



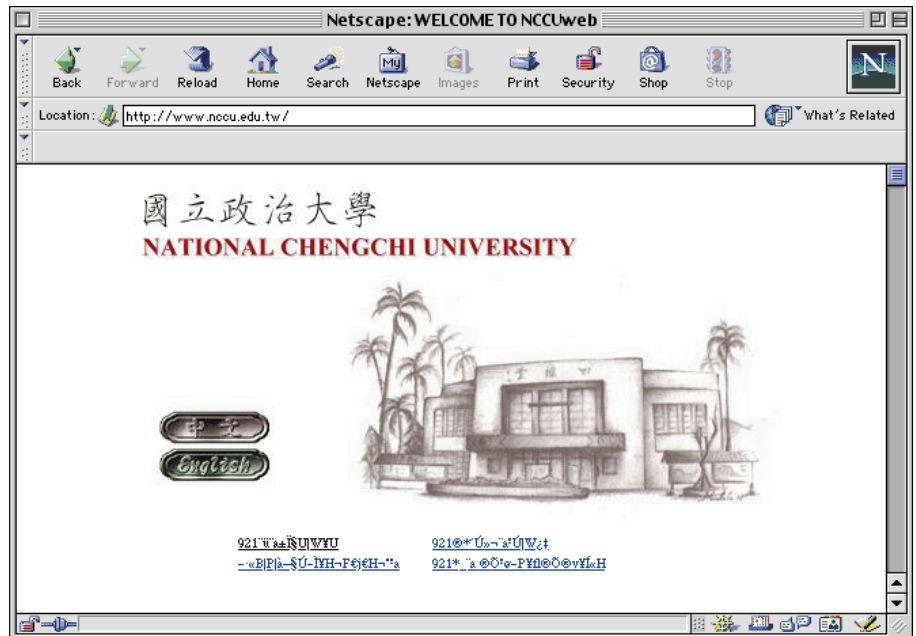
Chengchi University creates virtual classrooms with IBM e-business solutions.

Application	Distance learning, data warehousing instructional program
Business Benefits	From distance learning: 100 online classes available; 20,000 transactions per hour during peak registration periods; From data warehouses: teaching tool
Software	IBM WebSphere™ Application Server, Standard Edition IBM DB2® Universal Database™ for Windows NT® IBM VisualAge® for Java™ IBM Visual Warehouse™ IBM DB2 OLAP Server™ IBM Intelligent Miner™ for Data and for Text Lotus® Domino™ Lotus Notes® Lotus LearningSpace
Hardware	IBM RS/6000®

With each downloaded course syllabus and every group paper completed through e-mail exchanges, the Internet is revolutionizing education throughout the world. Campuses across the globe are forging ahead to get connected, providing their students with high-speed Internet access and their own e-mail accounts. In quite possibly one of the most sophisticated examples of this online transformation, students are attending virtual classes — taught miles away — from the convenience of their home PCs.

“As we make more courses available online and increase our virtual student population, we’re expecting distance learning to be a money saver and a significant revenue source for us.”

– Professor Wenching Liou, Director, Computer Center, National Chengchi University



From distance learning to data warehousing, National Chengchi University counts on IBM e-business solutions to power its programs.

It's about business, not just technology.



From a laptop or a PC, National Chengchi University students can view some of their lectures online through a new distance learning program.

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—Professor Wenching Liou

On the cusp of this distance learning evolution is National Chengchi University in Taiwan. Nestled at the foot of Mt. Chihnan, the institution has launched 100 online classes since starting its program two years ago. Having undergone name and location changes and even a temporary closure in its 70-year history, the university has thrived on one constant thing—its commitment to quality education. To remain one of the country’s finest universities, National Chengchi University recognizes that it must embrace innovative information technology (IT) developments like distance learning to enable more people to take advantage of its academic offerings—without having to alter their busy schedules to fit in traditional class times.

When choosing an IT solutions provider for its distance learning program, National Chengchi University looked no farther than the company with which it has maintained a long and successful partnership—IBM. The university uses many IBM business intelligence solutions as teaching tools, so it is familiar with the quality of IBM products. To build its virtual classrooms, the university implemented Lotus LearningSpace, Lotus Notes and Lotus Domino, enabling its students—many of whom are full-time professionals—to balance their working lives with their academic pursuits.

“So far, up to one-third of our students are taking advantage of our distance learning offerings,” notes Professor Wenching Liou, director of the university’s computer center. “As we make more courses available online and increase our virtual student population, we’re expecting distance learning to be a money-saver as well as a significant revenue source for us.”

Class time is anytime

National Chengchi University’s online course catalog covers a wide spectrum of subjects, from mathematics to languages. Online courses are videotaped and transmitted over the Internet using Lotus LearningSpace software, which enables the creation and delivery of asynchronous instructor-facilitated and self-paced learning.

