The Extensive Application of ICT in Learning Support

Practice and Exploration of Modern Distance Education in STVU

Prof. Chen Xin
Shanghai TV University
THE APPLICATION OF ICT IN LEARNING SUPPORT

- Fundamental strategy in setting up ICT-based learning support mechanism
- Fundamental framework of the information-based system
- Features of the information-based system
- Enhanced exploitation in ICT application to facilitate the education reform
- Fundamental guarantee of ICT application
- Scientific development strategy of ICT application
1、The Fundamental Strategy of Setting Up ICT-based Learning Support Mechanism
1. The Fundamental Strategy of Setting Up ICT-based Learning Support Mechanism

- Scientific
- Targeted
- Efficiency
- The holistic plan
- step-by-step implementation strategy
- Innovation in ICT application
2. The Fundamental Framework of Information-based System
2. The Fundamental Framework of Information-based System

Network

Service

Platform

Application

Resources
2.1 Network

- Up till 2009, the network of STVU consists of four branches, which are connected by four Cisco 7609 routers in a double directional structure with each link in gigabit Ethernet.

<table>
<thead>
<tr>
<th>No.</th>
<th>Equipment Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>routers &amp; network equipment</td>
<td>168 set</td>
</tr>
<tr>
<td>2</td>
<td>servers</td>
<td>110 set, with 8 blade systems</td>
</tr>
<tr>
<td>3</td>
<td>storage system</td>
<td>4 systems, with a capacity of 20TB</td>
</tr>
</tbody>
</table>

STVU Network Equipment, 2009
Network Topology of STVU
Technical equipments are installed as follows:

- The deployment of various network exits meets the demands of all kinds of external links from students and guarantees the multi-connections between campus networks.

- The deployment of a double directional structure ensures the normal working condition of the core network of STVU.

- The installation of the link flow control equipment guarantees the normal online teaching activities by balancing the traffic volume of in-and-out.

- The deployment of antivirus hardware and software has effectively curbed the outbreak of the virus within the campus network and external hacker attacks.

- The deployment of anti-spam gateway has effectively filtered a lot of junk mails and ensured the communication.
2.2 Platform

- The learning platform is of an integration of teaching, administration and other service systems

- Till the end of June 2010
  - The University’s website has been visited \textbf{1,39\,million} times, taking the lead in China
  - The overall ranking of \texttt{www.shtvu.org.cn} on Alexa.com is \textbf{181,838}
  - The overall ranking of \texttt{www.shtvu.edu.cn} on Alexa.com is \textbf{274,860}
2.2 Platform

- The teaching platform of STVU bears the following features:
  - One-time-login learning portal with ID authentication
  - Essential platform to offer diversified support
  - Database standardization to solve information islet problems
  - Guarantee system of online teaching
2.3 Resources

- **Proposal**: approximately ‘50% of the effort should be spend on the application and promotion, 30% on the software development and 20% on the hardware construction’

- **Particular Emphasis**: the building of resources like web-course, multimedia courseware, case library and online self-assessment
2.3 Resources

- **Online Learning Resources** (till the end of 2009)
  - Guided Learning Resources: 1,339 online classes with nearly 500 updates every term
  - Supported Learning Resources: online-assessment of nearly 300 courses
  - Online Library: e-book of 12,164 kinds (24,328 volumes), and e-journals of 8,115 kinds with application of VPN, which allows easy access to off-campus teachers and students
  - Online Video Resources: up to 300 periods of viewing time on EVOD, 3,000 periods on stream media resource and 350 periods on multimedia courseware
2.3 Resources

Online Learning Resources （till the end of 2009）
- Network Courses: 96 full online courses, 5 online experiment systems, 4 case banks, and 15 other learning websites of different academic departments

Off-line Learning Resources （till the end of 2009）
- Multimedia courseware CD: 37 CDs of multimedia courseware
- Learning package: learning packages for 30 courses
- Mobile learning materials: 500 mobile resources
2.4 Application

- Online Class (Main Campus)
- Online Class (Branch Campus)
- Service System for Faculty Seminars on Teaching and Researching
- Service System for Returning Students
- Advisory Service System for Graduation Project (Thesis)
- Enrollment System
- Curriculum Plan and Course Management System
- Test Control System
- Service System for Course Credit Transfer
- Mobile Campus
- Online Practice Education System
Online Class (Main Campus)

