XLNC EduTek
Solutions Overview

For Potti Sreeramulu Telugu University, Hyderabad

Submitted By

Mumbai
504-1A, Green Hills,
Lokhandwala Township, Akurli Road,
Kandivali(East), Mumbai-400101
INDIA

Hyderabad – Branch Office
12-13-464, Street No. 1,
Tarnaka, Secunderabad,
Hyderabad-500 017
INDIA

Miramar – Branch Office
C/o. U R Tech Services,
16529, SW 36th court,
Miramar, Florida - 33027
USA

Prepared By : R. K. Rajeev
Date : 05/04/2012
Version : ET-AP-OVR-Draft-v2

Confidentiality and Ownership
This document is for the use of the intended recipients as specified in the attached e-mail, letter or other forms of correspondence along with it. All information, facts and data contained within this document including topics and concepts along with specific services are the sole property of XLNC EduTek. Any attempts to reproduce this document in any way whatsoever written or electronic, either in part or whole, shall be strictly prohibited, and permitted only after prior written consent from XLNC EduTek.

Table Of Contents

1 Background....3
2 Educational IT systems – Problems and Solutions....3
3 Open Source Software Advantages....4
3.1 Openness....4
3.2 Stability....4
3.3 Adaptability....4
3.4 Quality....4
3.5 Innovation....4
3.6 Security....4
4 XLNC Moodle Learning Management System....5
4.1 Executive Summary....5
4.2 Live Lecture Streaming....5
4.2.1 Live Chat Feedback....5
4.2.2 Recorded Video Lecture Delivery Platform....5
4.2.3 Online Communication Forums....5
4.3 Online Course Management....6
4.3.1 Online Assignment Submission....6
4.3.2 Plagiarism Detection....6
4.3.3 Online Testing and Grading....6
4.4 Advanced Communications Platform....6
4.4.1 Advanced e-Mail Server....6
4.4.2 Integrated Instant Messaging and Presence Platform....6
4.5 Flexible Infrastructure with Centralized Administration....7
5 XLNC TCExam Online Examination System....7
5.1 Executive Summary....7
5.2 XLNC TCExam Salient Features....7
5.2.1 Unique Tests....7
5.2.2 Rich Content....7
5.2.3 No Expensive Hardware Requirements....7
5.2.4 Internationalization (I18N)....8
5.2.5 Data Import and Export....8
5.2.6 Offline Testing system....8
5.2.7 Starter Question Bank....8
6 XLNC Fedena Student Information System....8
6.1 Executive Summary....8
6.2 XLNC Fedena Salient Features....9
6.2.1 Student Management....9
6.2.2 Student Attendance....9
6.2.3 Fee Management....9
6.2.4 Finance System....9
6.2.5 Timetable System....9
6.2.6 Examination Reporting....9
6.2.7 Communications System....10
6.2.8 HR Management....10

1 Background

XLNC Enterprises was born in 2006, built upon the foundation of a flourishing 7 year old Linux consulting and training practice. It carried forward a large base of clients, numerous consulting success stories and an enviable reputation withing the training sphere. The decision to brand the practice allowed the concept of a support and training based business model to be established, in addition to consulting. XLNC believes in promoting the values of Freedom, Community, Contribution and Reward throughout the IT Ecosystem. The firm has a presence in Mumbai(India), Hyderabad(India) And Miramar, Florida(USA)

XLNC Edu Tek is a division of XLNC Enterprises that focuses on Educational Infrastructure Systems, and on the open-source platforms to support Educational Activities. The goal is also to provide Educational Institutions with the confidence in deploying Open-Source based systems by providing efficient and cutting-edge Consulting, Tier 2 Support and Innovative Training Programs.

