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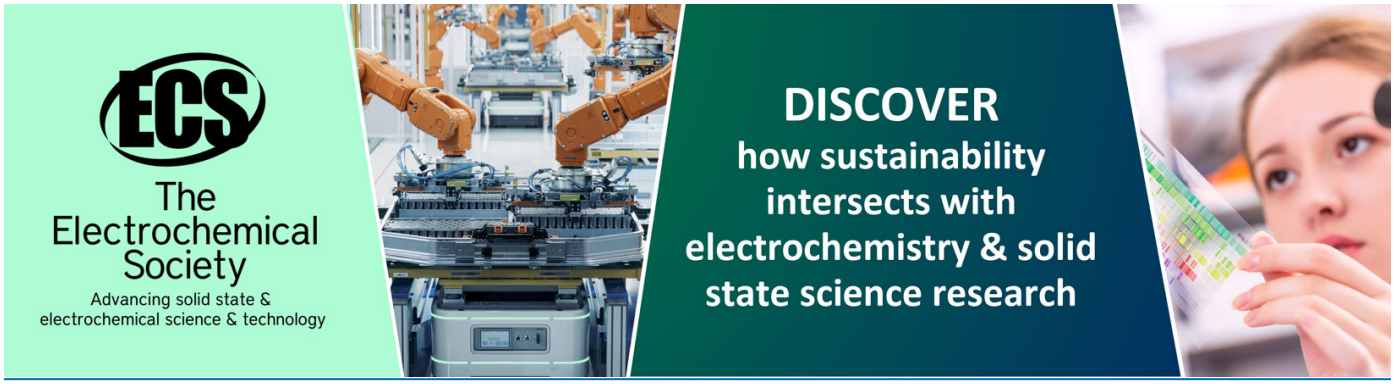

Implementation of hubs as a medium to broadcast academic notifications in a college

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Abstract. Through this study, we want to provide an alternative method to broadcast academic notification messages in a college using hubs as a transmitter. The academic notification provides information about the academic-related subject such as assessment, lecture schedule or reschedule, and information about the lecturer. The use of notification system on the smartphone so far it is very helpful. However, how effective is the current academic notification system, still doubts. The use of hubs as media to transmit can decrease the time and number of operators needed to broadcast the academic notification messages. So the use of hubs as transmitters can be an appropriate choice for admin of academic notification systems in a College.

1. Introduction

The implementation of academic notification system in university brings many conveniences for colleges, especially students. With a notification system ensures the academic information you want to deliver right on target in a relatively short time.

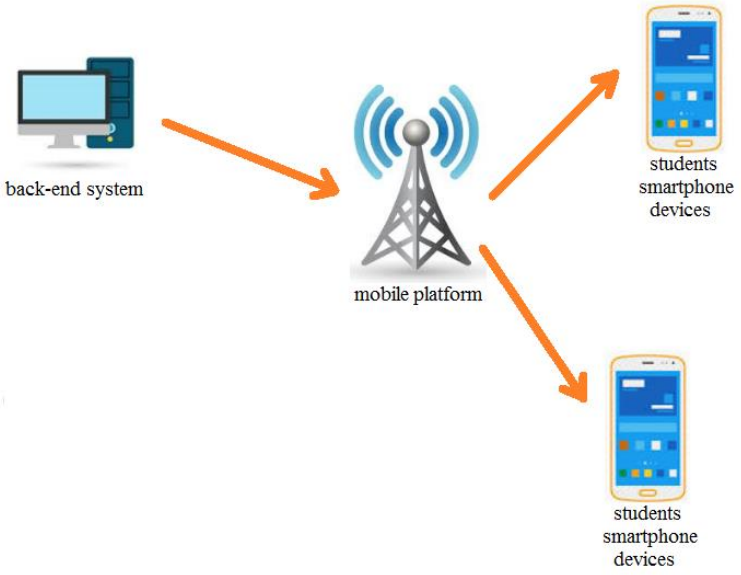

Figure 1 Academic Notification System Workflow

The notification system work scheme using smartphone device can be seen in Figure 1. The college's back-end app sends academic notification messages via a mobile platform. Then the mobile platform broadcasts academic notification messages to students according to the smartphone device they use.
Utilization and research related to notification system have been done [1]-[5]. This can be seen from the many articles and publications related to the notification system. One of them is the use of notification system for bus route information in a city [6]. Other research is even more important, namely the use of notification system to notify the safest route to avoid disaster [7]. In addition to the utilization of notification system, there are also studies that focus on the performance notification system itself in conveying information [8]. Another thing that is not less important is the security issue. Many studies relate to security issues [9]-[10] which can serve as a reference for building a notification system that is free from crime, such as theft and misuse of user data. After the security problem, performance and cost needed, we as a developer also pay attention to user satisfaction factor of academic notification system that is the student. There are many things that can be used as an indicator of student satisfaction in using academic notification system, such as ease of obtaining services, the accuracy of information and time of information delivery. There is research that focuses on user satisfaction with the performance of a system, which can be used as a reference in the future.

