Web Enhanced Learning: initiatives at IIT Kanpur

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Opensource freeware initiatives

- non conventional approach
- design, specification, implementation and testing goes together
- development- iterative in nature
- number of developers- changes with time.
• Sometimes funded by Govt.
  – Indic computing tools on Linux - IIT Kanpur, NCST
  – Vic, Rat, Wbd in LBNL and UCB
• Sometimes spawned by donations in different forms by industry
  – OpenOffice (Star Office code donated by Sun)
• Sometimes by cooperative efforts of volunteers
  – Software developments at jakarta.apache.org
  – Linux OS

Academic institutions has played a vital role in many such developments.
Brihaspati - virtual classroom

- Decision to develop - Dec.2001, Persons involved were novices.
- Java servlets based on open source free application server
  - At that time, none of opensource freeware web application for virtual classroom - based on Java Servlets.
- built basic servlet based system, studied various systems and technologies for implementations.
- Brihaspati- used experimentally in IIInd sem 2002-03 in IIT Kanpur.
• Full fledged used by all the interested faculty in IIT Kanpur for supporting classroom teaching - from 1st sem 2003-04 session.

• All basic features- course material upload, publish, user management, discussion, chat are integrated.

• Currently focus is on SCORM compliant learning object creation and management.

• Emphasis- on reuse of already existing opensource freeware components.
CVS repository to access development code
:pserver:guest@202.141.40.84:/home/cvsroot
module name brihaspati
login guest No password needed

Brihaspati test installation in IITK
http://202.141.40.84:8080/brihaspati/servlet/brihaspati
Login guest password guest

Website for Brihaspati
http://home.iitk.ac.in/~ynsingh/tool/brihaspati.html
Synchronous learning tool

Currently used tools

- RealServer along with Screenwatch
- can work on multicast network
- vic, rat, wbd for interaction over multicast network

Dependency on multicast network

- can be resolved by overlay network
- in near future, all the service provider will provide multicasting
All the above not suited for heterogeneous networks

The solution

- Receiver driven layered multicast
- OpenMash implements this concept
- Code built in Otcl and Tclcl- not well documented
- Code is in development

In IITK- currently study is underway to debug, modify and use OpenMash for synchronous lecture delivery.
Important features

- live delivery
- interaction feasibility
- recording
- archival
- playback at later instant
- should work on heterogenous network
- should work on dynamic varying bandwidth conditions
Any such effort needs

- Cooperation of the stakeholders (developers; users- teachers, students, administrators)
- design, implementation and use should evolve with time as per need of users.
- community source development process- seems to be best suited for any such effort.