

Business intelligence technology in VGTU Distance Education Center

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Introduction

To be successful in times of turbulence and constant change, organizations need people who are flexible, teamworkers, good communicators and constant learners. Many organizations have recognized the key role that training can play in delivering this type of workforce. In order to respond to this challenge, training departments must look at new methods and techniques. There have been some notable examples of success in implementing open and distance learning.

In open and distance learning, much emphasis has been given to the pedagogical concepts of student centered learning and student motivation, resulting in the design and delivery of high quality courses in higher education as well as more generally in resource based education [3].

Technology is changing rapidly. Everything is moving to the web, like data and information; people and communication; the applications people need and use.

A hundred years ago, coal and oil were the raw materials that fueled the factories of the Industrial Age. Today, whether you provide banking and financial services, run a nationwide cellular-phone network, manage public parklands, or bake bread for millions of households, the raw material that fuels your organization and delivers its competitive position in the global marketplace is information. Information about your company, its ongoing operations and daily transactions, its key customers and suppliers, and its competitors. Without information – and appropriate access to it – you can't compete any more than a steel factory without coal can produce steel.

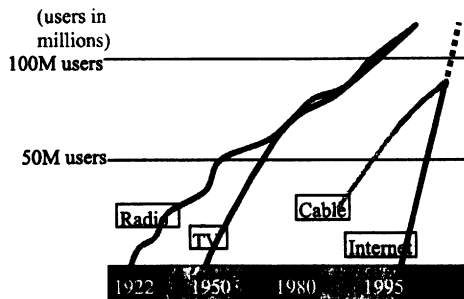


Fig. 1. Unprecedented media adoption.

What is business intelligence (BI)? Business intelligence is an umbrella term for a set of tools and applications that allow corporate decision makers to gather, organize, analyze, distribute, and act on critical business information, with the goal of helping companies make faster better, and more informed business decisions. Successful BI systems provide an integrated view of business, extend analytical capabilities to users, and leverage a corporation's data and expertise – wherever that data and expertise reside in a distributed enterprise.

From a management perspective, BI is about taking on the positive, proactive management of the business. From a technology perspective, broadly speaking, it encompasses a range of intelligence systems and analytical applications that include data warehouses and marts; ad hoc query tools; enterprise reporting tools; online-analytical-processing (OLAP) engines; and prepackaged queries; templates, and reports [2].

How institutions can exploit the power of the Internet in higher education? Executives in higher education are challenged with maintaining and enhancing academic quality, maintaining or increasing student enrollment, recruiting and training faculty members, raising funds, and maintaining financial performance. The value chain for a higher education institution spans the creation of knowledge from research, the management of knowledge, and distribution of knowledge through education. A complete end-to-end solution for higher education would integrate these processes and deliver support to campus constituents through web-enabled services. This integrated education access and support environment would provide for the creation, storage and delivery of courses, administer student and financial transactions, and support faculty, student and management information requirements.

The e-business cycle summarizes how institutions can exploit the power of Internet in higher education. The e-business cycle consists of four main parts: transform, build, run and leverage.

Transform. Institutions are transforming administrative processes and teaching through e-business. Web self service streamlines the process for many administrative processes, reducing costs while improving service levels.

Build. E-business solutions provide institutions with options to build an integrated education access and support environment in support of their transformed campus. This enables university to build a universal access programs, a distributed learning infrastructure, web self service applications, or implement a new administrative systems.

Run. Campuses are running scalable, secure infrastructures using information technology. Software and middleware are running the basic infrastructures, providing security, asset management and database functionality.

Leverage. Higher education institutions are leveraging the power of Lotus Domino to share knowledge and streamline processes. Campus policies and procedures are made available at schools to help departmental administrators perform their jobs. Knowledge management can help speed the adoption of technology in teaching and learning. And administrators are exploring data mining and decision analysis to improve the management and operation of the institution [1].