The **Online Class** of main campus is used to provide all kinds of learning resources, to conduct online teaching and to release and maintain curriculum information by course coordinators.
The **Online Class (Branch Campus)** provide a platform for academic administration over branch schools in curriculum arrangements and teaching organizations in STVU.
Service System for Faculty Seminars on Teaching and Researching

This system provides a platform for communication between course coordinators of STVU and local tutors in branch schools
The service system for returning students is used particularly to offer support to the returners.
Advisory Service System for Graduation Project (Thesis)

This system serves for the communication between thesis instructors and students and communication between course coordinators and thesis instructors.
Enrollment System

The system serves for real-time control and instant management over the enrollment of STVU
Teaching Plan and Course Management System

The system serves for informationized management of seven aspects relating to curriculum and course management.
Test Control System

The system mainly serves for the management and communication between STVU and test venues during each examination time.
Service System for Course Credit Transfer

The system is used to manage and exchange information on credits between STVU and the branch schools.

2010/7/19
Service System for Mobile Campus

This system serves for the management of information on academic affairs, the communication between academics and class counselors, and scores inquiry.
Online Practice Education System
Online Practice Education System
2.5 Service

- Improvement of the ICT Service Function in STVU
  - One-stop Service Center
2.5 Service

- Improvement of the ICT Service Function in STVU
  - Establishment of One-stop Learning Support Center at each branch school
  - Establishment of STVU Education Information Center
  - Establishment of the Distant Reception Center
Provision of Necessary ICT Service for Learners

ICT service provided to learners at the beginning of their study includes:

- training on skills to do online learning
- training of skills to obtain multimedia learning resources, learning support information and course information
- training of skills to utilize teaching facilities
Provision of Necessary ICT Service for Learners

ICT service provided during the learning process:

- guided-learning resources at Online Class
- teaching platform, emails, telephones, short messages, BLOG and WIKI; online formative assignments and self assessments
- following-up each learner’s learning progress by the Academic Management Software applied by the University
- tracking learners online learning records, assignments and test scores
Guaranteed ICT Service

- The university is equipped with E-mail, blog, Wiki and BBS servers
- Course BBS is followed up by course coordinator
- Online real-time Q&A
- Hotline: 021-25653114
3. Features of the Information-based System
Features of the Information-based System in STVU

- Resource Support
- Cultural Education
- Platform Base
- System Guarantee

Students

from all angles

the whole process

all staff
3.1 Efficient in Terms of Concept and Quality

- Clear Concept with Service
- Full Range of Service
- Customized Service
- Diversified Approach of Service
- Open Service
3.2 Holistic in Terms of Form and Content

- Service Selection
- Function Categorization
- Resource Allocation
- Media Selection
- Relationship Coordination
3.3 Unity and Learner-centered in Terms of Design and Operation

- the plan and design of an overall learning support mechanism
- the selection of function and structure of the learning support
- the design of all components of the learning support system
4. Enhanced Exploitation in ICT Application to Facilitate the Education Reform
4.1 Adjustment to Daily Work

- Further reinforce the teaching platform construction and management so as to improve the service level for both teachers and students.
- Further optimize teaching management system software, so as to efficiently support the integrated education reform.
4.2 New Measures

- Development plan of the informationized system in STVU
  Wireless Campus Network Project (launched in Apr. 2008 with a capital of 400,000 RMB, 58,593 USD)

- Comprehensive redevelopment of the teaching platform (with a budget of 5 million RMB, 732,408 USD, the project started from Oct. 2008 with an objective to build a platform in a ‘systematic structure based on shared data standards and process specification’)

- Project of Informationized System Framework (initiated in Nov. 2008 with a budget of 1.5 million RMB, 219,722 USD)

- Program of STVU Campus ID Card (began in May 2009 with a budget of 4.7 million RMB, 688,463 USD)
5. Fundamental Guarantee of ICT Application
5. Fundamental Guarantee of ICT Application

- A well-known saying in ICT application in China: “30% of technology, 70% of management”

- The application of ICT need fundamental guarantee measures

- Guaranteed application of ICT in STVU includes three aspects: system, teams and mechanism
5.1 Organizational Guarantee

- **Carrying out accountability system**
  - Carrying out budget accounting system of annual routine projects, person-responsible system of huge projects
  - Strictly carrying out process management. Supervising, managing and evaluating ICT application in different grades and levels
  - Paying attention to detailed implementation process. Selecting project implementation methods according to school’s actual situation, education demands as well as project priority
Establishing three organizations

