Deployment of Brihaspati at National Law School of India University, Bangalore: A Case Study

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Abstract

The technological impacts on different spheres of activity have brought considerable changes in the learning concept. The abundant availability of information, ease of access without time and physical frontiers are the factors, which has brought the concept of E-learning to most of educational institutions worldwide. Open Source being the preferred platform among the educational sector, Moodle and Manhattan are offering the features essential for learning process on the same. India contributed Brihaspati, the virtual classroom package to open source. The features of Brihaspati are par with the standards available on Moodle and Manhattan. The installation procedure, online support has made Brihaspati to find its place in most of the organizations and institutions across the country. The paper discusses the deployment of Brihaspati at National Law School of India University, Bangalore. The paper highlights the conceptual approach of Brihaspati, its features and troubleshooting methods.
1. Introduction

“It is the supreme art of the teacher to awaken joy in creative Expression and knowledge”

Albert Einstein

Teaching is a continuous process of communicating ideas or skills about a subject matter to the student. The more intensive and clear the expression of the thought of a teacher, the better is the impact on the student. A good teacher demonstrating the concept with an example through an audio-visual aid can make a great impact on the students’ mind to perceive the subject effectively. Using electronic media and Internet communication tools to express an idea or a concept in the learning process is known as E-Learning. The abundant availability of information, its varied forms and its flexibility has added a new dimension to the learning process wherein education can be achieved through internet communication tools, thus, creating a new atmosphere of Virtual Classrooms.

The virtual classrooms thus evolved, consists of almost all the features that are present in the live classroom teaching. Typically, the Virtual Classroom packages are equipped with students’ and teachers’ accessibility, room for discussions, place to paste the notices, blackboard facility, etc. It provides various flexible options to learners, that they can go through their lessons by downloading them or accessing online without any distraction to the content of the teaching material. The mode of easy accessibility among diverse student populations, its operating costs without extra investment has made its way to most of the educational institutions. Virtual Classroom learning is a process of learning without limits. The Virtual Classroom application has become popular not only as an intranet application but also as a web online application, for its flexibility and ease of operation in providing the required timely information to the student community.

E-learning has been progressively marching towards institutions, organizations, etc., across the world with its wide spectrum of services to the student community. The management can implement the required features of virtual classroom based on the institutional strategies, learning styles and user level of exposure to technology.
The growth and development of the concept of E-learning has produced many proprietary and free software packages to facilitate the E-learning environments worldwide across various platforms of computer operating systems. For Example, the WebCT, Acado, etc., are priced software offering the virtual classroom features. On the other hand, Brihaspati, Moodle and Manhattan are the virtual classroom software on open source platform. Institutions have an affinity towards open source applications due to its feature of cost effectiveness and stability in offering the functions of the virtual classroom.

2. Requirements of Proprietary Packages

At National Law School, there was constant approach of software marketing personnel from various software developers to demonstrate their software packages, which had the features similar to virtual classroom. The packages were priced very high and secondly, the implementation required proprietary licenses in addition to the Annual Maintenance Cost. With the above reasons, the university felt that the implementation of virtual classroom software was an expensive task to the management.

3. Brihaspati findings its place

With the prevailing above status, a letter from Chairman, UGC was like a silver lining, which carried the information of Brihaspati and its installation procedure. We were proud to know that the development of Brihaspati is from an Indian origin, wherein IIT, Kanpur had played a major role through the project funded by UGC. Above all, the package was free of cost to all the universities offering functionalities similar to proprietary packages, which made National Law School to proceed towards its installation.
4. Features of Brihaspati (4)

Brihaspati is a content delivery tool for web-based e-learning system accommodating most of the features of a virtual classroom. It is based on the architecture aiming at separating content, presentation and business logic. This enhances the speed of execution and enables organizational method of information storage and retrieval.

The four main entities that are built into the package are administrator’s interface, instructor interface (primary and secondary) to upload the course content and the student interface to interact with the instructor through discussion boards, through a chat room or through email. The instructor can upload the course contents, edit and publish the same. The students can only view and download the reading materials. The instructor is provided with options to create a Question Bank, Upload Marks, Student management, Communication tools, Displaying class schedules and for backing up students and course contents.

An instructor is given the option of publishing the content at any given point of time and withdrawing the same from publishing. The server can also made available as a File Server by posting all the content by defining privileges for accessing the same. The administration of the software is achieved through admin module. The administrator defines the privileges for instructors. The required privileges are given to instructors where they can completely administer the course and also monitor the students’ privileges.

