

Event Management System with SMS Notification for Mindanao People's CareFoundation, Inc.

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Abstract

Event management in offices, firms, businesses, and other types of organizations is not an easy task. To ensure that the appropriate individuals receive the appropriate message at the appropriate moment, effective communication is required at every stage. This criterion is readily satisfied when utilizing SMS on mobile phones. The goal of this study was to solve the issues that come up while handling events manually, provide a practical solution, and hasten the transmission of information about the client's meetings and activities, the Mindanao People's Care Foundation Inc. (MPCFI). The main objective of the project is to design and develop an Event Management System with SMS notification to notify the employees of the aforementioned clients about important and/or urgent events and announcements. The system was deployed using the framework - dependent deployment with Microsoft Visual Studio. While the database was deployed using SQL Server. This research provides significant contributions in promoting productivity since it is easy to use and is time-saving. It also provides safety and security of records since it's free from the flaws of using the traditional paper and verbal announcements. With its SMS notification feature, the employees and volunteers can quickly receive the important messages without the need of internet connection. It therefore promotes good flow of communication between superiors and subordinates within the office/organization.

Keywords: Communication, Event Management System, SMS Notification, SQL Server, Microsoft Visual Studio

Introduction

An event is defined as something that takes place at a specific time and location with for a specific reason with someone or something involved. someone or something involved, specifically (John, 2014). There isn't a single, widely agreed definition of an event. Osunade et al. (2014) noted that people engaged in a wide variety of activities that were normal, emergency, planned, and unscheduled in nature. During the old days, information of events, especially the planned ones, were relayed to a person or a group of people through verbal announcements and through pinning pieces of papers in the bulletin board. Time has proven that these old methods of notifying others about important events have their drawbacks. After all, papers are susceptible to being remove and lost, furthermore, it requires manual managing and is time consuming.

The most crucial information that needs to be punctually given wherever the individual is are events (El-Gazzar et al. 2010). Events are frequently announced in a short amount of time, which makes it difficult for people to attend or respond to them. Therefore, it is crucial that the means of notifying others stay up with the most recent technological

advances in order to be informed of the crucial aspects of occurrences that require prompt response. Information and communications technology has already been shown in numerous studies to assist people stay updated with world events (Vastenburg et al., 2009).

For educators, laborers, office workers, business owners, and even regular citizens, the significance of event management for a successful event plays a key part. Therefore, managing an event is not an easy task. To ensure that the appropriate individuals receive the appropriate message at the appropriate moment, effective communication is required at every stage. This criterion is readily satisfied when utilizing SMS on mobile phones. Shirazi et al. (2014) noted that notifications, which alert users to a variety of events, are a key component of mobile phones.

Even though chat programs like Facebook Messenger and WhatsApp are widely utilized, a 2015 research by the Pew Research Center found that 94% of smartphone users still send text messages. According to Deloitte's Global Mobile Consumer Survey, the Philippines is the country in Southeast Asia where approximately three-quarters of mobile users still favor SMS (2016). The Philippines makes substantial use of SMS technology. The World Bank also noted that the

widespread use of mobile devices in the Philippines has improved access to information for farmers, increased civic participation, provided taxi drivers with links to traffic data, and served as a tool for disaster preparedness, to mention a few (Development Market Place, 2012).

With the problems that arise with manual managing of events and with the fact that a lot of individuals, if not all, have their own mobile phones capable of notifying them, it is under these reasons that bring about the proponent to design and develop an Event Management System with an SMS notification using a GSM modem for an effective dissemination of information about upcoming meetings and activities of the client. The development of this Event Management System is an attempt to give working solutions and address the problems of registration of data, managing and storing bases, organizing and managing events such as meetings and activities, and managing important and/or urgent information dissemination.

