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Application of Incoming SMS to a Website, Control the Website to Send Bulk SMS

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Abstract - In this paper I have discussed an idea to control sending of web SMS through SMS sent from cell phone. A new technique of controlling websites using SMS will provide remote control to web applications. In this technique, one message as a command will be sent from a cell phone to web application. The command will generate another customized message for one or more receivers and sent through bulk SMS service API. This concept is based on programming language conditional statements. As there are commands to operate computer with different functionalities, control message will work in the similar fashion to initiate the information transfer. The control message (sent from a mobile device) consists of some parameters through which the single control message will transfer customized information to defined user or group via SMS anytime anywhere even if the sender does not have multimedia cell phone.

Keywords: Short Message Service, Control Message, Mobile device(s), Bulk SMS API, Conditional Statements, Web Server, Website, Java Server Pages, Cell phones.

I. INTRODUCTION

Short Messages have become a part of our daily life for offline communication. Now most users send text messages via internet using bulk SMS API. Even the service providers have reduced their work with automated reply to user with predefined text in the message. But in that case, the messages work as an acknowledgement to the sender. Similar auto-reply system is maintained with e-mailing process.

Also we have witnessed many devices are being controlled using SMS. In which a device reacts upon receiving SMS and follow the programmed commands.

This time, instead of device, I simulated to control a website. In this section, I briefly describe related work. I tried to control sending of web SMS through mobile SMS. The approach is categorized in two parts, incoming message and outgoing message(s) i.e. control message and generated messages respectively. Control message sent from a mobile device to the internet website, will contain a predefined command structure, which initiates the process of sending messages through the web. Through commands web page recognizes the keywords and parameters. A data dictionary containing the command structures is matched with the control message and if satisfied, the program code written in server side programming language will react accordingly and send messages to the defined destination(s).

Details of this system are described in the remainder of this paper. The details are organized as follows: Section II covers the methodology and command base or code written using Java Server Pages is covered in section III. In section IV, I have analyzed the cost factor, with the view of cell phones and web servers with some benefits of the system. Conclusions, limitations with future work are discussed in section V.

II. METHODOLOGY

In this section, I elaborate the process of controlling web SMS with the help of figure 1. Some prerequisites of the system are (a) mobile phone, capable to send SMS (b) working website through which a user can send and receive SMS (either termed as web SMS or bulk SMS). (c) The mobile phone number can be registered with the website as a privileged user, as I do, in order to authorize the user to

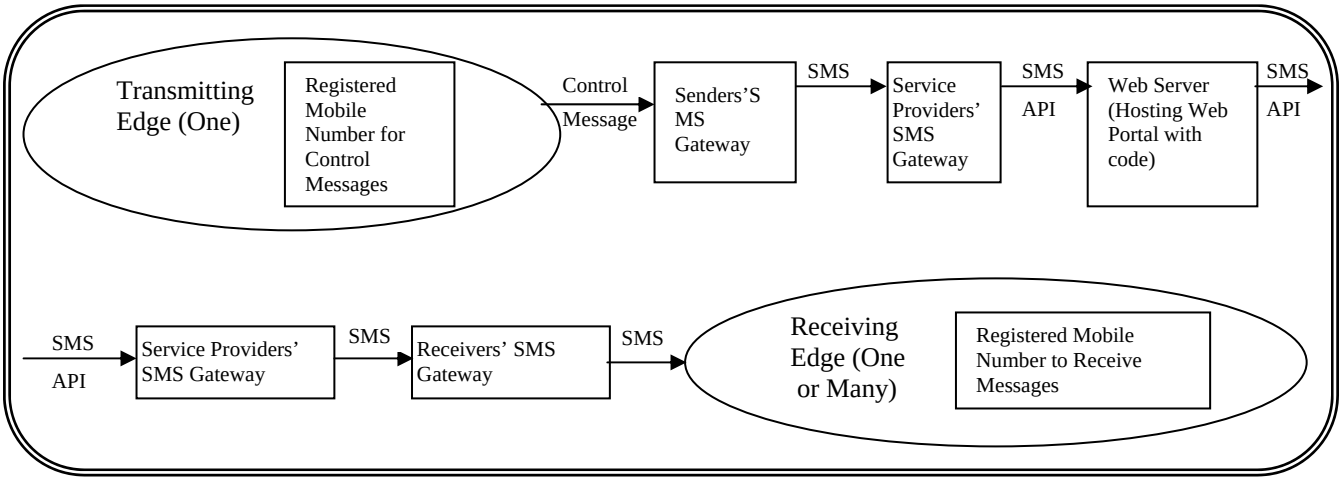

Figure1: Process to control web SMS.

send control message from the phone number. (d) Web application programming language to write code.
A registered mobile number user (registered with data dictionary of the website) sends a control message to web server. The message reaches the web server through sender's SMS gateway and bulk SMS service provider's gateway, which considers the control message as normal text message. Web server contains the web portal that recognizes the keywords and parameters in the text and transmits a text message for a particular group of users (those having contacts in SMS list) through bulk SMS API. The text message is transmitted via SMS gateways of both bulk SMS service provider and receivers' SMS gateway. In the next section the detailed concept with program code written in java is discussed.

