CHAPTER 5

ENHANCEMENT IN RECURRING PAYMENT & FLEXI

RECURRING PAYMENT

5.1 INTRODUCTION

Recurring Payment is an integral part of the OPPS. The proposed system here will help to schedule the recurring payment in a much smarter way. Here we assume that the vendors for whom the subscription service is allowed will be registered with the payment processing system we are describing here and are in agreement with getting paid through this unified service provided by payment processing system either directly or through some merchants.

5.2 RECURRING PAYMENT

Recurring Payment is one of the essential features of any OPPS which allows users to schedule the payment of bills of fixed amount in a particular set frequency. Usually people who need to subscribe to a particular service or to pay a fixed amount once in a month or fixed frequency will prefer to schedule the payment so that payment will be credited to the vendor without any manual intervention unless the subscriber stops or specifies only for a certain period of time. This automatic scheduling frees the user from worries.

5.2.1 Options Available in Existing Recurring Payment Feature

The existing online systems or electronic payment systems allow the payment to be scheduled for payment to a single bill and the amount that will be paid is fixed. The schedule can be fixed for a period, say 6 months or for a year and so on. At the scheduled interval till the period ends, a fixed amount will be debited from the subscriber bank or credit card account and will be credited to the vendor’s bank account. For example the user can schedule monthly payment for an online magazine subscription which can be a fixed amount say, Rs.500 a month and can schedule recurring payment for a year. The payment mode can be by credit card or debit card or through online bank account or by any other options available. The subscription can be cancelled at any point of time in the middle before the tenure ends. The transaction will happen on a specified date of every month (scheduled frequency).
Here the tasks like subscription of magazine and amount to be paid by recurring mode are fixed and cannot be altered in the traditional recurring payment systems. Refer figure 5.1 & figure 5.2 for more details.

Fig 5.1: Traditional Recurring Payment Feature
Fig 5.2 Features of existing Recurring Payment Processing System
5.2.2 Proposed Features to Existing Recurring Payment Option

Fig 5.3: Features of proposed (Flexi) Recurring Payment Processing System
The new system will help in making the Recurring payments in more efficient and flexible ways. The proposed system will allow Recurring payment to happen by providing option for the users to schedule either a fixed amount or a variable amount (based on the bills generated) and at the same time controlling the variable amount by allowing the user to set a minimum and maximum amount that can act as a guideline for the variable amount. This ensures that even though flexibility is given on the amount to be paid in recurring mode, the user can exercise control over the amount range which he authorizes for payment. With these options, the user is free from worries of missing a payment deadline of his important utility services and at the same time has enough intelligence to decide on the amount to be paid. Refer figure 5.3 showing the proposed system

Let us see the scenarios to which the proposed feature will be helpful which will otherwise be not possible with the traditional existing Recurring payment options. A user can schedule a telephone bill and can either opt to pay the fixed amount each month or can allow the amount to be paid for the bill generated in each month. The user also has option to select a biller or merchant to whom he wants to pay one or multiple bills for a particular period. Suppose the user wants to pay electricity bill, telephone bill, water tax, etc to government and here the amount can vary each month for each item mentioned. With the proposed system, the user need not worry about missing a payment and also need not worry about the nature of variable amount of bill each month. He can schedule the payment of all the bills to be paid from the merchant to a defined period and can make online payment automatically. Refer figure 5.4 given below.
Fig 5.4: Proposed Recurring Payment Feature (Flexi-Recurring Payment)

Table 5.1 Comparison between Existing Recurring Payment feature and Proposed Recurring Payment feature (Flexi-Recurring Payment) in OPPS

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>OPPS using existing Recurring Payment feature</th>
<th>Proposed Recurring Payment feature in OPPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Allows fixed amount to be paid automatically for a particular period.</td>
<td>Allows either fixed or variable amount to be paid automatically for a particular period.</td>
</tr>
<tr>
<td>2</td>
<td>Only one bill can be scheduled for recurring payment from a vendor in the existing systems.</td>
<td>Proposed solution will allow multiple bills of a vendor to be scheduled for recurring payment.</td>
</tr>
</tbody>
</table>

5.2.3 Screenshots Depicting Proposed Recurring Payment Feature (Flexi-Recurring Payment)

Given below the screenshots which will depict the various steps involved in implementing the proposed Recurring Payment feature. The sequence of the screenshots and comment below each screenshot will help to understand the new
system very clearly. Here we have taken bills from a vendor Jack Profile. Here one bill is paid using credit card for illustration purpose.

Refer figure 5.5A: The screenshot shows the list of Merchants and bills available for scheduling.

![List of invoices that can be selected and payment can be scheduled](image)

Refer figure 5.5B: This screenshot shows the various options available for scheduling a recurring payment. Here we select Credit card payment mode to pay bill CS101119-2 with recurring payment mode.

![Recurring Payment schedule entry screen](image)

Refer figure 5.6: This screenshot helps to select various payment modes to make payment. Here credit card is selected as payment option.
choose your method of payment

- Credit Card
- Debit Card

Continue  Back

Fig 5.6: Various payment methods available for selection

Refer figure 5.7: Through this screenshot, user credit card details are captured so that Recurring payment can be scheduled.

Credit Card Information

Refer figure 5.8: This recurring payment scheduler screenshot shows the fixed and variable payment feature available for selection.
Refer figure 5.9: This Recurring payment scheduler screenshot shows the various options available for the recurring frequency schedule.

Fig 5.9: Various payment frequency options available for Recurring Payment
Refer figure 5.10: Through this screenshot, the user reviews the various options selected and confirms them for further processing.

