Streamlining Update Processes**

To reduce the amount of time it took the IT department to handle the desktop imaging processes and ensure that all computing environments were kept up to date and compliant, Kingston University also deployed VMware Mirage across 7,000 desktops. “Although we considered products from Quest and Microsoft, VMware was the obvious choice as we would be able to group everything into a single deployment strategy. VMware Horizon allows us to streamline our update process and release time spent on maintenance tasks and to invest in innovative IT projects that can continue to improve end-user experience, including online lecture materials and greater collaboration tools between students, academics and teaching staff.”

### **Students and Staff Working from Anywhere, on Any Device**

Working with VMware has completely transformed the student experience at

Kingston University, providing levels of technology that match - or even exceed - the personal expectations of students and the kind of technologies they will experience in their future workplaces.

Harrison explains: “The work we have carried out with VMware means that we have been able to fully embrace ‘Bring Your Own Device’ at Kingston University and provide our students with next generation learning tools. They can access everything from 3D applications to virtual learning environments specific to their university course from any device and any location, which means they can work at a time and place that suits them. We’ve had great feedback from users with many commenting on how seamless the transition is between working on campus and working remotely; for example, we have students working on their Chromebooks at home who report that it is just like being sat in the Library at university. Having simple things such as campus-wide Wi-Fi also provides essential connections to friends and family, as well as better collaboration with lecturers and each other. Many students have said that this technology is really driving their learning experience and they are very proud to attend such an innovative university.”

“Horizon allows us to deliver the technology experience our students really need - we want IT to be seen as an enabler in helping students, our main customers, to concentrate solely on their studies without growing frustrated by a lack of PCs or an inability to access the applications they need to complete coursework.”

For Kingston University’s administrative staff the investment is already paying off. During the university clearing period (a process which allows students without offers to secure a place on a university course for the next academic year) the university’s workforce needs to be expanded for a short period in order to deal with the volume of requests. Complementing the use of a separate off-site facility, the Kingston University IT team was able to scale capacity with ease giving incremental staff full access to a virtualized desktop environment - allowing them to begin working with little to no transition to meet the increased demand.

### Making Life Easier for the IT Department

Harrison also cited the value that Atlantis Computing had delivered for the university: "Being able to rapidly expand storage has been crucial and is something that we couldn't have done with a huge amount of investment in our physical infrastructure. From an end-user point of view, we're now able to offer an SSD-level performance, with login speeds on shared PCs reduced from several minutes to less than 15 seconds, allowing students to access their desktops much quicker. Atlantis allowed us to do this at a hugely cost effective rate while reducing the physical space the infrastructure takes up."

Moreover, by implementing VMware Mirage, Kingston's IT department has been able to cut the time needed to refresh the desktop: "VMware Horizon allows us to manage our entire physical desktop estate across all four campuses and various satellite offices from the operations centre. While before it could take up to four hours to apply a desktop image, it is now less than 40 minutes - that's more than 80% faster. PCs no longer sit around waiting to be fixed; if hardware breaks we can quite easily provide a new device, and within a short time access the old persona. With 7,000 desktops across the university, this is saving us significant technician time each month. The fact that we can also use VMware for unified image management across both multiple physical and Horizon virtual desktops saves us an incredible amount of time as we can apply the same updates across all PCs at once," explains Bolton.

CIO Harrison adds: "It has also enabled us to release funds that we're now redeploying into new projects - we're currently building our business intelligence solution and offering new analytics capabilities to our senior management who can, in turn, exploit insightful information when making strategic decisions."

### Bringing in New Prospects

Improvements to Kingston University's IT system are also expected to drive a positive impact on prospective student applications, with the team hoping that

the investment will pay off in improved fee revenues from increasingly tech-savvy students being attracted and retained by the university's facilities: "I fully believe that Kingston University now offers one of the best IT services of any university within the UK - it's something we're immeasurably proud of and our IT service offerings now play a key role in our marketing and retention propositions."

"The NUS National Student Survey includes a section on technology facilities - I'm certain that our rating in the 2015 survey will continue to rise over the next five years due to the investment we have made in meeting - and exceeding - student expectations."

### Future

Kingston University's IT team viewed the initial EUC project with VMware as the first step towards a single-vendor strategy, and a crucial part of its journey towards a fully software-defined organisation. With its End User Computing elements, from desktops through to mobile devices, now software-defined with VMware, the university continues to develop its own Software-Defined Data Center, with VMware vSphere Enterprise Plus as the underpinning infrastructure to enable more automated management within its data centers and the deployment of a private and hybrid cloud strategy.

