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Postat: A Cross-Platform, RSS-Based Advertising and Event Notification System for Educational Institutions

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Abstract

The online advertising techniques, such as emails and display advertising, offer a wide range of benefits to the business community. Recently, these techniques were extended to include social media and interactive ads to reach the target customers precisely. However, using these techniques in a local community such as universities, colleges and schools become a reliable announcement and notification systems. In this paper, we introduce our notification system Post@ (pronounced "postat"). Post@ is a RSS-based web service that automatically delivers announcements, posted by a publisher, to subscribers' PCs or smartphones directly. Post@ updates can be easily accessed through any RSS reader (desktop gadgets, dashboard widgets, or mobile apps) that is connected to the private or public channels of our system. Post@ was implemented and tested on many operating systems and devices within our university and the evaluation results showed an excellent subscribers' satisfaction.

Keywords: RSS Feeds; Mobile Apps; Web Advertising; Web Publishing; Internet Marketing; XML; Event Notification System;

1. Introduction

The need for fast, free, and reliable advertising channels is increasing as more educational institutions are using the latest electronic communication devices. These devices require a modern advertising tools and event notification systems which deliver the messages to the staff and students as fast as possible in order to make them satisfied about the institution. A registration process should be initiated by the subscriber (Student, staff, etc.) to the notification channel in order to receive the publisher notifications. For example, in any university messaging system, the subscriber has to get login information in order to send or receive message from the university administration or the publisher such as our Applied Science University (ASU) - Online System.

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There are many popular notification systems and protocols that provide global services, such as the Netnews distribution system [1], Herald [2], Gnutella [3, 4], Farsite [5], and all of them make use of the huge success of the World Wide Web (WWW) and the Internet. A General Event Notification Architecture (GENA) has been proposed by Cohen et al. [6, 7]. GENA provides a transmission service system that enables HTTP resources to send or receive notifications such as the distribution lists. Most of the popular event notification systems support many output format types. For example, the SWREG system [8] delivers plain text, XML, and JSON using delivery methods such as emails or HTTP POST to a specified URL.

Most of the educational institutions, especially for primary and secondary education, share their important news with students using their official websites or via the typical advertisements boards located on their premises. However, such archaic approaches are not effective as information may not reach the concerned buddies and the tent of the students to spend more time using electronic devices than staying in the schools reading ads. However, in higher educational institutions such as colleges or universities, it is common to distribute news using mailing lists or private messaging systems. But due to the cross functionality of the various schools in a university, it is hard to find a free, instant, and reliable notification service that delivers the information where and when needed. In addition to the fact that, any electronic system needs frequent login process in order to get in that system.

In this work, we proposed the solution, Post@, that offers an effective notification channel, reaching all students in any educational institution via desktop, web browser, and mobile applications without even any login information. Post@ implements the Really Simple Syndication (RSS) web format which is based on a standardized XML file format [9].

The remainder of this paper is organized as follows: The problem statement is analysed in Section 2. Section 3 describes the design of the Computer Platform system for Post@. The practical implementation of the system and the evaluation results is discussed in Section 4. Conclusions and recommendations for future work are presented in Section 5.

2. Problem Analysis

In order to find the best method of distributing the ads in any educational institute, we have conducted a survey over 1000 university students, around 100 of them from the Faculty of Information Technology (FIT) highlighting three main points: (1) The regular electronic methods to publish and read announcements (2) Students' satisfaction with the current methods and (3) The preferred technology to get the announcements. The survey has also been directed to administration people in the university since they are the publisher of the most announcements. The collected results were reflecting the following subsections.

Related to the regular electronic methods, Most of the administration people preferred the advertisements boards of the university website, the website pages, or using the university messaging system that we have mentioned earlier the "ASU-online" service. They have published their important announcements via these regular methods mainly because they used to use them and they are stuffed of duties so they are not bothered to learn a better way. However, the students via these methods have to pass by all the advertisements boards, or login to their ASU-online pages in order to get the important announcement. For a year now even though the administration people were not optimistic for a new method, they have to create a group in the widely used social media websites such as Facebook, and Twitter, in order to distribute the important announcement over the largest number of students in a short time.

The results of the most method used either for publisher to distribute the messages or for students to read them according to the survey results, depicted in Fig. 1, came as the following. The messaging system (ASU-online) achieved the best results (around 44%) regarding what the publisher really used for distributing announcements. Because such a system is trusted source of information and allows subscribers to respond back to the publisher via the login process. The social media websites came second (around 36%) because of their widely used. Then the university website and its advertisements board achieved the lowest (around 12% and 8% respectively), which