1.1.1 Satisfied Clients

Some of XLNC's satisfied clients include :

2 Educational IT systems – Problems and Solutions

Users of IT Systems are becoming more savvy and demanding by the day, especially in academic environments. The growing levels of information access is allowing students to compare the infrastructure provided in Indian institutions to the best in the world, leaving them wanting more. Students now expect enterprise grade communication services, including online course materials, e-mail and other messaging platforms to be an integral part of their academic lives, especially in the more upmarket institutes. Similarly, access to advanced teaching technologies like an LMS(Learning Management System) or Online CBA(Computer Based Assessment) Systems are increasingly becoming hot items on both student and educator wish lists. The Trend is heading clearly towards the paradigm of Blended Learning, allowing the students to make the optimum use of resources and abilities only now becoming available on a wide scale.

On the flip side, the increasing complexity of Educational IT Systems results in higher maintenance costs and lower reliability. Also, academic needs are driving Educational IT Systems more and more towards the Internet, a Hostile Jungle. Finally, the enhanced enforcement of software licensing in India is starting to pinch budgets without offering value.

Our current focus areas within education include Online Learning Management systems that cover the entire gamut of university level academic operations, Online Testing and e-Exam systems and Campus IT Infrastructure Systems. In addition, we are currently Field-Testing Handleld Tablet PC's that are optimised for education, which will revolutionize the industry by providing unprecedented flexibility of access to online learning materials, LMS academic portals and even live video lectures and counselling at a very reasonable cost, much lower than laptops.

XLNC's magic mantra for success here is to act as the bridge between the vast repository of available OpenSource Software and Paedological Experts to identify the square peg that fits. You get a more capable, flexible, robust and cost effective solution out of it and use money saved on software licensing for better hardware and better people. Now There's Value.

3 Open Source Software Advantages

Open Source promotes software reliability and quality by supporting independent peer review and rapid evolution of source code. XLNC EduTek's solutions are all Free Libre Open Source Software (FLOSS) by licence. The general advantages derived by the Open Source model adoption are both numerous and extremely compelling.

3.1 Openness

All advantages of Open Source are a result of its openness at the code level. Having the code makes it easy to resolve problems which means that you don't have to rely on only one vendor for fixing potential problems.

3.2 Stability

Since you can rely on anyone and since the license states that any modification shipped elsewhere should be equally open, this means that over a period of time Open Source software evolves to become more stable than most commercially distributed software.

3.3 Adaptability

Open Source software means Open Standards, thus it is easy to adapt software to work closely with other Open Source software and even closed protocols and proprietary legacy applications. This solves vendor lock-in situations which ties you to one and only one vendor if you choose any one of their products.

3.4 Quality

A wide community of users and developers does not only ensure stability, but also supplies new possibilities, making Open Source software a feature-rich solution. New features, fewer hidden bugs and a broader (testing) audience (peer-review) are significant to the quality of a product.

3.5 Innovation

Competition drives innovation and Open Source keeps competition alive. As no-one has an unfair advantage, everybody has the possibility to add value and provide services. Information wants to be free.

3.6 Security

It is widely known that security by obscurity is not a secure practice in the long run. By opening the code to intense peer review and by wide adoption of Open Source software, it grows more secure. Given enough experienced eyes on the code, all security holes are shallow.

4 XLNC Moodle Learning Management System

4.1 Executive Summary

Compared to the traditional methods of classroom education, blended Learning provides a number of availability and cost benefits. This solution is proposed to deploy an efficient, secure, scalable and effective Computer Based Blended Learning Content Delivery Infrastructure System. This system is expected to provide the university the ability to build, maintain and update varied course resources and material, and allow efficient and streamlined online interaction between the internet connected students and the teaching staff at the central university. It will also be configured to simultaneously give students the ability to get comfortable with Online Testing Systems. This system is expected to provide Teachers and Instructors with powerful tools to customize and deliver courses in a manner vastly superior and with significantly less effort than current methodologies. XLNC EduTek realizes such a solution using the a variety of opensource technologies including XLNC Moodle, BigBlueButton/OpenMeetings Web Conferencing System, Kaltura Video Management Platform, Zimbra Collaboration And Communication Platform and Red5 Streaming Media server.