Research Questions

The following are the problems assessed and analyzed with regards to usage of social media platforms as event notifications for MPCFI:

- Social media platforms such as Whatsapp, Viber, Telegram and Facebook Messenger require internet connection to operate. It means, no or weak internet connection can cause delay or no messages received at all.
- These social media platforms have mute options, wherein if activated could lead to delay of reading important messages.
- Using internet connection can be pricey and impractical if solely used for sending messages.
- Usage of these platforms doesn't provide an electronic employees' or members' information data base.
- There are still employees, such as from the seniors' group, who still prefer the traditional way of communicating, using SMS for example. One of the reasons considered is that not all message recipients have android phones.

With the problems gathered, if these are not addressed, it could lead to noncoordination of important announcements, lesser participation or engagement of the employees to meetings, office events and activities, lesser work productivity and less secured data base since papers are prone to be lost or damaged due to natural circumstances.

Literature Review

Health Emergency Event Notification System

A study conducted in a Geriatric Care Home in Mexico focused on seamless service mobility paradigm (Beltran et al, 2012). Like the proponent's system, it also sends notification through SMS, stores contact details (specifically emergency contact numbers), the recipients of the SMS notification can only receive messages but can't reply and the stored numbers' owners have no options of unsubscribing from the notification. The architecture of the system was created to allow data from a WSN (Wireless Sensor Network) to be transmitted over the WiFi and cellular networks even when there is no real-time connection.

Personalized Mobile System Application

In Malaysia University, a customized mobile system application was created that uses an event-based approach to provide context-aware customized notification services that are specifically designed with the stakeholders, including students, academics, and the university, in mind (Simon et al, 2012). The following features share similarities with the system of the proponent: notifications are sent via SMS; it also stores contact information; can add new contact information or edit existing ones; notification details sent are saved in the database; subscribers can only choose their events and receive the notification; response option is not available; and, to send notifications, the administrator must choose contacts to be notified. In order to enable the implementation of this application, a web-based portal has been created. SMS notifications of events are provided based on the subscribers' preferences and current context. They must subscribe, which is free, to the events they want to be informed about and choose the time they want to be informed. After the subscription procedure is over, the event and delivery system records the subscriber's profile. In order to cease getting notifications, the subscriber can also delete or unsubscribe from an event. The subscriber's data is obtained through the web- and mobile-based Subscription Management Application. The Notification Services can match subscribers to submitted events by using Transact-SQL queries. Extensible Stylesheet Transformations (XSLT), a formatting technique, is used to structure messages so that they can be delivered to mobile devices with professional and user-friendly notification text. Additionally, it has 3 content format distributors: HTTP Channel, which transmits content

via the Web to mobile devices; GSM Channel, which employs a modem/SMS gateway; and Zhiing Channel, which sends content via email or mobile devices. It also has 3 content format distributors: HTTP Channel which sends through Web to the mobile; GSM Channel which uses Modem/SMS Gateway; and Zhiing Channel which sends it to the mobile or the e-mail. There are two distribution options: multicast delivery, which distributes a single notification to many subscribers, and digest delivery, which groups numerous notifications into a single message for a single recipient. The prototype employs the GSM delivery channel, which has its own drawbacks and functionalities, and is used by administrators to post events and send notifications to devoted subscribers. The actual system will send bulk SMS to certain students, if not all of them, hence a more advanced and specific delivery channel is needed. The application's potential users participated in a user acceptance test. More than 80% of respondents gave the application a positive response, indicating their satisfaction with it.