In addition, Brihaspati offers many value added features. They are:

- Calendar Tool for Time management
- General News Board
- Facility for the user to create his/her own glossary
- Search – within the courses and users and also the web
• Tasks can be created – it could be the topic of discussion or any other information that needs to be passed on to the student community
• Calculator to carry out scientific calculations
• Personal Profile
• Online Help menu for every menu option

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5. Hardware used at NLS

The Hardware used to implement Brihaspati is of the following configuration:

Intel Celeron 850 Mhz, 128 MB RAM, 40 GB HDD, 10/100 Network card, 15” colour monitor, standard keyboard and PS2 mouse.

5.1 Installation Procedure

RedHat Linux release 9 with kernel 2.4.20-8 is the base operating system installed.

• Mysql-3.23.54 is the version of mysql installed for the database
• J2sdk-1.3.1_12_linux-i586.rpm.bin
• Jakarta-ant-1.4.1-bin.zip
• Tdk-2.1.tar.gz
• Brihaspati-1-20050601.tar.gz

The installation is carried according to the guidelines prescribed at https://202.141.40.216:8443/brihaspati/docs/INSTALL.txt
Mysql : A user has to be created by name as brihaspati and passwd specifying the host on which it operates.

The steps are followed as per the above guidelines in editing TurbineResources.properties, build.properties and turbine-script.sql

Finally, ./Brihstart.sh & is executed to start the Brihaspati Server.

The Virtual Classroom Software – Brihaspati is made accessible with the following URL for the NLSIU community on an Intranet server.
http://192.168.104.3:8080/brihaspati/servlet/brihaspati

5.2 Difficulties encountered during Implementation of Brihaspati

- Defining different usernames at Mysql and build.properties. The changes were made accordingly and ant init was executed once again
- Trying to upload the course as an administrator. The course was uploaded fine and the guest account could not browse through the uploaded course.
  - I was advised by Dr. Y. N. Singh, that the course upload needs to be done by an instructor and enabling the same by the instructor.

Brihaspati was successfully implemented at National Law School of India University, Bangalore during 2nd week of January, 2005. All Faculty members were informed about its usage and gradually it started gaining its recognition, appreciation and is playing an important role in providing the E-learning environment at NLSIU, Bangalore.

6. Training Programme to educate other Law Schools

A training programme was organized at National Law School, Bangalore on 6th-7th August, 2005 where the Law Schools from different states took part
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in knowing about Brihaspati and its characteristics. The two-day training programme was successful wherein DRTC, Bangalore and Gujrat Law University immediately responded to Brihaspati implementation at their respective campus.

7. Brihaspati in its full swing

Since almost a year of its deployment, Brihaspati has an uptime of 330 days. The Brihaspati installation has demonstrated an optimum performance without any breakdowns. The deployment has proved to be stable, user-friendly and reliable. The server has been populated with many course materials on Constitutional Law, Competition Law, European Law, etc.

7.1 Why Brihaspati alone?

Installation of Brihaspati is very simple. The troubleshooting is made easy by regular conversation on Yahoo chat, Yahoo Discussion groups and timely email response. As Dr. Yatindra Nath Singh himself responds to all queries, it is encouraging for the implementers to continue with troubleshooting with a strong confidence. The user menus are simple and easy. Once a teacher is accustomed to Brihaspati, he gets addicted to introduce all his course materials and conduct the interactive session. The deployment at NLSIU, Bangalore has received no complaints in its use. Off course, new versions of Brihaspati have additional features but the implementation is yet to be done.

7.2 Contributing to the growth of Brihaspati

With availability of complete documentation online, the enthusiasts can contribute to its development. The present documentation though offers minimum introduction and installation procedure but fails to offer a complete architecture of the software and the tools that have been used in its development. Therefore, for an installer, the errors that are obtained are in air and a sort of dependence is created in finding the troubleshooting methods.
8. Conclusion

The list of implementers on the Brihaspati page depicts its popularity. The services offered in troubleshooting and timely response is the most attractive part of the Brihaspati installation. The deployment has performed to its maximum and the usage is gradually increasing. With all its features, stability, ease of implementation, Brihaspati will certainly emerge as the best E-learning software in binding the Student and teacher relationship on the cyber space forever.

9. Reference

1. Information Scientist, National Law School of India University, Bangalore.