4.2 Live Lecture Streaming

Ability to stream multiple lectures in parallel. It is capable of multi way video & audio communication between a faculty and many students. Lectures can be broadcast from the central University and students can view these lectures on campus or from any other place outside the campus. There is also a shared white board where the faculty can draw, load presentations or images, highlight certain topics, type some text and share their screen or applications etc.

4.2.1 Live Broadcast Studio

Setup of a complete High-Definition Live Broadcast Studio for direct online streaming to students and also to produce high quality recorded video lectures. Setup includes 2 HD Professional Cameras, a Full HD Video Mixer Deck, A specially prepared desk for the faculty with a Touch surface for controlling the virtual whiteboard, A Dedicated Video Broadcast system and Complete Professional Soundproofing of the Recording Room. This setup wil allow you to build up a high quality bank of video lectures while allowing you to have live contact with your off-campus students.

4.2.2 Live Video Question/Answer Sessions

Live 2/4/10 Way Video+Audio Chat interaction from students back to Central University Lecture Rooms for Doubts or Questions. This Q&A Session can be held immediately following the main lecture so that students can ask questions to be clarified and also have direct student-to-student interactions/discussions, like in a real classroom.

4.2.3 Live Chat Feedback

Live Text Chat feedback from students back to Central University Lecture Rooms for Doubts or Questions. When the lecture is going on, students can ask questions to be clarified via chat facility so that the lecture is not disturbed.

4.2.4 Recorded Video Lecture Delivery Platform

Maintaining a database of video lectures that are made available at multiple quality levels both online and on-campus. Students can view all the recorded lectures at any point of time from anywhere just by logging into their account and going into their course module.

4.2.5 Online Communication Forums

Provide an online discussion forum for communication between students and professors that can be used for clearing doubts and as a knowledge bank. Students can post any doubts or questions in a relevant section where the professor can reply to them and this interaction is made available to all the students in that course. It also provides a forum for students to interact and discuss topics of immediate interest.

4.3 Online Course Management

Students and Professors can see at a glance all the components of their courses, with a single interface to manage and administer them all. After they are enrolled to a particular course they can

see their course material, assignments, time table, all the important dates in that semester for that specific course like due dates or any other special occasion or exams etc.

4.3.1 Online Assignment Submission

Allow for online submission and grading of assignments by students and professors. Assignments can be entered both online or offline, and can be submitted from any software program or application(Images, Audio/Video recordings, CAD/CAM Diagrams, etc.). The system can also support group based assignments and offline activities that can be used to assign marks to things like practical lab sessions, extra curricular activites or sports activities etc.

4.3.2 Plagiarism Detection

Automated detection of possible similarities between assignments submitted by multiple students and also against assignments submitted in previous years. Option of online scanning too for internet-copied assignments. The system will give a similarity score for matching assignments or provide a link to the internet article for internet copied assignments to allow the faculty to appropriately grade the assignment.

4.3.3 Online Testing and Grading

System to conduct online exams, quizzes, surprise tests, practice and review exams with detailed timing and topic-wise analysis. This facility is available both as a built-in module, designed for practice and preparatory tests, and as a stand-alone, disconnected system that can be used for secure testing for exams.

4.4 Advanced Communications Platform

Advanced Communications platorm for both students and staff with integration into social networking systems(Twitter, Facebook etc.) It can provide the university with a very comprehensive communication platform, providing many of the features similar to Google Apps for Education.

4.4.1 Advanced e-Mail Server

Zimbra Online Collaboration platform to provide unlimited e-mail accounts to students, alumni and staff. Also Supports an Advanced AJAX Webmail Interface in addition to integration with all popular e-mail client applications and mobile messaging platforms(Blackberry, iPhone, Android, Nokia)

4.4.2 Integrated Instant Messaging and Presence Platform

Integrated Jabber Based Instant messaging system allowing instant communications between all users. This allows for a more relaxed and informal communication medium to help build the sense of community and oneness among the students and staff of the University.

