IVRS Based Bill Payment System: Tele–Bhuktan

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ABSTRACT

Rapid change in technology brings obsolescence. The solution that seemed the only hope the other day becomes redundant the next day. This can only be surmounted by constant innovation and up-gradation. Agonising wait in the queues to make payments of the utilities is omnipresent. E- payments of utilities have heralded the new era, whereby it eased the problem of queuing up before the payment centers saving time and money. However, it remained limited to those 'halves' who can afford a computer with Internet connectivity. Omnipresence of phone (mobile and landline) with a number of users in country affords the opportunity to bridge this digital divide. Any service that if deployed using phones will be easy to use and will be class insensitive. IVRS based system, a recent improvement in telecommunication and information technology allows information contained on a computer to be accessed by users through the telephone network. So far its use has been limited to providing the pre-fed information, but we have gone a step ahead and deployed this system in Jabalpur district of Madhya Pradesh for the payment of utility bills. This system is now in operation for past one and half year having more than 1500 customer base.

Keywords: Tele Bhuktan, IVRS, Bill payments

1. Introduction

In India paying the bills for the utilities has never been an enriching experience. Hours are wasted either in traveling to the payment centers or standing in the queues waiting for the turn. The task becomes onerous in rains and in summer when we as consumers have to brave the downpour or the scorching sun. Yet this is not the end of the travail as the lunch hours and tea breaks of counter clerks leave a bad taste. You are left wondering as if you have committed some crime of getting the facilities. Not only this, one has to abide by the timings of the payment centers of the respective organizations. For working class it makes things all the more difficult as most of the bill payment centres operate during working hours. Multiplicity of service providers further complicates the matter for the citizen. In addition to it organizations devote hours in receiving, maintaining and updating the data base of paid up bills and the unpaid ones. There are about 1,30,000 consumers of MPSEB, about 1,20,000 customers of BSNL and about 1,00,000 citizens paying property tax to the Municipal Corporation in Jabalpur alone. These payments have to be paid in different periodicities, some require monthly payments, while the others have to be paid on yearly basis.

2. Need of the System

The problem of Bill Payments has been realized countrywide and various organizations have come up with different solutions. Solutions attempted ranged from traditional methods of either sending the peons from

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offices, giving it to roadside service agents, who charge a commission in making the deposits, to state of the art inventions like Electronic Clearing System (ECS) which has its presence only in limited towns. Solutions like e-payment facility are being offered by banks and other organizations using credit / debit cards, however they have a major drawback that the person who wants to use this payment mode need to have a computer system along with access to internet and the requisite expertise to handle the payment procedure on the internet. The number of internet users in the country is only 70million, where as the number of telephone and cell-phone users is about 380 millions which is about six times more than the internet users. Hence need was felt to have a class insensitive, hassle free and cost effective system to facilitate the payments using landline or mobile phones to a larger number of citizens Consumer should have the flexibility of making payments anytime and from anywhere. This not only will improve the better tax compliance but also will help in better documentation.

3. Project Concept

"Technology for the masses" is the constant endeavor and commitment of the government. The major challenge is to provide a citizen centric solution by providing hassle free, easy to use, round the clock services at the fingertips of consumers. Technology should not only have to be proven and easy to maintain, but also be low on initial cost. Recent applications of IVR system include services like 'Phonograms'1 for doing telegrams through telephones, mobile services2, Railway enquiry3, tele-banking4 but none has so far allowed actual transaction of money. In Jabalpur a district in M.P. IVR system is deployed to help pay the utility bills by 'direct debit' from customers account. All that a consumer has to do is to call the IVRS Server using a telephone or a cell phone and follow the steps to complete the transaction. Since the IVRS would be operational 24 hours 365 days and can be accessed from any location with in the country, this would obviate the need for issuing and handling paper instruments like cheques or standing in the queues thereby reducing the misery of citizens.