III. COMMAND BASE JAVA CODE

It is a command based code used with parameters that are validated by the program. Therefore, according to the code defined, the control message sent from authorized mobile number must look like (Table 1)

cMsg: -t <tablename> -g <groupname> -m <message>

cMsg: is a command name from where the web site after receiving the message can easily judge that it is a control message and not a simple incoming message.
-t: It is a parameter to activate a particular table to access group or user mobile number(s). This helps to reduce searching time for a mobile number or mobile numbers in a particular group. The table can differentiated based upon students, faculties, staff members, peers, subordinates, management etc. It also depends upon different organizations.

-g: This parameter is used to define a particular group of interest to which a message is required to be sent.

-m: This parameter signifies the message to be sent to selected group of common concern (a table).

Code to handle this control message written in java is shown in table 1:
The message received by website will only be considered as control message if the conditions like starting with cMsg, contains sufficient parameters etc. are fulfilled. The java code in table1 will justify and set the isControl variable true finding all the satisfactions. Similarly, variables t, g and m hold the values for tablename, groupname and message to be sent respectively.
The website catering the code must fulfill the condition of receiving and storing the SMS messages.

IV. COST FACTOR AND BENEFITS

Cost of communication is never negligible even if single SMS is required to be sent from one cell phone to another. Here I discussed about receiving SMS through a website and sending SMS to cell phones based on the above said criteria. Therefore it is required to calculate the cost for the system in order to verify the expensiveness of the system with other existing systems for the same communication.
This system can be easily embedded into the existing website offering to web SMS otherwise the cost of designing a fresh website and buying an API to send SMS through the website, will also be included in the overall cost of the system. After surveying some of the websites providing the SMS API, I have generated a table, Table2, considering the requirement of 10000 SMSs per month for an organization.

```
if(msg.contains("cMsg:")) {
t = msg.substring((msg.lastIndexOf("-t")+2),(msg.indexOf(" ",msg.lastIndexOf("-t")+3))).trim();
g = msg.substring((msg.lastIndexOf("-g")+2),(msg.indexOf(" ",msg.lastIndexOf("-g")+3))).trim();
        m = msg.substring(msg.lastIndexOf("-m")+2).trim();
        isControl=true;
    }
```

Table1: Java Code to handle Control Message.

SMS Service Provider	SMS Pack (No. of SMS)	Cost Per SMS	Service Tax	Total Amount (in Rs.)	Validity
www.smscult.com	10000	0.11	0	1100	12 Months
www.fastalerts.in	10000	0.15	154	1654	Lifetime
www.smsjunction.com	10000	0.1	0	1000	Lifetime
www.mysmsmantra.com	10000+**10000**	0.14	144	1544	3 Years
www.bulksmsindia.com	10000	0.25	0	2500	Lifetime
www.way2sms.com	UNLIMITED FREE (Provides API to send SMS)				
www.fullonsms.com	UNLIMITED FREE (Provides API to send SMS)				
www.labs.ericsson.com	UNLIMITED FREE (Provides API to send SMS)				
www.sendfreesms.com	UNLIMITED FREE (Provides API to send SMS)				

Table2: Cost of sending SMS through web

If we opt for the options same that of last four type then the cost will be negligible for sending SMS through website. The analysis of cost is based upon Indian currency that can be converted to required output. The restrictions imposed by countries' telecom regulatory are not considered here. The benefits also include the data base to be indirectly available online centrally to every administrator, authorized to send control message from his/her mobile phone. So, he needs not to save all the contact information of campus wide personnel to cell phone.

V. CONCLUSIONS

The developed solution accomplishes the objective of controlling a website to send SMS through a control SMS sent from mobile phone. As the third party SMS gateway is required for this application so the efficiency not only depends upon how fast web application processes the command sent through mobile phone or cell phone but also depends upon the services provided by the gateway.

Discussing about applications of the research project an authorized user can announce any new information university or organization wide, even if he/she on the go and only having a cell phone (even without compatible with service like GPRS or any other mean to connect with the Internet). This may affect many areas of daily organization working e.g. placement and library related activities of a university. For example, I being a placement coordinator, if authorized, can easily update the latest information to registered students' mobile phones for forthcoming placement drives at campus, collected during a go. This would be done even if I don't have access to GPRS for whatever the reason. Similarly, an agriculture officer can broadcast information about any updation or discrepancy regarding any climate, crop or land to the registered farmers without wasting time to connect to the Internet wherever site you are. This type of solution brings an important contribution for managing aspects without even being in the organization. However it still has potential for other applications in industry and services requiring a moderate debit of message transactions.

I have implemented code to control website to send SMS using a control SMS, the commands can be increased, their parameters can be increased on different requirement attributes and also websites in near future can be designed to have predefined templates of content of emails, changing themes, updating status of social network etc using the same idea of control SMS. Further to create an independent content delivery application, short messaging server can be set up in an organization. That would add an advantage with the privacy of content to be received and transferred. Its detail is provided in the research reference no. 3 (a research paper on the development of ….. school usage).

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