Medical Event Notification System Using SMS Technology

With the primary goal of applying low-cost services for the notification of vaccination activities and the accessibility of a specific medical assistance at health locales where in these services are not frequently offered in Argentina, a system using SMS in notifying medical events was developed (Voos et al, 2013). The following features share similarities with the proponent's system: it sends notifications via SMS using a GSM/GPRS modem; the SMS service was chosen over an Internet connection using GPRS due to its widespread availability in Argentina and the ability to receive or send messages from any mobile phone; it stores contact information (both patient and specialist information); the notification details sent are saved in the data base (as well as the patients' responses to allow for advance knowledge); and it stores contact information (both patient and specialist information). In order to send notifications, the administrator must choose which contacts should receive them. It can also add new contact information or change existing ones. Patients who get the notifications can quickly respond to them. The project includes SMS send/receive software that runs on a PC with a modem and enables remote locations without an Internet to use it. A web module is developed with an Internet-based system access to be able to be notified by experts or other people connected to a specific activity. This module also enables tracking responses to SMS messages sent. Its SMS Messaging Module makes use of the Frontline SMS messaging system, which was chosen for its

compatibility with other software components already in use and ease of use by non-technical end users. Additionally, it contains a web module that provides access to a website for database module upkeep, new medical event generation, and appointment duration configuration for this specific notice. It is also possible to see how the alerts were received and how the health initiative performed. In order to have the same information in both locations, it also features a replication module that allows the data contained on the computer to be replicated to the website and vice versa. The system's advantages include minimum hardware needs, simple integration with other telemedicine platforms already in use, and the ability for notification recipients to utilize any mobile device that can receive SMS messages. The technology can successfully support the medical specialists, enabling them to carry out their tasks in a more structured manner and boosting the productivity of medical campaigns. Furthermore, as receiving and sending SMS is a routine task in daily mobile phone use, the training needed for potential patients to use this system is minimal.

SMS-based Event Notification System

An SMS-based event notification system was created in Nigeria (Olaleye et al, 2013). The proponent's system is similar in that it delivers notifications by SMS, stores contact information and details in a database, allows users to enter their user ID and password, can add or change contact information, and can send notifications once the administrator chooses which contacts to notify. Contrary to the proponent's system, this enables scheduling of SMS messages across all SMS gateways, even those that don't support it internally. Additionally, users have the option to cancel any scheduled messages if necessary. The send method returns an object that includes the response message from the SMS gateway and a warning signal for errors whether the send procedure was done. The reply will be selected from the interface's predetermined set of replies, ensuring that all SMS gateways use the same set of responses.

Fingerprint Based Student Attendance System Using GSM

SMS Technology can be used in attendance system, just as the Fingerprint Based Student Attendance System Using GSM by Verma and Gupta in India (Verma & Gupta, 2013). Just like the proponent's EMS with SMS Notification, it can send notification thru SMS using a GSM modem. The system keeps the contact information and information in the database

but it has a module for attendance and fingerprint acquisition. It can carry out automatically tasks including gathering fingerprint information, processing it, wirelessly transmitting it, matching fingerprints, and creating an attendance record. With this technique, there is no longer a need for stationary items or staff to maintain records. This system utilizes a SIM 300 GSM module. It is an industrial GSM module that offers voice, data, short messages, and FAX as its four transmission options.

E-Notifier An Android Application for Event

To ensure that everyone is informed about relevant events like conferences, workshops, placements, etc., Kumari et al built an application that is completely functional and would determine the activities taking place in and around the institution or organization (Kumari et al, 2015). The contact information for subscribers is saved in a database, similar to the EMS with SMSN, and only the authorized user has access to re-add an existing user if their mobile phone is stolen or to add a new user. If a user leaves the organization, the authorized user may remove them. The E-Notifier has more coverage because it reaches the active user with the broadest assortment of activities. Users can search for events based on their areas of interest, such as sports, culture, alumni, etc. They can also follow their favorite events to receive notifications when new events are added. It is also simple to locate local activities like inter-institutional gatherings, etc. With a single tap, users can view events happening in the institute categorically from several categories including sports, departments, cultural events, etc. Additionally, the alerts can be in a variety of forms, including PDF, DOC, and RTF, and they employ JavaScript Object Notation (JSON), which is the ideal replacement for XML, the Android operating system, PHP (Hypertext Pre-processor), and the MySQL database. In addition to reading announcements, staff and students can use the application's blog to participate in events and respond to them. The component that displays information uses dashboards as its user interface, and it has a web server and database that are utilized to dynamically contain user login information along with events and notifications. Guest users can sign up for activities at the college and check the users who have already signed up. However, guest users are not permitted to participate in the blog. The software can be utilized anytime and anywhere.

