A Review on Efficient Paperless Billing System in Small and Medium Scale Businesses

Rohit Shahu¹, Ameya Acharya², Mona Mulchandani³

¹Department of Computer science & Engineering, Jhulelal Institute Of Technology, Nagpur, India
Email: rohitshahu94@gmail.com
²Department of Computer science & Engineering, Jhulelal Institute Of Technology, Nagpur, India
Email: ameyaacharya12@gmail.com
³Department of Computer science & Engineering, Jhulelal Institute Of Technology, Nagpur, India
Email: mona_mulchandani@yahoo.co.in

Abstract— Paperless billing system offers organizations and businesses several benefits including increased work competence, productivity, and information security. However, there are various organizations, particularly small-scale businesses, which are still functioning under a paper centred milieu. For those businesses, paperless system results in could mean heavily reduced work and overall cost cutting. This document comprises of all the related work (advanced and current work related to this field) and explains the working of the process.

Keywords—digitization, digital invoice, e- Businesses, Paperless billing, web application.

I. INTRODUCTION

Paper-based billing involves the maintenance of physical documents, photocopying them, archiving them, and retrieving them from previously documented folders. Paper based processes are not proficient, it requires ample memory space, and encounter a lot of security threats. Businesses that use papered billing also face security risks due to the loss, damage or misfiling of papered documents. With the growing phase of technology, most of the businesses and organizations have put their best foot forward towards electronic filing and billing to save space and avoid security threats.

Retrieval of documents stored digitally is easy and fast. The proposed prototype of billing system will be paper free for any kind of use to assure that not even a single dice of paper will be used in the whole procedure of billing. The era of computing and digitization has emphasis on how to make things easy with the help of computers. The proposed prototype of web application focuses exactly on the same point.

In the present day, most of the transactions of billing like ticket booking, shopping, mobile recharge etc are all done online. However the local retailers are still doing the same old work of papered billing. Hence, keeping in mind the extended work load of local retailers, we have introduced a prototypical solution to the billing system where with the help of an easy working web application, storage and retrieval of transactions, maintenance customer records can be done. The agenda of this paper is to identify the literature that explains the motive of the paper-free billing environment by focusing on best practices in implementation of a paperless system.

Small scale businesses are targeted in the initial phase of our implantation. Furthermore, as our initiative is accepted we are to be focusing on expansion on a greater scale.

II. LITERATURE SURVEY

Paper-based billing procedure includes the handling of papered documents, photocopying them, archiving them, and retrieving the physical documents from a file. Paper based processes are inefficient, cost valuable office space, and pose security threat.

The models provided for e-billing (totally paperless) are for the sake of online web applications viz. Bookmyshow, Ola, and Uber cab services and IRCTC (e-ticket reservation) are restricted for businesses that provide online services. This should not be a limited environment when it comes to paperless billing.

The web application used by the organisations mentioned above cannot be possibly implemented in local areas for small scale businesses. Although conceptually they might resemble with our concept, but when it comes to managing the shop with introducing e-billing to it those web application won’t be of any use. We’d have to reconsider all the possible alterations and additions by keeping local ventures in mind.

When it comes to local ventures the issue is not only about managing the shop overall but also maintaining the whole record of bill, taxes etc. For doing this we have to maintain a directory which will, recollect data as required. To overcome this, this web application has been introduced on the local scale. The basic motto is to
provide this facility of digitization in the hands of medium scale businesses. By using this web application the owner of the business can manage his/her business and keep track of all the activities and also go through the whole billing procedure without using a single dime of paper.

Looking at the 2010 HDS, approximately merely 44 percent of First-Class emails received by households were bills. From 2002–2004, the number of bills sent over mail were relatively static. We can then see the increment in 2005 and 2006, followed by a fall that began in 2007 and continued till date.

Taking a step further, e-billing is proposing an automatic e-bill introductory period. Because the e-bill experience is unique for each consumer, we believe that forcing the customer to try and use the e-bill shall provide the time necessary for the customer to experience paperless bill, get used to it and, finally eliminate the papered billing process.

III. EXISTING DESIGN

Existing designs in bill generating process is basically an integration of hardware and web application. The web application is used for entering the details and creating the format of the bill whereas, the machine (hardware) is used for the printing of the receipt. This is the basic and most commonly used type of billing method used in almost all big scale organisation/businesses.

Now let’s take a look at the current and future state of each. Each year, the U.S. Postal Service conducts a Household Diary Study (HDS), which surveys over 5,200 households to provide a comprehensive and continuous description of the mail sent and received by U.S. households. One type of mail they measure is “Transactions Mail,” which includes bills, statements, payments, donations, rebates and orders. In 2010 transactions sent and received comprise almost 26 percent of all household mail volumes and 61 percent of household First-Class Mail. For purposes of this white paper, we will be looking at the number of bills and statements received.

Based on the 2010 HDS, approximately about 44 percent of First-Class Mail received by households was bills and statements. From 2002 – 2004, the number of bills delivered by mail was relatively steady. We then see an increase in 2005 and 2006, followed by a decline that began in 2007 and continues today.

Going one step further, e-billing is proposing an automatic, or forced, e-bill introductory period. Because the e-bill experience is unique for each consumer, we believe that automatically “forcing” the customer to try e-bill will provide the time necessary for the customer to experience e-bill, get hooked and, ultimately shut off the paper bill.

IV. METHODOLOGY

As per discussed above, the design which everybody is using for bill generation, is an integrated web application which costs more not even user friendly and if one of them (web application/hardware) fails, the whole procedure is stopped.