2. Experimental Methods

Figure 2 shows the steps we used in implementing hubs in the academic notification system.

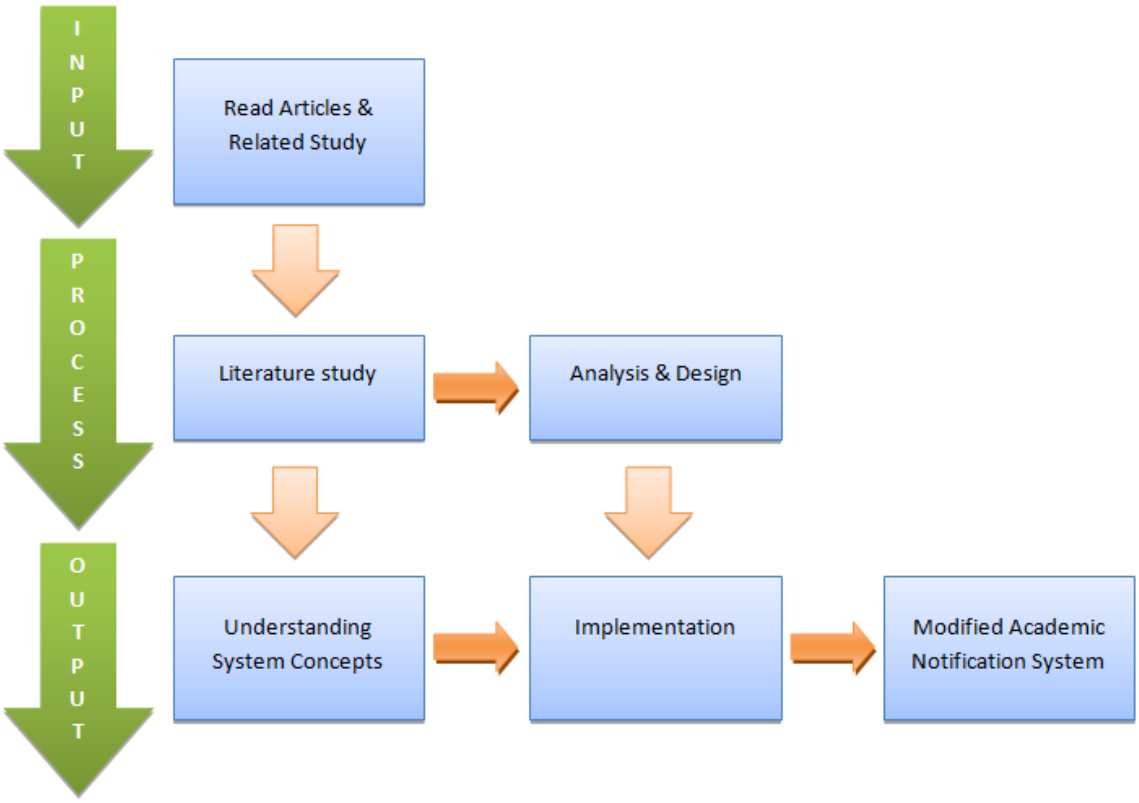

Figure 2 the Steps: Input, Proses, and Output

The first step we do is to read the related article with the study that will be done. After doing the literature study, we know the mechanism of notification system. Based on the analysis we also know the limitations of the academic notification tool. Furthermore, make design academic notification

system that can reduce the limitations or minimize the deficiencies that have been found in the previous stage. The end result is in the form of an improved academic notification system design.

3. Results and Discussion

Figure 3 shows the architecture of the academic notification system with multiple mobile platforms connected, because there are several types of smartphone devices used by students. In other words, students use several different types of smartphone/heterogeneous. So to accommodate this, the college must use the mobile platform in accordance with the smartphone device used by the students.