Data Sharing Application which Uses SMS Notification

A data sharing application which uses SMS notification was developed by Palapessy and Hadisukmana. It is a tool that can be used for data sharing within an organization. In addition to data sharing, the application for sharing data also has a number of other features that can improve communication among team members. The administrator, user client, and system manager are the three primary parts of a data sharing software. News and Events are the extra features. This application aims to notify the user of the most recent actions taking place within the organization. This kind of information can increase a member's sense of pride in their affiliation with the organization and raise their level of awareness. This application was created using PHP technology along with Rapid Application Design and additional Java script. Additionally, the program, which functions like a digital library with a wider selection of content, can be accessed via a local area network. To deliver SMS notifications, it makes use of the user-friendly and simple-to-use NowSMS application, which is an SMS gateway. It was created using a process known as Rapid Application Development. Analysis, design, build, and test processes can be condensed into across a number of quick, repetitive cycles of development using the Rapid Application Development (RAD) technique. Comparing this to the typical sequential development paradigm has a number of clear benefits. Rapid application development encourages the creation and delivery of programs and/or systems in a timely, effective, and correct manner. In comparison to other approaches, RAD typically fosters greater documentation, user/designer communication, and user cooperation. The author uses the RAD system since it has a quick workflow and gives them more time for pre- and post-production. The user must send a request to the system with the ID of the file they wish to download in order to do so. The system will next perform a database query to retrieve the file's information and send a message box with information about the file and the download process. The system will begin the process of downloading data from the database to the user's PC after the user confirms that he or she wants to download. Additionally, the system notified the file's owner by SMS (Palapessy & Hadisukmana, 2016).

Utilization of Short Message Service (SMS) for Library

Ekhsan et al. created an alternative primary school notification system called the ePSNS (electronic Primary School Notification System) that leverages web SMS technology in a primary school in Malaysia

(Ekhsan et al, 2018). Information can be sent from a computer to a mobile phone at any time with the use of this connectivity, and the receivers' contact information is maintained in the database, similar to how EMS with SMSN distributes notifications through SMS. This system however uses SMS broadcasting to send notifications to group of recipients. In order to retrieve parents' phone numbers, the system is linked to a MySQL database. The system will then be linked to an SMS Gateway service, allowing it to send text messages to the recipients, the parents. Twenty users participated in a usability test to gather feedback on the SMS parental notification system. According to the test results, every single user commented favorably on how simple the system was to use and expressed satisfaction that it could take the place of the previous system. According to the findings, it is strongly advised to integrate SMS technology into the primary school notification system.

Event Management System

Sai Kamal created an event management system as a web application in Hyderabad (Kamal, 2022). This Web application has a form that asks users for information such as their name, email address, mobile number, the event they want to register for, their class and section, and their address. The admin just has to input the admin login and password to access the admin module because it is not available to end users. The system was designed and developed using the Waterfall paradigm, same like EMS with SMSN. Sai Kamal's EMS, however, allows people to easily interact and register for the events of their choice, in contrast to the proponent's method. PHP, MySQL, HTML, and CSS are used to create the web application. The web application's server-side scripting is done using PHP. Additionally, the frontend portion of the program is built using HTML, CSS, and styled components. The Heroku Cloud is used to install the event management system. The events generated are kept in a MySQL database on an AWS-hosted JawsDB server. SQL queries are used to retrieve the event data. The web application has the ability to dynamically produce detailed reports that may be emailed to the admin. These reports contain information on the registered users. It can also be accessed using any device, like a smart watch, a mobile phone, a tablet, or a desktop computer. However, an internet connection is needed.