Using Lotus LearningSpace, the university has enabled students to attend classes and interact with instructors and other students at their convenience rather than at a predefined time and place. Registered online students simply log on to the university’s intranet using Lotus Notes.

The Web-ready LearningSpace solution features four modules that the university used to create its online courses. The Schedule module guides students through course objectives, assessment procedures and assignments. The MediaCenter provides immediate, searchable access to course materials—lecture notes or supplemental readings, for example—posted by professors. This eliminates the need to photocopy such documents.

Asynchronous discussion takes place in the CourseRoom, while the Profiles module provides a place where students can post information about themselves and their interests — an electronic “meet-and-greet” function. LearningSpace runs on a Lotus Domino server and is integrated with Lotus Notes, which provides the groupware and replication features the solution requires.

“Our professors are very satisfied with LearningSpace,” says Liou. “We have English and Russian professors who are assigning their students to post recordings of their recitation homework online using the solution. This gives the professors an easy way to check students’ progress, especially since they don’t meet in a physical classroom.”

Students can register for LearningSpace classes online through the university’s Web page. To enable this capability, the university must export student information from the academic administration and management system, which runs on IBM RS/6000 servers, and enter it into Lotus Notes manually.

Creating an alternative with WebSphere

The university has created a second distance learning application using IBM VisualAge for Java and IBM WebSphere Application Server, Standard Edition. The application had originally been created with Microsoft products, but the ensuing system was unable to handle heavy usage. The WebSphere solution offers the convenience of connecting directly with the administration and management system, thus eliminating manual information entry.

Says Liou, “WebSphere [Application Server], with its support for Java technology, provides the ease of use we needed in a Web application development tool, enabling us to implement our in-house developed distance learning application quickly. During peak registration periods, our WebSphere application supports up to 20,000 transactions per hour.” Liou notes that he plans to migrate to WebSphere Application Server, Enterprise Edition, so the university can further develop its distance learning application with Enterprise JavaBeans.™

Most of the professors offering online classes are using the LearningSpace solution, which provides different capabilities than the application created with WebSphere Application Server. Notes Liou, “One of our math professors can post very complicated mathematical formulas online using LearningSpace, something that cannot yet be done with our in-house application.” The university will continue offering professors a choice between either application.

“Visual Warehouse... makes it easy to populate the data warehouse with data residing in DB2 Universal Database. And DB2... has demonstrated itself to be a very robust data management solution.”

– Professor Wenching Liou



National Chengchi University students can study together in-person and attend some of their classes online.

Hands-on data warehousing experience

National Chengchi University has developed a successful partnership with IBM, using many IBM products in its classrooms. Computer science students, for example, build data warehousing solutions for Taiwanese companies using IBM business intelligence solutions. Graduate student John Wang built a data warehouse with IBM Visual Warehouse and IBM DB2 OLAP Server for a color-dye company that wanted to analyze its sales reports and other financial data.

“The color dye company is pleased with the speed at which it can analyze its sales figures from different angles — by time of the year, by location or by product, for instance,” notes Wang. “As for me, I have broadened my horizons with the education I’ve received on IBM business intelligence solutions. I hope this will create more opportunities for me in the work world, since I have these skills to share.”

The students can also develop and deliver applications using IBM Intelligent Miner for Text and IBM Intelligent Miner for Data for companies that need data mining. Alumnus Edward Keh used Visual Warehouse, DB2 OLAP Server and Intelligent Miner for Data to build a data mining application for the bank that is now his employer. The bank is currently testing the system, using it to analyze its loan, credit card, mutual funds and other product information. In return for the valuable hands-on experience that students gain, some of these patron companies have made donations to the university over the past year.

The university itself uses a data warehouse powered by DB2 and Visual Warehouse for budgeting purposes. Staff members use IBM DB2 OLAP Server to analyze aggregated departmental budget requirements.

“Visual Warehouse is an excellent learning tool for our students. It is easy to use and comes with a very intuitive user interface, which makes it easy to populate the data warehouse with data residing in DB2 Universal Database,” notes Liou. “And DB2 Universal Database has demonstrated itself to be a very robust data management solution — in fact, we are considering migrating our academic administration and management system to DB2.”

Building its future with IBM

Looking toward its future, National Chengchi University will continue to expand its online course offerings and is pursuing partnerships with companies that are interested in offering the university’s classes onsite to their employees. The institution is also developing a synchronous distance learning classroom, enabling the campus to link up in realtime with other colleges and universities.

Educating thousands of students each year, National Chengchi University will continue to strengthen its academic core by partnering with organizations like IBM. “IBM is a company with a solid future that we can place our trust in,” says Liou. “Whether we are expanding distance learning, bolstering our repertoire of teaching tools or developing other new applications, we know we can rely on IBM for powerful products and excellent support.”

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