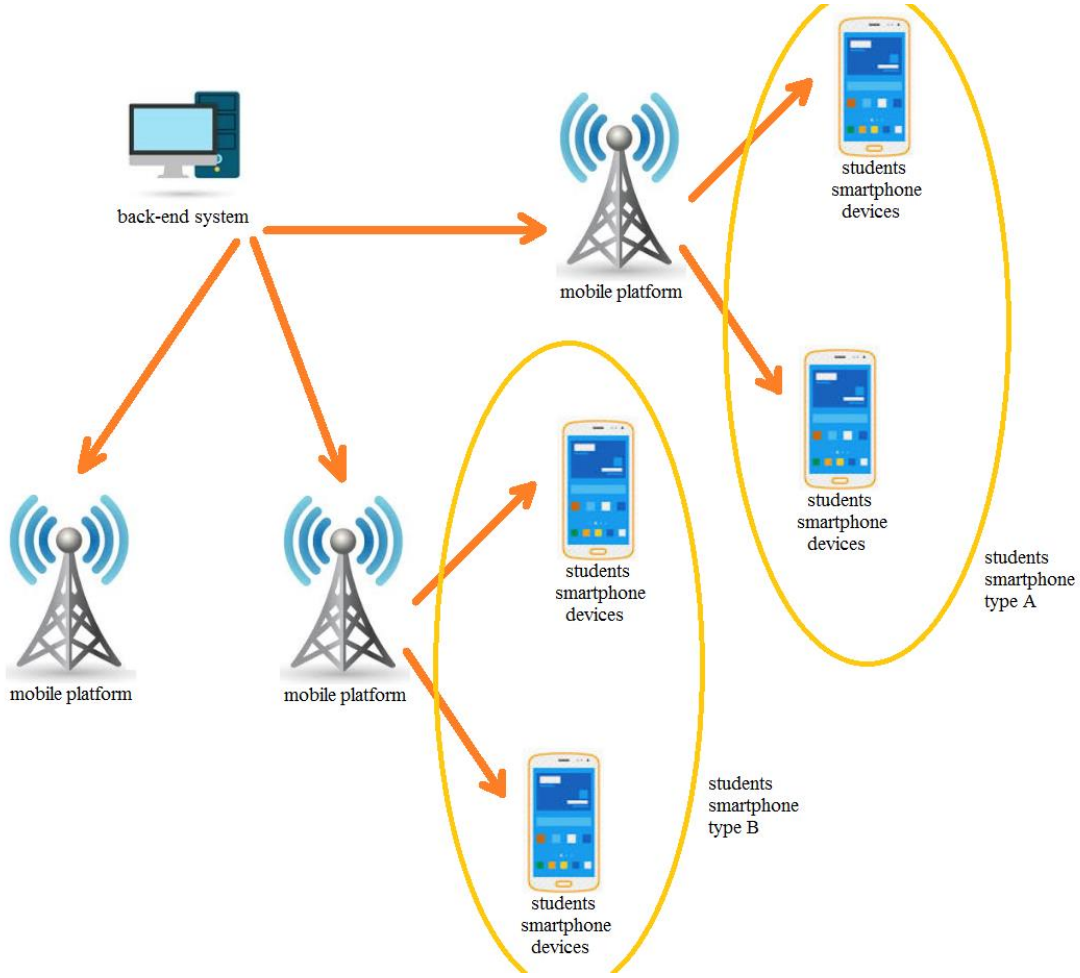

Figure 3 Academic Notification Systems

Figure 4 shows the hub's use of academic notification system architecture. With the use of hubs, admins in college do not need to connect to multiple mobile platforms. This happens because the hub serves to translate the notification message code for different smartphone devices. College operators simply make one delivery for several types of smartphone devices used by students. The following is an example of a notification message code:

```
{
        aps: {
                alert: "Lecture Schedule"
        }
}
```

This script is one example of the code used to send academic messages to students. The script used follows the standard rules for writing notification messages that have been agreed upon by the consortium of notification service providers. Code '`alert`' is used as an emphasis on the message to be sent. The message sent was titled "`Lecture Schedule`". This code is a commonly used standard, but there are several mobile platforms that have their own rules for writing code. What needs to be done is to choose the method of writing the code that is most widely used, depending on the type of smartphone used by college students.

