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The Bottleneck and Strategy of the Informatization of Local University

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Abstract: The article firstly describes the current situation of the information construction and application of Ningbo University and then the existing problem and future bottleneck of information construction be discussed in detail, Finally the development strategy be given to guide local university to develop their information construction in a scientific way.

Key words: Local university, informatization, bottleneck, strategy, scientific way

INTRODUCTION

With the rapid development of modern information technology, many universities have developed and implemented many information systems to improve management efficiency, to strengthen teaching quality, to promote scientific research and to improve service level. Based on campus network the information system integrates the main functions of school affairs such as teaching administration, teaching resources management, scientific research management and logistics management. It has become a trend to provide value-added services and enhance competitiveness by utilizing the advanced information technology in many local universities. Though later than many key universities which directly managed by national relevant ministries, the information construction of some local universities located in economically developed provinces almost keep the same level with the national key universities (Chen *et al.*, 2009).

THE STATUS OF INFORMATION CONSTRUCTION AND APPLICATION OF LOCAL UNIVERSITY

The status of information construction: Ningbo University, which is a local comprehensive university located in the coast area of Zhejiang Province, has a rapid development of information construction in recent years. The campus networks have undergone three times upgrade since 1996 and became a MAN (metropolitan area network). As an important platform and an infrastructure of Ningbo University the campus networks provides many services including WWW, FTP, EMAIL, DNS, Virtual Host, server agency, VPN and so on and also it play an important role in teaching, scientific research, administration and logistic management. With standardize network platform and safe network interconnection the campus networks also give a strong support to the school administrative office systems, instructional management

system, digital libraries, video conferencing and multimedia remote education. Currently, the information construction of Ningbo University has finished the hardware platform construction and the application implement of department level. In the future, the information construction will firstly focus on the establishment of a unified database and an integrated application system to provide a campus-wide service support, resource sharing and management information, secondly to provide a rich digital and video resource including variety of teaching courseware resources, a digital media of traditional library and a knowledge base of teaching material and finally to provide teachers and students an interactive platform of teaching and learning, a comprehensive information query system and a entertainment place where the main need of learning, living, leisure and recreation are fully satisfied (Jiang *et al.*, 2009).

The status of application system: Network center is the administrative department of management the daily campus network in Ningbo University. Its main functions include making development plan, constructing campus network, maintaining the campus network, developing application system and computer relevant training for student or external users (Shi *et al.*, 2008).

Management system

Administration management system: The system integrated the main functions of educational administration daily work which includes teacher management, student management, curriculum scheduling, score management, student performance management, teaching archive management and examination management.

Office automation system: The system can improve the efficiency and quality of office management and make

many boring routine work more quick and easy. It includes the document management, meeting management, archive management, financial management, personnel management, approve management, the logistical management and so on.

All-in-one card system: In the system, the IC card as the electronic identity of a user can represent and record teacher or student in many activities related with their identity. The campus all-in-one card system integrated the modules as user registration system, library management system, canteen management system, computer center management system, entrance guard system in dormitories and school building, electronic wallets and campus telephone system.

Teaching system: The digital teaching platform of Ningbo University builds its teaching resources system on the core of the curriculum and realizes its online teaching and learning knowledge in courseware format. Through combining the advantages of traditional teaching and online teaching and integrating the educational technology and teaching resource together, the platform can provide students a whole cultivate stage and a wide learning environment to enhance their initiative learning and innovative ability. The contents of the digital learning platform include a display platform of excellent courses and network programs, a resource sharing systems, a networks interactive teaching and learning system, an evaluation and analysis systems, a background office management system and some auxiliary tools.

The library system: Ningbo University library has established an advanced computer network systems to deal with its daily work and information retrieval. The information system has a storage capacity of 12 TB and more than 600 computer terminals which connected with campus network, cernet and Internet and many inquiry machines equipped in many public places make readers can access digital library at anywhere and anytime.

Currently, Ningbo University library has utilized modern information technology to deal with book borrowing, literature review, information search, large database retrieval and multimedia digital resources browsing.

The information resource of the library includes academic resources like electronic journals, electronic books and full-text database retrieval, teaching resources like bingo English, renown teacher classroom and encyclopedia video, trial resources like digital issue libraries, ancient and modern books and integrated database.

THE DIRECTION OF LOCAL UNIVERSITY INFORMATION CONSTRUCTION

According to the experience of successful university, the future direction of local university information construction should be to build an integrated and unified information system which can provide a direct support for teaching and research activities and own the features of collaboration and personalization in the process of learning, research and services.

Another point of the information construction of local university is the combination of information technology with educational technology. The popular functions of information technology like multimedia teaching, human-computer interaction and twitter can bring a good result in teaching process. It pushes the continuing reform in education area and brings new breakthrough in teaching technology to improve the quality of education and to keep in step with the times.

