

**MIDDLE EAST TECHNICAL UNIVERSITY**

**DEPARTMENT OF COMPUTER ENGINEERING**

**CENG491 FALL 2006**

**SENIOR PROJECT PROPOSAL**

**A Unified News Exchange Server with NNTP, Mail, Web and RSS**

by

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## 1. Team Information

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## 2. Project Description

In this century interaction between people all around the world is supplied by computers. We get to know more about life, communicate with other people, do most of our works via these computers now. Being a member of online forums and groups which

connect people from all over the world, sending and receiving e-mails from our friends or worldwide working companies, connecting to other computers which are located in other sides of the world, reading numerous kinds of articles from websites, getting the news from online magazines or newspapers are just simple daily activities of our lives.

In this project we plan to build up a system which supports several protocols <sup>(1)</sup> and methods that are used in order to achieve the communication between server and client computers. Some of these protocols, methods and their application areas are as follows;

The World Wide Web ("WWW" or simply the "Web") is a global, read-write information space. WWW is available via to the internet which is network of networks all over the world. On the World Wide Web, information resources are identified by unique, global identifiers called Uniform Resource Identifiers (URIs). For viewing a web page or other resources on the Web, the unique URI of it should be typed on a web browser. After finding the IP address of the web server which contains the resource, a Hypertext Transfer Protocol (HTTP) request is send to this web server and then requested information is received by the client in quick succession. HTTP is a method used to transfer or convey information on the Web. HTTP, a request/response protocol between clients and servers, defines how messages are formatted and transmitted, and what actions Web servers and browsers (clients) should take in response to various commands.

NNTP, short for *Network News Transfer Protocol*, is the protocol used by both Web browsers and servers to send, distribute and receive USENET <sup>(2)</sup> postings and news articles. It is designed so that news articles are stored in a central database or file system allowing a subscriber to select only those items he/she wishes to read. A NNTP server is a computer that has the task to collect a copy of news messages from the discussion groups and to allow users to read and send messages to the same groups. Indexing, cross-referencing, and expiration of aged messages are also provided.

RSS (Rich Site Summary) is a method that is used for accessing headlines of changes in different internet pages. First the users subscribe to the internet pages they are interested in. By that way they can get the headlines of a change in one of those internet pages on the RSS reader interface and can see the content of it by clicking on that headline of the change. By the help of RSS, people access regularly changing web contents that are interested without losing time in the internet.

(1) A protocol is simply a format for transmitting data between two different devices. It determines the type of error checking to be used, data compression method (if any), how the sending device will indicate that it has finished sending a message and how the receiving device will indicate that it has received a message.

(2) USENET is a huge shared message system used on the Internet. User-submitted notes or messages on various subjects are collected by USENET.

*Simple Mail Transfer Protocol (SMTP)*, is Internet's standard host-to-host mail transport protocol and traditionally operates over TCP, port 25. In other words, a UNIX user can type `telnet hostname 25` and connect to an SMTP server, if one is present. After connecting to SMTP server, a dialog is passed between the client computer and the server for authentication of the client, then the message text is transferred to one or more recipients specified (in most cases these recipients are verified to exist). SMTP is a "push" protocol that does not allow one to "pull" messages from a remote server on demand. That is, one can only send emails but not receive emails using SMTP. To do this a mail client must use POP3 or IMAP.

In our project we want to design a system which combines all of these methods under one communication system. Users will be able to interact with the system throughout web browsers using HTTP, news readers using NNTP, RSS readers using HTTP or NNTP. The system will also provide users with emails of new messages of selected groups by the users. For example, when a user posts an article to the newsgroups, the article will be fed to the RSS clients, seen on the forum page, and delivered to the users by email.

All these features will be implemented as separate modules and the communication between these modules and the data storage will be provided by the system core. Depending on the analysis phase we may implement security check mechanisms in this core. Also we may locate the core and the data storage in the same machine since core will usually be interacting with the data storage.

Connections between clients and servers will be implemented in an efficient and secure fashion in order to create a reliable system. We plan to implement a filtering feature which will prevent the newsgroups from invalid (spam containing) messages. We also want to use SSL (Secure Socket Layer) with HTTP and NNTP. Our system will also be platform-independent to be able to be set up on machines using different operating systems. In addition, we think that a user-friendly interface is important for the www-based implementation part of the system.

### **3. Additional Features**

We think of adding a feature that will provide users to send messages to the newsgroups by their email addresses. This will require POP3 and IMAP protocols. If we realize this thought, we will also implement modules for them.

We may also construct a chat system which will provide subscribed users to talk to each other online.

Furthermore, we think to keep posted threads of each user in his/her account up to a specified storage limit. The user can also select some posted messages of other users to be kept in his/her account.

Also we have an idea of a search tool that would be used to search for a

subscribed user. If the searched user has allowed his account to be seen by others, his account will be displayed by other users.

We also plan to implement the system to have a main administrator. And each newsgroup has also its own administrator. These sub-administrators are allowed to create an area in the data storage and collect files from users of the newsgroups they administrate. They also may let the other users to see the files uploaded to that area by giving them the username and user password of the created area.

#### **4. Application Areas**

This project product has wide application areas. All the applications needing interaction with subscribed users are possible to be implemented by other system. Some of these areas are below:

*Distance or Traditional Education:* The interaction between teachers and students may be provided by the newsgroups. There may be separate groups for different courses which give the students the opportunity to discuss their ideas and by our chat system which we may implement as an additional feature students can talk to each other online. Students can also upload their homework to the area created by the administrator of the newsgroup of the course.

*Companies:* The interaction between managers and workers may be provided by the newsgroups. There may be separate groups for different departments which give the workers the opportunity to discuss the projects and exchange ideas. Workers can also upload their weekly reports to the area created by the administrator of the newsgroup of the department.

*Online Forums:* This application can use our web module. People exchange ideas and share files on the web by subscribing to the forums formed by different newsgroups. File sharing will be managed by the administrator of each newsgroup. Subscribed users

may also chat to each other by our system.