### Schedule Verification

Customer Biller Account: sujay
- Payment Account: Credit Card-XXXX-3453
- Payment Option: Variable
- Payment Amount: $300.00
- Payment Frequency: Monthly (on 1 of a month - No. of Payments: 12)
- Scheduled Start Date: 1/4/2013
- First Payment Date: 2/1/2013
- End Date: 1/1/2014

I Agree [Terms and Conditions]

[Schedule payment] [Cancel] [Back]

Fig 5.10: Confirmation screen after the Recurring Payment Schedule is made

Refer figure 5.11: Shows the list of Recurring payment scheduled with payment mode, frequency, scheduled date and amount with other details.

### Scheduled Payment

<table>
<thead>
<tr>
<th>Payment Type/Method</th>
<th>Amount</th>
<th>Frequency</th>
<th>Next Payment Date</th>
<th>Last Payment Date</th>
<th>End Date</th>
<th>Status</th>
<th>Schedule ID</th>
<th>Payment Type</th>
<th>View</th>
<th>Edit</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Card-XXXX-3453</td>
<td>$300.00</td>
<td>Daily</td>
<td>1/4/2013 12:00 AM</td>
<td>1/5/2013 12:00 AM</td>
<td>Active</td>
<td>727889</td>
<td>Recurring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit Card-XXXX-3453</td>
<td>$300.00</td>
<td>Monthly</td>
<td>2/1/2013 12:00 AM</td>
<td>1/1/2014 12:00 AM</td>
<td>Active</td>
<td>727890</td>
<td>Recurring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Add Schedule [Back]

Fig 5.11: After the variable Recurring Payment is scheduled

Refer figure 5.12: Shows the list of scheduled payments and their status. Active status indicates that the schedule is still active. Inactive indicates that the schedule is completed and the Cancel status indicates that the schedule is cancelled by the user.
Fig 5.12: Recurring Payment Schedule report which displays all scheduled recurring payments with status and mode of payment opted

Refer figure 5.13: Shows the details of process after the EOD (End of the Day) process is run. Once EOD is run, settlement will happen and payment will be debited from the user account and credited to Merchant account after the settlement time.

Fig 5.13: Daily Payment Detail Report ➔ Shows the Payment details after the settlement which happens when EOD process is run
5.3 ENHANCEMENT TO FLEXI RECURRING PAYMENT

Fig 5.14: Features of proposed (Flexi) Recurring Payment Processing System
As we have seen, we have the normal existing Recurring payment option by which a payment to a single bill can be scheduled to be paid automatically for a particular duration in a defined frequency.

With the Flexi Recurring Payment option, payment can be scheduled as mentioned above with more features like making the system intelligent enough to ascertain the actual bill amount and making payment even though the scheduled amount may vary with actual bill amount by specifying the upper and lower limit for variance of bill amount so that this will be a well controlled and smart payment schedule.

In our proposed system, we are going to add more enhanced features to the Flexi- Recurring payment [48] by incorporating the Enhanced Multiple Payment feature [50] which are defined above in previous chapter. Enhanced Multiple payments here use the service of enhanced Split Tender Payment [49].

With this added feature, a user can select one or more bills, can select one or more payment options and can schedule a payment so that s/he need not worry about missing any important bills or deadlines or about the limit of payment he has in his single credit or debit card or bank account. This proposed system will ease tracking as compared to doing individual schedules for each bill and tracking each and every scheduled bill.

Consider a scenario of a user. The user needs to pay some heavy mortgage amount for 2 years – say Rs.50000 per month. He also needs to pay his electricity Bill of Rs.5000 per month on an average (this bill amount may vary each month), pay telephone bill of Rs.10000 per month on an average (this telephone bill amount also may vary each month) etc. Now assume that s/he has a bank account, credit card. To pay the above amount each month, s/he needs to use both Bank account and credit card. In normal circumstances, the user may have to schedule payment of each bill by selecting the bill and specifying the method of payment to be used and also a fixed amount. He has to schedule each one separately and also specify one fixed amount and if the bill amount varies, then the user has to track it, make the difference in payment if the bill amount is high or will be ending up paying more for the bill if the amount is lesser.
**Table 5.2 Comparison between Flexi-Recurring Payment feature and proposed enhancement in Flexi-Recurring Payment feature in OPPS**

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>OPPS using Flexi - Recurring Payment feature</th>
<th>Proposed enhancement in Flexi - Recurring Payment feature in OPPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Only one Payment option like Credit Card or Debit Card or any other payment option can be used to schedule Recurring payment</td>
<td>Proposed solution will allow multiple payment options to be used in tandem for a recurring payment schedule. For example, Rs.10000 can be scheduled as Rs.5000 from Credit card and Rs.5000 from Internet account.</td>
</tr>
</tbody>
</table>

With the enhanced Flexi-Recurring payment, the user just needs to select all the above three or more bills, select one or more payment modes like bank, credit card, etc, specify the amount to be paid through each payment mode, specify the higher and lower limit of payment allowed apart from the fixed amount specified so that the variation of bill amount will be taken care of and the user need not worry about this. The beauty is, this system will also allow a single huge payment schedule being tendered through more than one payment mode using the Split Tender Payment option available in the Multiple Payment feature.
5.4 CONCLUSION

The current Recurring Payment systems use only single bill to be scheduled for payment one time or “n” times or till particular period. Here we proposed Flexi-Recurring Payment system that gives flexibility of scheduling payment of single or multiple bills simultaneously. Another enhanced version of Flexi-Recurring Payment system [47] is also proposed here which enriches the Flexi-Recurring system by providing options of scheduling payment using multiple payment modes in addition to selecting multiple bills.