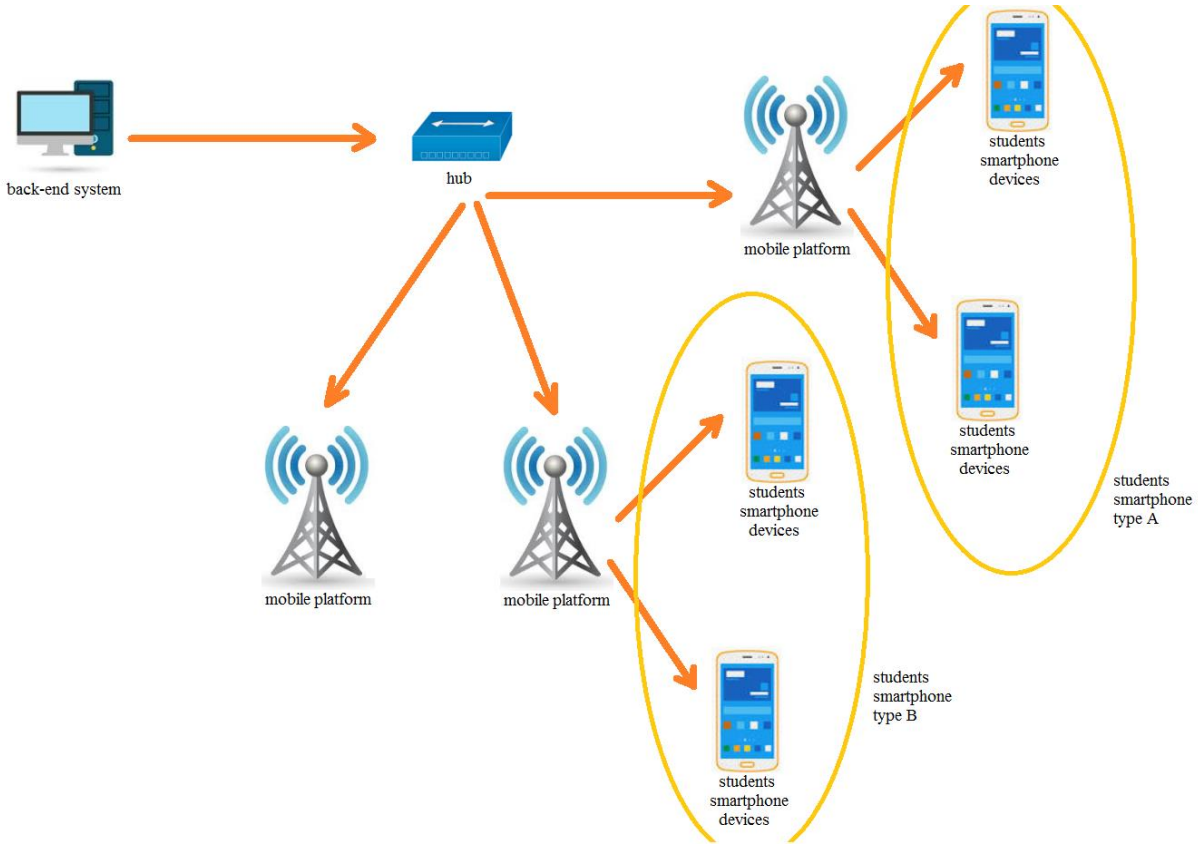

Figure 4 Academic Notification Systems with a Hub

With the use of hubs as transmitters the process of sending academic notification messages to be faster. In the future the academic notification system that we developed can be integrated into the college information system, these needs to be done so that the data synchronization process becomes easier. This integration process can be done because in principle the college information system and academic notification system has the same flow and purpose, gives the information to the student in college. That is conveying information to the student in college. Similar research to the utilization of flow of data for system development we have done in other studies [11]. With data synchronization between college information systems and academic notification systems, it will also facilitate the process of information retrieval. But of course, there is still a need for a reliable information-seeking mechanism, so that information relating to academic problems can be easily found.

The most significant thing that can be felt with the utilization of hubs is the reduced time required to deliver an academic notification message, which ultimately impacts the operational cost efficiency of the academic notification system. The next step that can be done is to start calculating the number of costs required for one operational period, then it can be predicted overall cost required. So the success rate of academic notification system after implementation of hubs can be known. Calculation of the

success rate with different cases [12] can be used as a reference to know the significance of hubs implementation in the system of academic notification.

4. Conclusion

The use of hubs in academic notification system is the right step because the use of hubs can cut costs and time required to make delivery of academic notification messages to the students. Without the hub, we need more than one mobile platform, and the time needed to send academic notifications is much longer. Further testing is needed to be able to implement the hub in the real notification system.

5. References

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