4. Process of Implementation

Once the concept was finalized, its technical feasibility and financial viability was to be verified. We conducted the survey for the consumers concerns and elicited their suggestions. Market research was done to evaluate the market segment to target our basket of services. This facilitated us in zeroing in on the type and the quality of services. Limited technical prowess motivated us to outsource the development of the software. It is with lot of difficulty that the technical partner could be selected as either they are not sure about the concept and idea or else we were not sure about there technical capabilities. Development of software had to undergo several changes, before it could take its shape. But it has yet to undergo the test of banks and organizations. Since the beginning they were skeptical on the issues of security and the chances of discrepancies and complications due to failed or incorrect entries. There willingness to participate in the system in early days was almost absent as it-involved transaction of money. However, we could demonstrate them and could successfully put here fears to rest.

District administration is involved as it has devised the project and is imperative to lend the credibility to the project while ironing out the differences amongst the participating partners. The software is then presented before the participating organizations to incorporate their concerns and safety features. Once this is done to the satisfaction of all concerned, then the modalities of drafting of MOU is undertaken. The system was given the name 'Tele-Bhuktaan' which means payments through phone. A presentation was organized before the banks to explain the process of the transfer of funds from the accounts of the customer to the utilities account and State Bank of India accepted the offer. Initially the MPSEB, BSNL, Municipal Corporation etc were approached to join the system for getting their bills paid through this system.

5. Security Issues

Electric transactions are fraught with the danger of spoofing, hacking and other modes of unauthorised

money transfers. However, in this system independence with the use of Internet and computers eliminates the chances of cyber crimes. The Customer ID and passwords are internally mapped in such a fashion that it allows one-way transactions only i.e. from customers account to organization account. In no circumstances transactions from customers account to other then the organization is permitted, thereby safe guarding the interest of gullible customers. No other bills can be paid hence even if the CID and password is lost it cann't be misused.

6. Customer Registration

We have tried to reduce the hardships of the consumers by employing the chain of senior executives who visit households on the request of consumers to help them complete the registration formalities. We have also outsourced this to vendors on the commission basis so as to ensure the constant presence of representative. The procedure for customer registration would be as under Appendix-I Figure-1 and Figure 2

7. Coordination between different participants

District Administration is coordinating the entire project. A Tele-Bhuktaan Implementation Committee is formed with District Collector as the Chair-person and members from the participating Banks, Technical Partner, and one member each from the participating organisation. This Committee is responsible for the smooth implementation of the project. A Memorandum of Understanding has been signed amongst various participants, clearly describing the functions and responsibilities of the each participant and the Tele Bhuktaan Implementation Committee.