4.5 Flexible Infrastructure with Centralized Administration

The SDP can be deployed in a Hosted environment, an On-Campus LAN environment, or a mixed environment. All infrastructure can be centrally managed and administered from the central

university data center, without any major requirements other than a broadband internet connection and a modern browser at the students end.

5 XLNC TCExam Online Examination System

5.1 Executive Summary

Compared to the traditional methods of paper setting, electronic paper setting provides a number of efficiency and cost benefits. This solution is proposed to deploy an efficient, secure, scalable and effective E-Exam and Computer Based Question Bank Management Infrastructure server. This system is expected to provide the examination department with the ability to build, maintain and update an Electronic Question Bank, and allow the preparation and printing of question papers. It will also be configured to simultaneously give students the ability to undertake Online Tests, with online results display and email delivered analysis. This system is expected to provide Teachers and Instructors with powerful tools to customize and deliver tests in a manner vastly superior and with significantly less effort than current methodologies.

5.2 XLNC TCExam Salient Features

5.2.1 Unique Tests

In XLNC TC Exam, questions are grouped into modules and topics. XLNC TCExam can store an unlimited number of modules. Each module can contain an unlimited number of topics. Each topic can contain an unlimited number of questions and each question can have an unlimited number of alternative answers. An XLNC TCExam test can include several modules and topics. For each module, topic or groups of modules/topics, XLNC TCExam randomly extracts a specified number of questions with certain characteristics (i.e, question type, question difficulty and number of alternative answers to be displayed). **XLNC TCExam may generate unique test for each user by randomly selecting and ordering questions and alternative answers. This drastically reduces or eliminates the risk of copying between users.**

5.2.2 Rich Content

XLNC TCExam uses a common mark-up language to add text formatting, images, multimedia objects (audio and video) and mathematical formulas. XLNC TCExam includes a simple graphic interface with buttons to easily format the text or add external objects (i.e. images, diagrams, formulae). **Generally, any content can be added to the XLNC TCExam questions, answers or general descriptions.**

5.2.3 No Expensive Hardware Requirements

The Linux platform and the flexible technical requirements make it possible to install XLNC TCExam on almost any computer and even run it on shared Web servers managed online. This feature is particularly important to gap the digital divide with developing countries or rural areas, where modern hardware is unavailable or too expensive. **Experimental results shows that a**

standard server, based on an Intel Dual Core 2GHz Processor, 2GB RAM and a 100Mbps Ethernet card, may easily handle ~ 150 - 250 tests at the same time. With more modern servers, that number heads up to 1000's or even 100's of 1000's of tests.

5.2.4 Internationalization (I18N)

XLNC TCExam is language independent by adopting the UTF-8 Unicode charset and TMX (Translation Memory eXchange) standard. XLNC TCExam supports Right-To-Left languages (i.e. Urdu, Arabic, Hebrew, Persian) and already includes translations in Indian languages like Hindi and Marathi, With more to follow.

5.2.5 Data Import and Export

To improve the software flexibility and compatibility with other CBA software, e-learning applications or existing databases, XLNC TCExam includes some tools to directly export or import users, questions or results data using various open formats: CSV (Comma Separated Values), XML (eXtensible Mark-up Language) and PDF (Portable Document Format). In addition, the database is fully documented in order to make it easily accessible by external applications. **The detailed results in PDF format can be automatically sent by email to each student/parent.**

5.2.6 Offline Testing system

XLNC TCExam also includes the ability to prepare and print Offline Testing OMR sheets. These sheets can also be scanned back into the system and automatically marked, allowing for quick evaluation of examination sheets. **Using this system, extremely large numbers of students can give tests even without supporting lab infrastructure.**

5.2.7 Starter Question Bank

XLNC TCExam Comes with a Set of Starter question banks covering standard placement topics(Analytics, Language and Verbal Ability, Previous Years Question Papers from various companies like HCL, TCS and others) totalling about 2000+ questions.