Finally information sharing of different levels is another trend of information construction of local university (Xiong, 2008). According to different university category and education hierarchy the regional education information resources sharing center should be established to satisfy different application request. At the same time the information sharing centers should be planned in a global view and be coordinately managed to realize a seamless link between different information centers. Information sharing mechanism of education resource should be designed to prompt more high quality information to be discovered, propagated and applied.

THE BOTTLENECK OF LOCAL UNIVERSITY INFORMATION DEVELOPMENT

The existing of information island: In recent years many application software have been used in different administrative departments to improve the work efficiency. However, the management information systems established by different departments often incompatible with each other and almost impossible to exchange data with each other because of the lack of overall planning. The case causes many information islands which block data sharing and collaborative work between different departments. Furthermore some data often inconsistent because it is duplicated input from different entry and the inconsistency conversely constricts overall office efficiency of local university and blocks the development of office automation (Chen, 2008).

The difficulty of deepen teaching applications: Because the level of information construction of teaching

application is not uniform and computer-assisted instruction based on network haven't got enough attention many teaching application still stay in primary level. Through the network classroom teaching system of Ningbo University has been widely used, advanced information exchange based on network between teachers and students is not enough. At the same time the courses of network teaching platform is very lack and research application of information technology is not enough because of the little regard from top leader. The research collaborative communication platform and scientific knowledge-sharing platform is slow in progress and hasn't a clear agenda of next step application development. The current system which only provides simple resource searching and information exchange applications can't satisfy the more and more demand like real-time communication, collaborative learning, collaborative research, and collaborative work and so on.

Low-level duplicated construction of teaching resource:

Comparing with hardware investment of library the information construction of teaching and research resources is obviously less and often duplicated at low level. There often appears the coexistence of the lack of application resource in one side and the waste of hardware equipment on other side. The construction of campus teaching resources is mainly organized, constructed, maintained and managed by the computer relevant teachers who often rarely associated with other specialized teachers or university leaders. Moreover, the deep-rooted traditional teaching mode in many specialized teacher causes the content-moving teaching courseware which often mechanically copy from book to digital media. It is fail to reflect the advanced educational ideas and teaching philosophy and is almost helpless to change traditional teaching mode.

**THE STRATEGY OF LOCAL UNIVERSITY
INFORMATIZATION**

Above all there have many factors which affect the development of the local university informatization. Among them the attitude and concept of participant is most essential and very difficult to change. The following strategies will benefit to solve the problem.

To establish a scientific development concept: The information construction and application of local university should related with not only professional but also all the staff especially relevant leaders. Currently, the lack of direct involvement from the leaders of many universities often cause the construction of information

technology can not be considered from the global view and lack the interface between different departments. The schemes of information construction of many universities are often done by IT companies which pay more attention to new information technologies and their business interests, but lack of full understanding of the situation and needs of local university informatization. It makes the scheme usual stereotype and difficult to satisfy individual needs of universities. Only on the basis of full understanding of the exact requirement and future development of different universities, the solution of local university informatization can be more scientific and more comprehensive.

To strengthen the concept of informatization: Some people of local university have a poor concept of informatization and haven't realized the strategic position of education informatization in higher education reform and development. They consider the informatization as the icing on the cake and can't persist to push information construction specially facing difficulties in the process of business integration. The problem only can be solved after changing the old concept of participant especially leaders and establishing new concept that request a top-down coordinating management, a sufficient funds support, a high degree resources sharing and a high-quality personnel.

Similarly, many teachers and students also lack of right understanding and widespread participation with information construction of local university. They only see the functions of teaching management and information communication like email, BBS and teaching business, but not see the challenging role of reforming traditional education mode. From this view it is very important that enhance the concept of teachers and students and stimulate their enthusiasm to actively participate information construction.

To break the traditional habits: Because the usage of information applications has not yet been a fundamental impact on the teachers, many teachers still accustomed to their familiar teaching mode and old lesson plans which haven't changed anything in many years. For them information technology only means to retrieve some information from internet or copy paper content to power point document. To make a full utilization of information technology we need put external press to push them to apply new technologies to change their old teaching mode.

To sharing resources without selfish motives: In face of resource sharing some departments of university often

give much thought of their own economic interests and worry that they will lose competitiveness once other departments got these resources. So some universities are unwilling to share their core resources with others but only share some ordinary resources. The problem will cause an incomplete resource sharing where valuable information is difficult to get from sharing center and conversely cool the enthusiasm of users. Thus only a full sense resource sharing without selfish motive from participants can really make full use of useful information resource and benefit the involved universities.

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