

Nottingham Trent University

## University Turns Virtual Learning into an Academic Reality



Published: June 2003

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***Universities and other Higher Education institutions are under more pressure than ever to attract new students. As the popularity of distance learning courses increases, they must address the needs of this audience or risk losing out to other universities in what has now become a very competitive marketplace. To meet these challenges, and government objectives, Nottingham Trent University has created a Virtual Learning Portal (VLP) built on Microsoft Exchange Server 2000.***

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### **Situation**

Educational institutions from pre-school to post graduate are under increased pressure to do more with less and optimise teaching methods through the use of innovative technologies. New government legislation and demand from the business world mean students leaving education must do better across the board in academic subjects in order to compete effectively in the workplace. They must also be increasingly IT literate. To help students achieve this, universities and schools are turning to IT and the Web to meet their needs.

The far-reaching benefits of e-learning are of great interest to the government and academia. Nottingham Trent University has embraced this vision and has created an Institutional Learning and Teaching Strategy (ILTS) 2000-2005. This essentially means that the university is committed to meeting, and exceeding, government expectations.

Back in 1997, Nottingham Trent decided to implement a university-wide email system for staff and students. It looked at the solutions on the market and implemented Microsoft® Exchange Server 4.0. This project proved very successful and within 18 months, every student and staff member had email access from 30,000 inboxes. In time, the system was upgraded to Microsoft Exchange 5.5.

Richard Massey, IT Development Group Manager, says: "We were then faced with the question of what to do next. We started investigating what we could use Exchange for on top of email. As demand for education increases, we saw e-learning as a way of satisfying that demand and better supporting our existing students with their studies. So we embarked on a project to create a Virtual Learning Portal (VLP) as part of a managed learning environment (MLE)."

### Solution Overview

#### **Customer Profile**

The Nottingham Trent University gained university status in 1992, but its history goes back as far as 1881. It is one of the largest universities in the country and has more than 25,000 students. The university has 26 departments grouped into eight academic schools.

#### **Business Situation**

The university wanted to ensure its students were fully supported throughout their academic studies. It also wanted to stimulate enthusiasm and retain existing students and attract new ones.

#### **Solution**

Nottingham Trent has evolved its use of Microsoft Exchange from a simple email system to a fully fledged virtual learning portal (VLP) based on Microsoft Exchange Server 2000 and Microsoft Windows to enhance the staff and student experience and meet government objectives.

#### **Benefits**

- Greater student reach – now students both at home and abroad are equally supported 24/7
- Greater awareness of potential learning difficulties thanks to tracking tools
- Digital delivery for students of the digital age
- Meeting government objectives
- Personalisation of learning environment

#### **Software and Services**

Microsoft® Exchange 2000 Server  
Microsoft Windows® 2000  
Microsoft SQL Server™ 2000  
Microsoft FrontPage 2000  
Microsoft Site Server

## **Solution**

In 2000, Nottingham Trent created a trial portal based on Exchange 5.5 with 1,000 students and 30 members of staff as users. The feedback from this project was incredibly encouraging, so the university started to look at the market for ways to expand the portal university wide. It considered building a portal from scratch and off-the-shelf products, but the former would have been time consuming and costly, and the latter may have restricted functionality and future scope. Nottingham Trent decided on a building block approach to create a best-of-breed system with the right price, the right development effort and the right features.

Microsoft Exchange Server 2000 was selected to complement the university's existing skill set and deliver the capabilities it required. In September 2002, the university-wide project went live.

Exchange delivers anywhere, any time communication and is highly scalable, which is very important for institutions such as Nottingham Trent who do not want to lose students, and therefore government funding, simply because there is not enough room on the server for another mailbox. Public folders created in the Exchange 2000 Web store form the backbone of the VLP, delivering a highly resilient and extensible infrastructure for teaching and learning content, revision notes, news, and emails. The ability to spread and replicate educational material over many servers with a single continuous directory listing and integrated indexing makes Exchange an ideal platform for meeting e-learning objectives.

The VLP runs on Microsoft Windows® 2000 and is supported by Microsoft Internet Information (IIS) Server 5.0. The front end has been designed using Microsoft FrontPage 2000, Macromedia Fireworks 4 and Microsoft Visual Interdev. Management information for portal customisation and student tracking is stored in Microsoft SQL Server™ 2000.

Students access the portal by entering their normal Nottingham Trent network user name and password and are directed to the learning room containing information about the course they are studying with links to resources, modules, email and news. There is also a search facility within Nottingham Trent public folders, sites and links to search engines as well as FAQs on support.

## **Benefits**

### **Passion for Learning**

Today's students are increasingly computer literate. Many have a PC at home and are used to surfing the Web or using email to conduct activities that were previously paper-reliant. It follows that children of the digital age embrace the digital delivery of study materials. Incorporating a Web-based portal into their academic lives is a natural progression.

