ELECTRONIC CAMPUS OF MODERN UNIVERSITY

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Annotation

The problems of creation of university electronic campus are the main item of the discussion. The base trends of electronic campus's developing are considered also.

The current situation in the education sector is characterized as a systemic crisis manifested in the fact that the activities of the educational system contradict socio-economic context, the status of the university as the institutional intellectual center creating new knowledge and cutting-edge designs is lost, and the content, models, and technology of education are irrelevant. The national economics does not generate a request for specialists, in the most of the students direct on the middle level and the nest alumni have not self-actualization in Russia and they leave the country. Experts discuss the different options for the development of higher education, which are largely dependent on future scenarios of socio-economic development of Russia and the policy of state regulation in the field of education. The expert's opinion is that we will have the conversion of higher education, universities have to adapt to the new conditions and polycentric system of higher education will be developed, where regional universities are the centers of excellence, research, and development.

Informatization process of University is designed not only to help in achieving these goals, but to do this effectively. It now depends on whether the universities are able to respond to changing external requirements quickly, whether they have a flexible business models, consider whether the information technology (IT) as the basis of efficient management and a means to achieve competitive advantage, as well as an integral part of corporate strategy.

Past 15 years, most of the universities were engaged construction of the network infrastructure, the development of systems, applications, and services

designed to automate the activities of the university, as well as providing access to Intranet and Internet resources. As a result, by the end of the "zero" years most of the universities have a network infrastructure which connects computers on campus, a server farm with servers and storage, ensuring the functioning of the university services automation.

Currently, the Corporate Information Environment (CIE) is a mandatory component of the educational institution, supports process management, provides access to data and support decision making. The main objective of CIE is automation of key areas of the university: managing the learning process, the support of the educational process, research management, administration, financial management, and management accounting, managing information resources.

External challenges cause to change IT strategy and organization of IT-department work, to deploy new technologies to support IT-processes. Implementation of these tasks can be combined into a single concept of creating an Electronic Campus University (ECU), which is based on the approach and methodology used in products such as "smart" home, digital city, and electronic government. The construction of such ECU requires union set of technologies, equipment, and software into a single concept (Figure 1). The introduction of such a concept in the university makes new demands of IT staff and the organization of IT processes.

In recent years the virtualization technologies are being deployed at VSUE. It leads to the need to upgrade computer and network infrastructure to meet the new requirements: relapse operating costs for the use of server hardware and client computers, reduction the time required for the deployment of new workstations and software applications (software), simplification license management, increasing the capacity of inter-server communication in a data center, and between the data center and distribution layer switches, improved manageability, and security of computer networks.