Methodology

System Overview

This Event Management System provides clients easy access since it doesn't require an internet connection which is not always available. It is also user-friendly for constructing, entering, and updating data, executing, and managing the events to be announced. The system also provides immediate event notification dissemination in just seconds and offers a limitless number of notification receivers powered by an SMS notification channel.

Physical Environmental and Resource

The application that has been used is Microsoft Visual Studio 2013. It is the software responsible for the system's execution. To run this software, the requirements are as follows:

Hardware Requirements:

- Desktop or laptop (Specs: 500 GB Hard Drive, 32 or 64-bit OS, 4 or 8 GB RAM, Intel Core i3, i5, i7 processor).
- Direct X 9 capable video card running @ 1024 or higher
- Computer Peripherals(Mouse, Keyboard, Monitor)
- A GSM modem: Globe Tattoo broadband and SIM card

Software Engineering Requirements:

- Microsoft SQL Server Management Studio Express: To register information in the database server, this is utilized as the backend database.
- Microsoft Visual Studio 2013: This is the setting in which desktop application development takes place and is utilized as the front end.
- Operating System: Windows XP, Vista, 7, 8.1, 10, and 11 (64 or 32-bit OS)
- System Users/Administrator: Is a person in charge of maintaining, configuring, and ensuring the reliable operation of computer systems, particularly multi-user computers like servers.

IT Assistant or Computer Vocational Graduate

- Must learn how to handle a system and database
- Computer literate

Design and Implementation Issues

Along the procedure of designing, various errors in the system were encountered while debugging. This problem was resolved by further research and consulting an IT consultant who has reliable knowledge with regard to the system. Working under time constraints was also a challenge considering the

pressure of completing the system with limited knowledge. However, encountering the system's algorithm for the first time was a quest that was worth confronting. After deploying the system, installment issues were confronted since the specs of the available computer of the client aren't compatible with the system. As a result, there was a need to reinstall the system. The system needs to be adjusted in able to accommodate the available computer of the client. Further challenge was also confronted when there was a need to connect the database into the system. In order to connect, it was needed to change the path of the system toward the database

Results and Discussion

The system was evaluated using a revised survey questionnaire to be able to make it appropriate for the research question and objectives. The survey questionnaire sought to evaluate the system in terms of service, usability, interaction and function. The respondents were a total of fifty (50) MPCFI employees and volunteers. The system assessment was based on the five (5) point Likert Scale as follows: 5-strongly agree, 4-agree, 3-uncertain, 2-disagree and 1-strongly disagree. The given scale was used to interpret the result of the study: 4.50 – 5.00 Strongly Agree; 3.50 – 4.49 Agree; 2.50 – 3.49 Uncertain; 1.50 – 2.49 Disagree; 1.00 – 1.49 Strongly Disagree. The result of the evaluation was tallied, tabulated, analyzed and interpreted.

Services

Table 1 presents the extent of the effect of Event Management System with SMS Notification for Mindanao People's Care Foundation in terms of Services. The respondents rated *agree* the extent of the effect of Event Management System with SMS Notification for Mindanao People's Care Foundation in terms of Services with a grand mean of 4.02. This implies that it can promote productivity since it is time-saving. It takes a few minutes for the receiver to open their SMS messages. According to Mobile SQUARED, 90% of SMS are read within first 3 minutes (Ramos, 2020). It is also reliable in terms of on-time arrival of notifications considering the network connection. Tomacruz (2018) asserts that delivering alerts or notifications through SMS requires a longer transmission time since messages are sent "point-to-point," yet this on-time delivery of notifications is made possible because messages only need to be sent to fifty or fewer recipients. With regards to being flexible or can cancel anytime, which

got the lowest mean, this might be due to the fact that only two people, namely the Administrator and HR Officer can practice this function. The system is also available considering the fact that the receivers don't need to have any internet connection to be able to receive notifications. SMS comes pre-installed on every phone. This means that no internet or chat apps is needed to be installed (Ramos, 2020). Lastly, it is also safe – safe from receiving spam messages since the receivers were informed ahead of time about the system's contact number and is also safe from outsiders acquiring the employees' and volunteers' contact numbers. Once message is sent, it can't be deleted unless the receiver himself does so. Services of EMS with SMS notification's evaluation on its safety got the third lowest mean. One of the factors is the fact that the messages sent are not end-to-end encrypted. This means that the cellular provider can see the contents of messages that were sent and received which were stored on the cellular provider's system (Hoffman, 2021).