6 XLNC Fedena Student Information System

6.1 Executive Summary

Compared to the traditional methods of student administraton, online systems provide a number of efficiency and cost benefits. This solution is proposed to deploy an efficient, secure, scalable and effective school/college administrative management service on a hosted server. This system is expected to provide the management and administrative staff the abilityto enter, manage, update and analyse all relevant data regarding students and the general functioning of the college. It will also be configured to simultaneously give students the ability to view their timetables, attendance records and examination marks online. This system is expected to eventually provide Teachers and Instructors with powerful tools to schedule and deliver the curriculum units in a manner vastly superior and with significantly less effort than current methodologies. XLNC EduTek realizes such a solution using the XLNC Fedena System.

6.2 XLNC Fedena Salient Features

6.2.1 Student Management

In XLNC Fedena, Student mangement is a core module. It allows you to track all interactions with the institution, right from admission to graduation. It also provides students with a Self-Help site, allowing them to view their timetables, attendance details and examination marks and analysis.

6.2.2 Student Attendance

This module will allow institute staff to enter and maintain student attendance records online. This is also made visible on the student portal to ensure that both the students and parents can keep an eye on the atttendance percentages.

6.2.3 Fee Management

This module will allow the college to define various fee structures, prepare payment schedules and perform fee collection activities. It will also provide reporting on fee collections and create entries in the finance system for fees incomes.

6.2.4 Finance System

This module allows you to create and manage financial accounting entries and generate financial reports. The entries can be made under various categorised headings, allowing for easy analysis of the income and expenditure streams. Both Fees and Non-Fees Incomes can be categorised and managed in the finances module in addition to all expenses. Student Fee payment reciepts can also be generated with a lot of flexibility in terms of discounts, multiple payments and balance carry forwards. As a further customization to the system, we are developing a new style of report, allowing for class-by-class analysis of income and expenditure, to be integrated with the main finance layer and also allowing for export of the same into Tally.

6.2.5 Timetable System

This system allows you to create and maintain timetables for the entire institution. Each timetable is configurable, and can be configured with different periods. Once finalisd, the timetables are automatically published to the students.

6.2.6 Examination Reporting

This module allows you to create and schedule examinations and publish the results in a secure fashion online. Students will be able to view their own results online, and will also have the ability to see their comparitive performance reports as against the entire class.

6.2.7 Communications System

This module will allow you to manage all communications from the institute. It includes notices, broadcast messages and individual messages. It can send based on class, to individual students or directly to the parents/guardians. A SMS Gateway integration is also available.

6.2.8 HR Management

This module covers the typical HR requirements in the school college world. It includes the ability to define office staff and faculty, manage leaves and staff attendance, handle subject faculty based on seniority/qualification, manage salary accounts and even generate payslips.

7 Open Source IT Infrastructure

In addition to the above standard systems, we also undertake custom projects to help colleges and universities better leverage their IT Assets using a variety of open-source technologies. All out projects are executed on a turnkey basis and our strong development and training skills ensure that you get a system that is exactly built to specifiation and well understood by your staff. All you need to do is share your requirements and allow us the chance to impress you with our proposals.

8 Contact Us for a Demo

Do feel free to contact us and schedule a demo of our platforms at your convenience and as per your requirements. We look forward to the pleasure of meeting you in person.

Mumbai – Head Office
504-1A, Green Hills,
Lokhandwala Township, Akurli Road,
Kandivali(East), Mumbai-400101
INDIA
Ref: Mr R. K. Rajeev
☎: +91-9323802020

Hyderabad – Branch Office
12-13-464, Street No. 1,
Tarnaka, Secunderabad,
Hyderabad-500 017
INDIA
Ref: Mrs Vasudha Rajeev
☎: +91-9320072020

Miramar – Branch Office
C/o. U R Tech Services,
16529, SW 36th court,
Miramar, Florida - 33027
USA
Ref: Mrs Janevi Ramaji
☎: +1-954-483-8691