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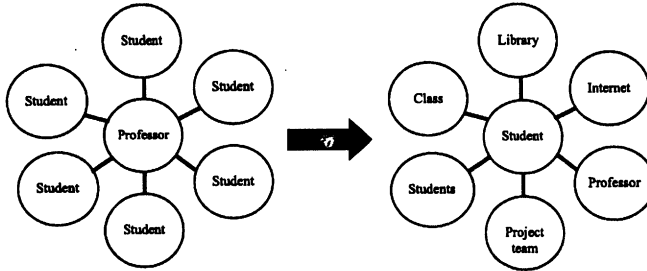


Fig. 2. Moving to student centered learning.

education. A complete end-to end solution for higher education would integrate these processes and deliver support to campus constituents through web-enabled services. This integrated education access and support environment would provide for the creation, storage and delivery of courses, administer student and financial transactions, and support faculty, student, and management information requirements. So this is moving to student centered learning.

Moving to student centered learning is:

- providing access all the time, from anywhere,
- flexible learning resources,
- array of support services,
- meeting student needs and expectations,
- providing quality in student learning,
- collaboration,
- active learning ,
- technology as enabler.

VGTU Distance education center has an opportunity to use IBM providing software for creating an interactive learning environment. Fig. 3 shows how is organized the structure and what products are used to create network computing architecture [4].

Lotus Domino 5.01.a is a server that provides an ideal communications infrastructure by tightly integrating the robust functionality of enterprise-ready, client/server messaging and groupware with the open standards and global reach of the World Wide Web. Domino enables individuals and organizations to communicate with colleagues, collaborate in teams, and coordinate business processes within and beyond their organizational boundaries to achieve a competitive edge. Domino supports a variety of clients and devices, including Web browsers, Lotus Notes clients, and various mail clients.

Lotus Notes is an enterprise or workgroup computing environment that helps people work together effectively, regardless of platform or technical, organizational, geographical, or time-based boundaries. Lotus Notes based information can be shared across any distance, at any time.

LearningSpace 3.01 is the product family and platform that integrates the Lotus vision for solutions for anytime learning. LearningSpace 3.01, built on Lotus Domino, provides the market's best framework for asynchronous collaborative learning.

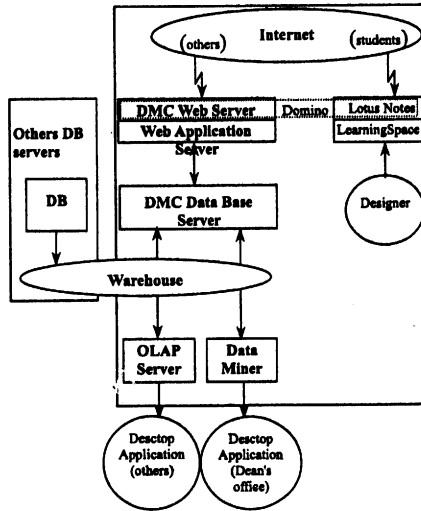


Fig. 3. Network computing architecture.

IBM WebSphere Application Server 2.02 lets you achieve your “write once, use anywhere” goal for servlet development. The product consists of a Java-based servlet engine that is independent of both your Web server and its underlying operating system. Application Server offers a choice of server plug-ins that are compatibles with the most popular server application programming interfaces.

Visual Warehouse 5.2. Data warehousing is the concept of creating stores of informational data: data that is extracted and derived from existing operational systems and then optimized for end-user decision making. Informational data is at the heart of a data warehouse.

Data Miner 2.3 for Data. Data mining is the process of discovering valid, previously unknown, and ultimately comprehensible information from large stores of data. You can use extracted information to form a prediction or classification model, or to identify similarities between database records. The resulting information can help you make more informed decisions.

The IBM DB2 OLAP Server 1.1 is an enterprise-scale online analytical processing (OLAP) system that is designed for a wide range of multidimensional reporting and analysis applications. The DB2 OLAP Server integrates the Hyperion Essbase OLAP engine directly with DB2 and other leading relational database software for data access, navigation, application program interfaces, application design and management, and data calculation.

So conclusion is that the IBM products, that earlier were described and shown in the Fig. 3, are working and communicating to each other. But there is a little problem with versions of products, only with those versions IBM products can create united single system.

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Intelektualaus elektroninio verslo technologijos VGTU Distancinio mokymo centre

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Šiame darbe yra aprašomos intelektualaus elektroninio verslo technologijos ir jų panaudojimas aukštajame moksle. Be to, pateikta schema, kaip galima realiai pritaikyti šias technologijas bei produktus.