"More than 50 per cent of students have used this system, and that's just the beginning. Obviously we would like to see 100 per cent usage. Students use the VLP for some subjects where material has been posted, and are proactively approaching tutors to do the same for other subjects, which is very encouraging. It shows an enthusiasm for learning, which is very refreshing and good to see," says Massey.

### **Inclusive not Exclusive**

A world where everyone has access to a level playing field as far as education is concerned may be some way off, but the university is doing its bit to ensure that all students gain access to e-learning, regardless of age, ability or whether full or part time. This ensures that the university is complying fully with the Disability Discrimination Act 1995 and the Special Educational Needs and Disability Act 2001.

*"We are investing in their future by teaching them, and that should be reflected in the technology we use. We have something that is resilient, reliable and good quality, and reflects the audience we are trying to reach."*

**Richard Massey**  
IT Development Group Manager  
Nottingham Trent University

Wendy Hannah, Software Support Analyst at Nottingham Trent, says: “We have an area called My World on the VLP which is very popular as it lets staff and students personalise the way they see the portal. This ranges from favourite colour scheme to cater for dyslexic students to a larger screen display for people with visual impairments. So it’s very friendly for all our students. We also offer one-to-one training for anyone who needs to learn how to use the portal and have user guides available.”

Students outside of the university campus, whether at home for health reasons, or abroad and following distance learning programmes are also fully supported. This enables the university to extend its potential reach.

### **Support Students, Overcome Problems**

It is often hard for students who fall behind or have difficulties understanding a subject to come forward and talk to tutors. But thanks to the VLP and its tracking tool, staff can monitor progress and keep an eye out for where extra help may be needed.

“We can share revision materials online and track to see who is using the materials and how often they visit them. This way tutors can see if someone is having problems with a particular module or topic and provide necessary additional support,” says Hannah.

### **Easy to Use**

The VLP has been described by the university as being “like a briefcase where all kinds of material can be securely stored, but easily accessed by students.” Usability was a major consideration, and user feedback was key in the design and build process.

Craig Gibson, Developer at Nottingham Trent, says: “Once students are registered in the central student tracking system (Banner 2000) they are automatically added to the portal, given the university network Usernames and Passwords and can get straight into the VLP and use it. It is very easy to use as it’s based on the familiar Exchange environment.”

Adoption rates are further testament to the portal’s popularity. Massey says: “The reaction so far is better than we had hoped in its first year, but we expect it to rise significantly next year. Since September, we have had 425,000 log ins by 10,000 students and 623 staff. More than half (60 per cent) of people are accessing the portal from on campus with the balance (40 per cent) gaining access from outside the university via the Internet. At present about a quarter of all modules (700) have some content available online, and we are continuing our efforts to encourage more academic staff to load material. Students can access it from anywhere they want in the world.”

### **In-house Development for Flexibility and Reduced Costs**

Because the VLP was developed internally, Nottingham Trent can adapt to change and add new functionality to the portal when it needs to. Thanks to its open architecture, Exchange is flexible enough to integrate with other products. Nottingham Trent has already integrated Question Mark Perception into the VLP to provide an assessment and feedback tool and further work is currently in progress to link the Facility timetabling system and other university wide systems.

Massey says: “For Higher Education institutions, cost is always an issue. That is why we have to select technology that will give maximum return to all concerned—staff, governors, and students. We are investing in their future by teaching them, and that should be reflected in the technology we use. We have something that is resilient, reliable and good quality, and reflects the audience we are trying to reach.

“I think we will see great changes in e-learning in the next 2-3 years. A VLP that integrates with existing systems, houses material and enhances study will help us greet these changes.”

Find out more at <http://devgroup.ntu.ac.uk/support/overview.pdf>

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**Wendy Hannah**  
Software Support Analyst  
Nottingham Trent University

Microsoft Exchange 2000 Server provides rock-solid messaging and collaboration 24 hours a day, seven days a week—with low total cost of ownership. Designed with mission-critical performance in mind, Exchange enables access to the people and information you want, anytime and from anywhere. Combining industry-leading reliability and scalability with unmatched ease of management, Exchange 2000 seamlessly integrates with the Microsoft Windows® 2000 operating system and takes advantage of the full power of the Windows 2000 Active Directory® service and security features. With Exchange 2000, businesses can further leverage their messaging infrastructure with value-added collaborative solutions. Exchange 2000 is part of Microsoft's .NET Enterprise Server family for building, deploying, and managing next-generation integrated Web experiences.

For more information about Microsoft Exchange 2000 Server, go to:

<http://www.microsoft.com/exchange/>

### ***For More Information***

For more information about Microsoft products and services, call the Microsoft UK Education Contact Centre at 0870 60 70 800. To access information using the World Wide Web, go to:

<http://www.microsoft.com/uk/education>

For more information Nottingham Trent University, visit the Web site at:

<http://www.ntu.ac.uk/>

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