To overcome this, this paper introduces a paperless billing system. This method does not need any integration with any kind of hardware. This is standaloneweb application which can perform the task of hardware end too. This will generate a receipt in the form of an image. This image will be forwarded to the customer in the form of email.

Studies reveal that the number of Smartphone users hiked up by a great percentage in last 4-5 years. Thus people have an access to internet services on just one touch. The following pie chart and bar graph will demonstrate the usage of internet on daily basis:

i.E-mail-

If the concerned individual has an email id, the owner can mail the bill link to the email-id of customer when the customer open that link inside there is copy of bill, which will be non editable. Since there is not any issue of storage space on Gmail, the bill can be stored there on permanent basis. So even if the particular individual deletes the WhatsApp image, he/she will have the image of that bill on mail.

Thus, only the customer’s name, phone number and email-id will be the information that is maintained with the bill, stored in the customer’s database.

Advantages-

- E-receipts are often promoted as a way to save paper, and that’s certainly true. They’re also convenient—easy to file and to find if you want to return an item, make a warranty claim or need a receipt for tax or business purposes.
- Digital receipts also provide retailers with “deeper insight into consumer shopping habits, which can
lead to more targeted advertising mailers, promotions, and emails

V. PROPOSED SYSTEM

VI. WORKING

A brief explanation about the working of proposed system via different modules is stated in following points:

1. Admin login-
Considering data security in mind the web application has an admin login page. This page will appear as soon as anyone attempts to access the web application. This page contains 2 fields-
   a) Username
   b) Password.
Instead of entering the username and password again and again, we are providing an option called “remember me”. With this feature the owner will not have to type login details again and again. By providing admin login page, data security is also ensured. No other person can peep into the data. A separate database is created to store the login details.

2. Home-
Once the admin login is done, the user will be directed to home page. The home page will contain “generate bill” option. User will generate a new bill whenever any new transaction is to be made. In the bill, user will manually enter the products, quantity of each product, its rate and ultimately the total payable amount. To keep an appropriate record of transactions, a “bill number” is assigned to every bill along with date and time. A separate database for all the bills is created and maintained, where a copy of bill will be stored. The bill format is having a “cust.name” field which is entered by owner. The customer details will be stored in separate customer database.

3. Bill history-
This platform provides bill section. In this section shopkeeper can see a current day bill and previous bill data also. In case shopkeeper wants to search a previous bill then he can easily search a bill on “bill search bar”. In case, a customer cannot be able to access the bill then customer can tell his or her name to shopkeeper to access the bill.

Bill history section also contains the total sell of current day. As the bill generated the total amount of the bill automatically added to the grand total. At the end of the day shopkeeper will get the total sell. Bill history is also very useful when it comes to exchange policy. Just in case a customer wants to exchange the product due to some sort of problem, then the owner can simply search the respective customer’s bill by searching either the bill number or by customer name, in the databases.

4. Our Customer-
In this section shopkeeper can store list of customer data. Whereas, this section will contain customer name, email id and mobile number which can store the list of customer information in shopkeeper data. Whenever any customer visits the shop again, there will not be any need to re-enter the data. It will be a onetime entry only at first visit. Later on the owner will simply search the customer mobile number in the customer database and ultimately all the previously stored details will appear automatically, thus making it convenient.

5. Customer info-
In this section shopkeeper can store customer data. Whereas this section contains customer name, email id and mobile number which can store the list of customer information in shopkeeper data. For future shopping if the customer is previously visited to the shop then he/she do not have to give their information again. The information is automatically retrieved from the shopkeeper database.

VII. FUTURE SCOPE

1. Invoice via image and text message-
It’s quite clear that most of the people have access to WhatsApp. Keeping that in mind, the web application has the option to send the invoice via a WhatsApp message as an image. Even though there are a lot of Smartphone users, there still are some people who don’t have smartphone so keeping such people in picture, we have our 3rd option of delivering the bill via Text message. These two methods of sending an invoice are keep for future scope.
2. Payment methods-
Large scale organizations/companies like Amazon, freecharge, bookmyshow make their payment methods by credit cards, debit cards or by cash. This project, as said, is customized as per the shop owner’s requirements. And hence the payment method right now is by cash only. However, by keeping future expansions and increase in sale in mind, we can make card payment as an option also in future. Currently, Ola cabs, Jugnoo autos and Uber use Paytm money as payment option. This is a very convenient option in case the customer has less/no money in his/her wallet. Paytm can come in very handy at such times. This concept can be improvised in our project in future and make such kind of payment possible.

VIII. CONCLUSION
Western countries have already started adopting this concept. In the 19th national conference on E-governance a Denmark delegate explained how European countries are dealing with paperless processes. An estimated value of about 300 million Euros is saved on average only by eliminating the use of paper. In the United States of America, USD 450 million dollars are saved throughout the year because of the whole process of e-billing. Yes it takes some time for accepting this e-billing concept across the entire country, but in the long run it is highly profitable, cost saving and environmentally encouraging project.

All it needs is proactive approach from the government to implement it nationwide and an acceptance from local shopkeepers to adopt this system. In conclusion, thanks to inexpensive, secure, and easy to use systems, many legal departments are reaping the benefits of e-billing systems. Careful and thoughtful evaluation will ensure that the investment in an e-billing system will provide ongoing dividends in the form of time savings and reduced spending.

REFERENCES
[10] Sumanjeet Singh,” Emergence of Payment Systems In