Information-based Construction Committee

Information-based Office

Education ICT Center
- In charge of online education platform and maintenance of application system

IT Company
- In charge of network maintenance and resource construction

Information-based Department Work
- Such as teaching administration dept., students dept., one-stop service center, call center.
5.2 Talents Guarantee

Enhancing Talented Personnel Introduction

- Attracting ICT-related talents with favorable policies
- Further strengthening current talents cultivation, providing study opportunities for technicians in various fields
- Providing research fund for related personnel, promoting technician’s professional level through scientific research
5.2 Talents Guarantee

- Talents Utilizing and ICT Application Training
  - technology management team
  - network technology, maintenance and service team
  - software design, development and maintenance team
  - content resource construction and maintenance team
  - online call center team
  - ICT integrated application and research team
5.3 Operational System Guarantee

- **Public Resource Management**
  - network and computer center room maintenance and management regulation
  - network equipment and core server management regulation
  - email box management regulation
  - call center service process and regulation
  - two-way video conferencing management regulation
  - digitalized office equipment maintenance and regulation
  - computer classroom management regulation
Application Platform Management

- university internet portal management regulation
- online classroom management regulation
- semester open-subjects data stream regulation
- consumer-tailored application platform management regulation

Education Resource Construction

- multimedia courseware and online course design regulation
- teaching video production regulation
- three-section courseware recording regulation
Research Administration and Coordination

- information-based research administration regulation
- information-based research activity regulation
- ICT personnel coordination training regulation

ICT Application Regulation

- ICT application project construction budget regulation
- off-budget ICT application project construction fund management regulation
- ICT application project implementation management regulation
- ICT application project evaluation system regular budget, simpler procedure
6.1 Background

- Shanghai Education Information-based Target
- Shanghai Life-long Education System and Learning-based City Establishment
- Establishing Shanghai Open University Target

Motivation
6.2 Objectives

- Expanding Network Transmission Capacity and Connection Scope
- Enhancing Online Education Platform Function
- Improving Online Information Resource Construction
- Strengthening Talents Training
6.3 Content

- **Upgrade and Maintenance of Current ICT System**
  - Annual upgrading, renewing and maintaining and after-sale purchasing of network equipment, server and storage facilities
  - Hiring outlet and inlet line connecting branch schools
  - Network daily maintenance
  - Daily maintenance of software platform and application system
  - Maintaining adaptation of every operation software system
  - Information-based research project
  - Information-based coordination team activity
  - Talents training, etc
- Integrated Network Construction
- **Software Development Construction**
  - Adapting and Optimizing the *existing software platform*
  - Designing and exploiting *new software platform to meet the university development needs*
- **Network Safety Construction**
ICT Training Service System

- Through ICT training service system, helping the students to master the basics and operation skills of distance education.
- Improving the training efficiency of pre-and-during post, saving expenditure and time, enhancing faculty’s ICT quality.
- Supervising and keeping records of personal learning, thus facilitating administration and check of the training.
Data Content Resource Construction

- Providing various tools and means for network data exploitation, supporting data content exploitation of various data format
- Providing the service for large amount of data storage, search and exploitation
- Supporting the shared visit of data contents among application systems, supporting visit and exchange of other content resource provided by other institutions
Information-based Situational Supervision Center

Construction

- The supervision center is used to supervise the real-time network and software system operation, and some important information-based equipment running situation, so as to make the statistic report of information system and equipment operation and usage.
- The center can give out alarm when the equipment and system fail, and render plans for problem-solving and recovery.
- It is able to combine network safety construction and content resource construction, and analyze special information contents and objects, etc.
- It is able to record and analyze the online activities of designated users and user groups, and integrate them to form a complete secure system.
6.4 Priorities

- Utilizing New Technology to Strengthen the Integration and Administration of Education Resource
- Utilizing New Technology to Offer Diversified Service to Meet Students’ Individualized Needs
- Utilizing New Technology to Promote the Innovation of System and Administration Model
6.5 Implementation

- Fully Utilizing ICT Application, Promoting the Service Objective “For All Learners, All for Learners” and Enhancing the University Key Development capability
- Positively Raising Fund for ICT Construction, Seeking Appropriate Cooperative Partners
- Vigorously Enhancing Faculty ICT Training
- Fully Utilizing ICT, Carrying out International Exchange and Cooperation
Thank you!

cx@shtvu.edu.cn