Table 1. *Mean rating on the extent of the effect of Event Management System with SMS Notification for Mindanao People's Care Foundation in terms of Services*

Services of the Event Management System With SMS Notification Mindanao People's Care Foundation is;	Mean	Descriptive Interpretation
1. Quicker (time-saving)	3.96	Agree
2. Reliable (on-time arrival of notifications)	4.10	Agree
3. Flexible (can cancel anytime)	3.78	Agree
4. Available	4.22	Agree
5. Safer	4.04	Agree
Grand Mean	4.02	Agree

As shown in Table 2, in terms of usability, the respondents rated *agree* the extent of the effect of Event Management System with SMS Notification for Mindanao People's Care Foundation in terms of usability with a grand mean of 4.12. This result indicates that the system is easy, satisfying and comfortable to operate. Its simplicity makes it easier for any user utilizes this system effectively considering that the Administrators and HR Officers are in their senior years and prefers straightforward systems or applications. The system's ease of use, ease of learning usefulness has an impact to the user's satisfaction.

According to Hassan et al. (2011), a system's usability depends on how well it works and how simple it is to use. How well users can use software's capabilities is another aspect of usability (Tanaka, Bim & da Rocha, 2005). The goal of usability in human-computer

interaction (HCI) is to make sure that the user experience is effective, efficient, and gratifying (Hartson & Pyla, 2012).

Table 2. *Mean rating on the extent of the effect of Event Management System with SMS Notification for Mindanao People's Care Foundation in terms of usability.*

Usability of the Event Management System With SMS Notification Mindanao People's Care Foundation is;	Mean	Descriptive Interpretation
1. Easy to operate	4.18	Agree
2. Satisfying to operate	4.10	Agree
3. Comfortable to operate	4.04	Agree
4. User-friendly	4.06	Agree
5. Easy to understand.	4.26	Agree
Grand Mean	4.12	Agree

Interaction

As shown in Table 3, in terms of interaction, the respondents rated *agree* the extent of the effect of Event Management System with SMS Notification for Mindanao People's Care Foundation in terms of interaction with a grand mean of 4.06. This data suggests that whenever the user makes mistake, the system aids him to recover easily and quickly by sending messages that clearly inform how to fix the problem. This information helps the user complete the task and scenarios. As it is presented in Table 11, these three categories/criteria had the lowest mean. This is because only two main users, the Administrator and HR Officer, were able to experience this. But it also indicates that the system is capable of continuing to function and withstanding external influences. While the last two got the highest simply because the receivers have the resources needed (their phones) and the messages of the notifications are clear. Since this system's notification is based on a SMS, which has limited character inputs, messages are therefore should be short, straightforward but precise.

Table 3. *Mean rating on the extent of the effect of Event Management System with SMS Notification for Mindanao People's Care Foundation in terms of interaction.*

Interaction of the Event Management System With SMS Notification Mindanao People's Care Foundation is;	Mean	Descriptive Interpretation
1. I can quickly and easily recover from mistakes	3.82	Agree
2. It sends me texts that expressly explain how to solve problems	4.12	Agree
3. The information is help me complete the task and scenarios	3.96	Agree
4. I have the resources (mobile phone) necessary to use	4.24	Agree
5. The information (such as messages) provided is clear	4.16	Agree
Grand Mean	4.06	Agree