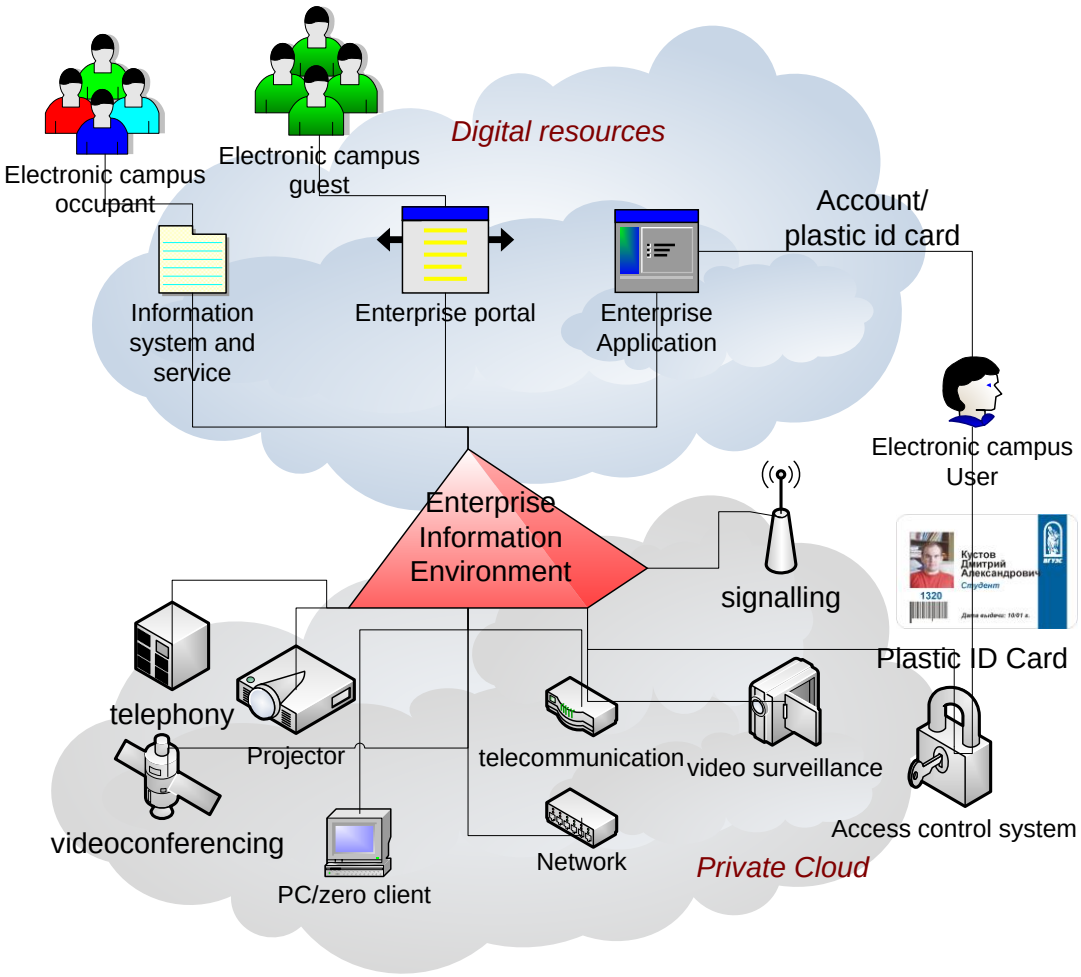

Figure 1 – Electronic campus

The technological basis of ECU is data center ensuring proper functioning and performance of the required systems and services EIS.

By the end of 2012 at the Vladivostok State University of Economics (VSUE) modernizes the data communication network. New core switch (Cisco 6509) was evolved and optical communication lines were updated. After upgrading the data center all the physical servers are integrated directly into the core of the network. It provides non-blocking switching at a speed of 1 Gbit/s and expanding to 10 Gbit/s in 2013. Two clusters were built: cluster server virtualization and virtual desktop cluster (Figure 2).

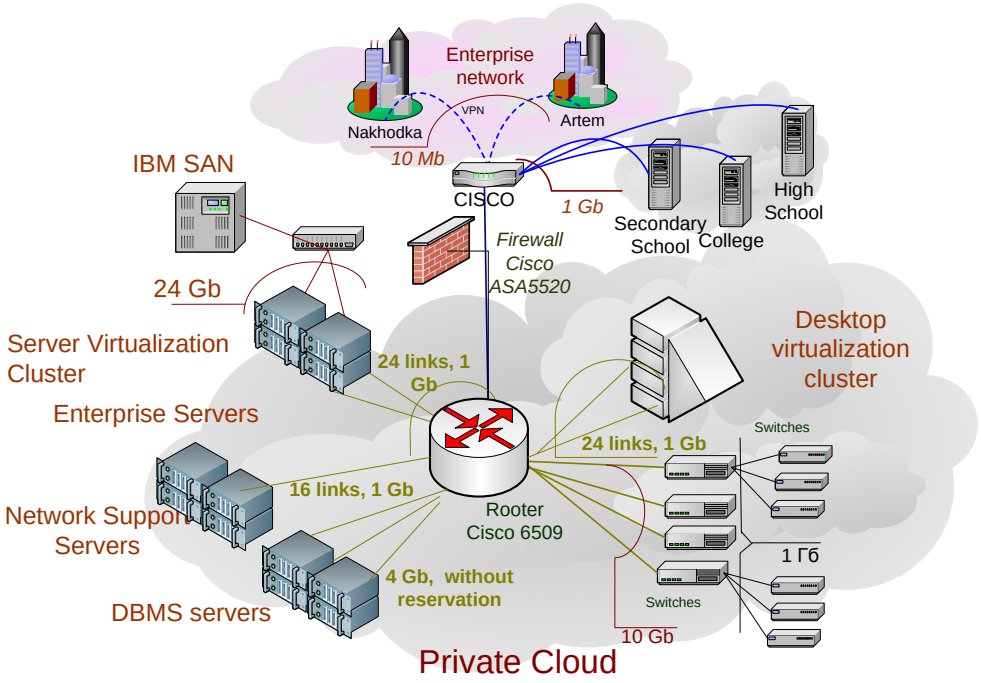

Figure 2 - VSUE's data center architecture

The private cloud has been created in computing infrastructure using virtualization technologies VMWare. The effects obtained from the deployment: improving operational reliability and performance of all services and ECU's systems, efficiency of resource consumption and savings due to the rational allocation of computing power on the tasks according to their needs, reducing downtime, minimizing deployment time and cost of their maintenance.

The first 4 computer classes with zero clients (90 personal places) are deployed in 2012 to teach student. Desktop virtualization involves replacing the client computers to zero clients connected to the data center. This solution is claimed there that require a large number of similar jobs with frequently changing application software and an increased risk of loss of efficiency due to the inept actions of application users. Changing-over to the zero clients can significantly improve IT processes to support user workstations (as well as reduce energy consumption, improve ergonomics). We planes to change 300 personal computers on zero clients using successful experience of virtualization deployment in 2013.

At present to automate ECU's infrastructure management Microsoft System Center 2012 is deployed. It allows monitoring data center, archival copy, and fulfilling configuration management. The network management system (Cisco Prime Infrastructure) and Service Desk-based System Center Service Manager have being deployed also. The systems will ensure quality control of the network, as well as IT-support.

To support the Bologna process the information system to create curriculum standards of the new generation has been developed and deployed. The system provides creating plans based on competences, taking into account the formal and substantial requirements of the standard, as well as analyzing the plans for completeness, correctness, and consistency.

To improve the quality of education the service "My Account workplace" has been developed in 2012. The service provides virtual private workplace for each university student. It includes access to all the necessary teaching and learning materials, schedule, progress, testing, financial information and advanced communications capabilities for interaction between administrative services of the University, faculty, and other students.

To enhance the openness and competitiveness of the university the display scientific and educational information on the website of the university has been automated in 2012. As a result the position of the University has been improved from 98 to 42 in the rating of Webometrics.