Brihaspati2 – An Opensource E-learning platform

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Important urls

- http://sourceforge.net/projects/brihaspati
- http://brihaspati.iitk.ernet.in/
- http://202.141.40.215/WebApp/wiki
- http://brihaspati.sourceforge.net/

Education - Current situation

- Education system – reality
  - Objective - Go through a programme, Get certificate
  - Use certificate to get a job
  - Certificate - very important
  - Learners do learn something through exposure to programme
  - Certification – through examination.
  - Failure in examination – social stigma
  - Getting certificate and marks – **the objective**

- Education system – what it should be?
  - Objective – go through a structured program
  - Learn to acquire skills to improve every aspect of life.
  - Certificate for acquiring certain proficiency.
  - One never fails, one usually have not learnt to be proficient enough.
  - Learning to improve one's life – **the objective**

- Argument against second paradigm
  - Less jobs, cut-throat competition, survival.
  - Marks and certificates – important
- Counter argument
  - With second paradigm – people really learn and can generate more employment.
  - Shortage of jobs can be taken care of.
  - A more meaningful life

What should be done?

- To build second paradigm, coexisting with first one to begin with.

- Focus is on learning than certification.

- Learning at your own pace.

- A learning environment where

  - Respect is commanded and not demanded.
  - Learning among equals.

Does such a system exist?

- Yes. Researchers use this paradigm.

- You learn by a methodical approach.

- It is built on what you learn from others through research papers.

- You share your insights with other through publications.

- Internet technology has been built in this paradigm, where everybody is equal.

- Linux is another example.

- www.lanl.gov (physics archives)

- Web has been used as platform for such learning movements.

- For other knowledge domains – platforms are needed.

- **Brihaspati2** is one of the options.

How to use it?

- Use it with existing conventional system.

- Provide second paradigm.

- Try to continuously think and adapt to make education a tool to improve one's life, not a mechanism to get only a certificate to get a job.

Brihaspati2 - Why opensource?

- All the software engineering steps are integrated.
- The basic philosophy – release as you build.
- Users act as testers.
- They lead to improvement in design by asking for new features, pointing out the flaws.
- Parallel competing software development threads can occurs. The good ones – survive.

In Indian Academia

- The requirement for learning management system
  - different when used as support system in conventional classroom system.
  - Distance education mode, only through internet.

Important thing

- Learning material – continuously evolving entity.
- Packaged content material may not be sufficient.
- Guided experience through a mentor/ teacher – required for most of the learners.

LMS development – our experience

- Development of Brihaspati2 – mainly based on the experience in IIT Kanpur in the beginning.

- For last few years, feedback from other places have also been incorporated.

- The feedback from faculty, students is considered to improve existing functionalities, addition of new functionalities.

- As the changes are made they are immediately released after stabilization.

Changes after learning from IITK deployment

- Same courses can be taught by different persons in different semesters.

- Faculty may not like to share the content with other for putting in their course areas.

- Concept of course-faculty doublet identifying the course.

- Depending on the who is teaching a course – active or inactive course for the students.

Deployment in other academic institutes

- Pamphlets sent to all the engineering colleges, universties.
- Letter to all the universties VCs send from UGC chairman
- Many handholding workshops done.
- Some universities, institutes have adapted and using it.
- Some got it installed. But they were stuck for lack of content.

LMS framework modification

- Requires communication capabilities to be built among various Brihaspati servers.

- Requires features allowing the synchronisation and transfer of contact between agreed upon courses at two Brihaspati installation.

- Agreement can be on two way or one way synchronisation.

Scenario for the utilization of above

- Institute A (an IIT) has lot of courses on Brihaspati-A.
- Institute B (an small engineering college) has installation Brihaspati-B.
  - It does not have teachers for all the courses.
  - They can do agreement with IITK for provisioning of certain course X to their student through Brihaspati-B.

- In Brihaspati-A, instructor for course X configure the permission for Brihaspati-B.
- Brihaspati-B synchronises periodically with Brihaspati-A and provides the material to their students.

Advantage

- The institute with limited resources can use internet infrastructure and the Brihaspati server of better institutes to augment their Brihaspati server.

- Can make available the good material to their students in the course where they lack in good faculty.

New features

- Separation of content author and course instructor

- Support for reusable content modules (SCORM objects)

- Bangla, Gurumukhi, Hindi, Malyalam, Marathi, Tamil,   Telugu,Urdu

- French, German, Korean, Chinese, Japanese, Dutch, Italian interfaces.

Future

- Multilingual content authoring tool.

- Cluster based Brihaspati2 services for all educational institutes in India under National Mission on Education through ICT (NMEICT) of MHRD.

- SCORM run time environment.

- Multi-institutional project – IIT Kanpur, IIT Roorkee, Amrita VV, DEI Agara, NIT Hamirpur, Jammu University.

- Shape up into Educational Resource Planning (EdRP) services – to be hosted on servers attached to upcoming NMEICT network.

- Different ERP modules being developed by partners.

- No institute need to install it. (Multi-institutional version is underway at the moment).

- Just get your institutes account and start using it.

- Longterm objective is
  - P2P system
  - No server
  - User machines will share storage and computing power.

Can we have live lecture delivery?

- Project named – Brihaspati_sync

- Scalable design – based on overlay P2P multicast technology.

- Live lecture can be delivered to millions and millions of student.

- Will perform better with the improved internet infrastructure (multicast support) in future.

- Lecture transmission between machines attached with different operators in different cities – have been tested.

What is expected from you?

- Get motivated to start development threads at their ends (if possible).

  - Localization in the language of their region

  - Addition of new features locally required.

  - Documentation for users and developers

- Those who cannot develop

  - Can at least use and test the system.

  - Ask for new features as required by them.

Commercial support

- Using typically mozilla-netscape, helixplayer-realplayer, openoffice-staroffice model
  - Modifications to suit commercial use can be done.
  - The modified software itself cannot be sold.
  - The modified software need to be released under the same license.
  - low cost compared to closed source product
  - Enhanced performance and additional features.

Conclusions

- Indian academia need to solve their problems on their own

- Need to make the solutions catering the local requirement

- Sharing and interaction among academia essential for the growth of the movement.