Function

Table 4 presents the extent of the effect of Event Management System with SMS Notification for Mindanao People's Care Foundation in terms of function. The respondents rated *agree* the extent of the effect of Event Management System with SMS Notification for Mindanao People's Care Foundation in terms of function with a grand mean of 3.94. This indicates that the system performs as expected for the supplied attribute. It allows faster and accurate data processing since it's paperless, system is so easy to operate and is compatible to the client's unit. Additionally, it gives correct findings and runs without any glitches or issues. This is very important and critical in terms of relaying important and urgent information. Additionally, it protects against accidental or intentional illegal access to programs or data. This is due to the system's strong user ID and password security functions that only the Administrator and the Human Resource Officer can access the main menus. It undertakes data processing and all target outputs achieved and it provides results based on the tasks assigned to it. As shown in the table, the means were in their lowest since the evaluation of this system's function is mainly to be dealt by the two main users, the Administrator and HR Officers.

Function or functionality refers to a system's capacity to carry out the tasks for which it was designed (InformIT, 2012). This implies that the higher the functionality rate or mean of a system, then the more it is task-oriented. With the grand mean of this EMS's function, it can be concluded that this system is focused on completing the particular tasks in which it was designed of.

Table 4. *Mean rating on the extent of the effect of Event Management System with SMS Notification for Mindanao People's Care Foundation in terms of function*

Function of the Event Management System With SMS Notification Mindanao People's Care Foundation is;	Mean	Descriptive Interpretation
1. Allows faster and accurate data processing	4.14	Agree
2. Produces correct results and runs without any glitches or issues	3.80	Agree
3. Safeguards against unauthorized access to programs or data, whether unintentional or intentional.	3.92	Agree
4. Undertakes data processing and all target outputs achieved	3.86	Agree
5. Provide results-based on the tasks assigned to it	3.98	Agree
Grand Mean	3.94	Agree

Conclusion

The project completed has given the proponent a better understanding of a number of topics connected to our course of study. In order to ensure that the message or information is delivered to all chosen recipients, this study has focused on designing and developing an Event Management Notification System that will be used by Mindanao People's Care Foundation, Inc. (MPCFI) to send the notifications directly to the employees' cellphones as SMS messages. The system's goal of sending clients SMS notifications was met as well as the specific objectives from assessing the current method and status of event planning and coordinating important information to employees of MPCFI to create what is suitable for the aforementioned employees. The requirements needed for the designing of the EMS were identified through research and consultations. The identified requirements are then thereafter gathered. Upon completion, after series of trial and errors testing, the system's operation was validated and implemented to the clients' office.

After three months of deployment, a survey questionnaire was the main tool utilized to collect data in order to meet the study's objectives. The study's samples had a total of 50 respondents. The data were tallied, analyzed and interpreted. Based on the results, data revealed that the system serves well its clients in terms of services, usability, interaction and function. After three months of deployment, feedback from the employees revealed that the system is usable for disseminating important office information and announcements. Faster communication and more knowledge of office events and activities were the outcomes. However, every piece of academic study includes flaws and limitations that present a research gap for later researchers. A knowledge gap needs to be filled, and this system provides a number of future

works for people who might do a comparable study. Several design and development-related problems came to light throughout the development of this system. Based on the following considerations, relevant projects may be designed and developed in the future: (1) The availability of scheduling and canceling SMS messages. (2) Development of a mobile application version for portability and accessibility. (3) If this system is ever commercially deployed and is required to provide service to a large number of receivers, another method of sending SMS messages will need to be utilized, one that can handle increased traffic without experiencing interruptions from credit reloads. The Short Messaging Peer Protocol is one such technological recommendation (SMPP). (4) Another extension could be the submission of MMS along with SMS. In this case we could also send multimedia as e.g. images. This particular extension also requires other tools. (5) Survey questionnaires should have their separate copies especially for the receivers and another separate one for the main users or the technical users.

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