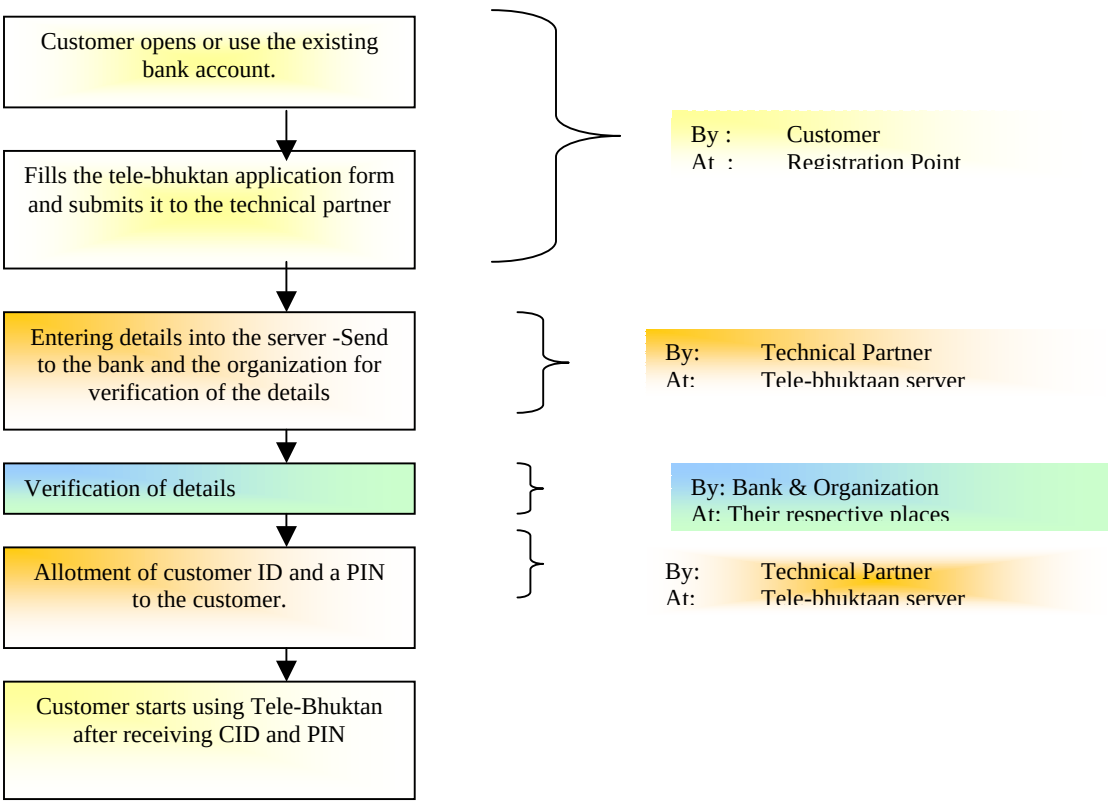

Figure 1: Procedure for Customer Registration

The Committee shall look into the following:

- Inclusion of any other participating Bank or the new organisation into the project.
- Shall organize regular meetings and review the progress of the project. It shall also look into the value-addition and improvement in the system as and when required.
- All disputes among the participating Bank, the organisation and the technical partner would be put before the Committee for resolution with consensus. In case of no consensus, the Collector, as Chairman, has the final authority in resolving such disputes.

Disqualification and termination of Customers: As the process of operation involved different partners at different stages it was imperative to spell out the role of different partners along with time limits.

Roles of the Technical Partner

- Maintenance of the Hardware, Software and the related technical infrastructure related to the IVRS System
- Design and Development of an appropriate IVRS System for the project
- Creation and Maintenance of the database and the sound files, its validation and verification.
- Technical partner should ensure timley backup and should also ensure 100 percent up-time of the system.
- The technical partner would be responsible for any loss of data resulting from the system failure or otherwise.
- Generation and transmission of the data file as per the requirements of the Bank. And incorporating the required changes after the successful funds-transfer report has been sent by the Bank.
- Generating and transmitting daily reports for the organization as per their requirements.
- Collection of billing data in soft copies and delivery of hard copies, if required, from the organizations.
- Responsible for establishment and maintenance (including payments of all bills) of all telephony infrastructures required for the system.

Roles of the Participating Bank

- The bank shall open accounts for new consumers or will extend the services to existing account holders.
- The bank shall maintain duly authenticated record of all payment debits/credits executed by it for a period for which bank records are usually required to be preserved under the applicable rules.
- The Bank shall also have to verify the customer's bank account numbers, signature of account holder, address of account holder and the names of the customers mentioned on the Tele Bhuktan forms which shall be forwarded to them for verification.
- The bank shall receive an encrypted text file (electronically) for the transactions on every evening by 4-00 PM. The Bank shall be responsible for getting the debits and the credits done to the corresponding accounts on the same day.
- The bank shall be responsible for verifying the account numbers and the amount for all the credits for every batch of transactions. It would be the responsibility of the bank to verify that the specified amount is credited only to the predefined account numbers of the organizations that would be provided to them by the organizations in advance.
- The bank shall also forward the successful processing report, clearly indicating the unsuccessful transactions, to the Tele Bhuktaan Server within one hour of receiving it. This report would be send electronically by the bank.

The bank shall also provide statements of account to the organization and customer as and when required.

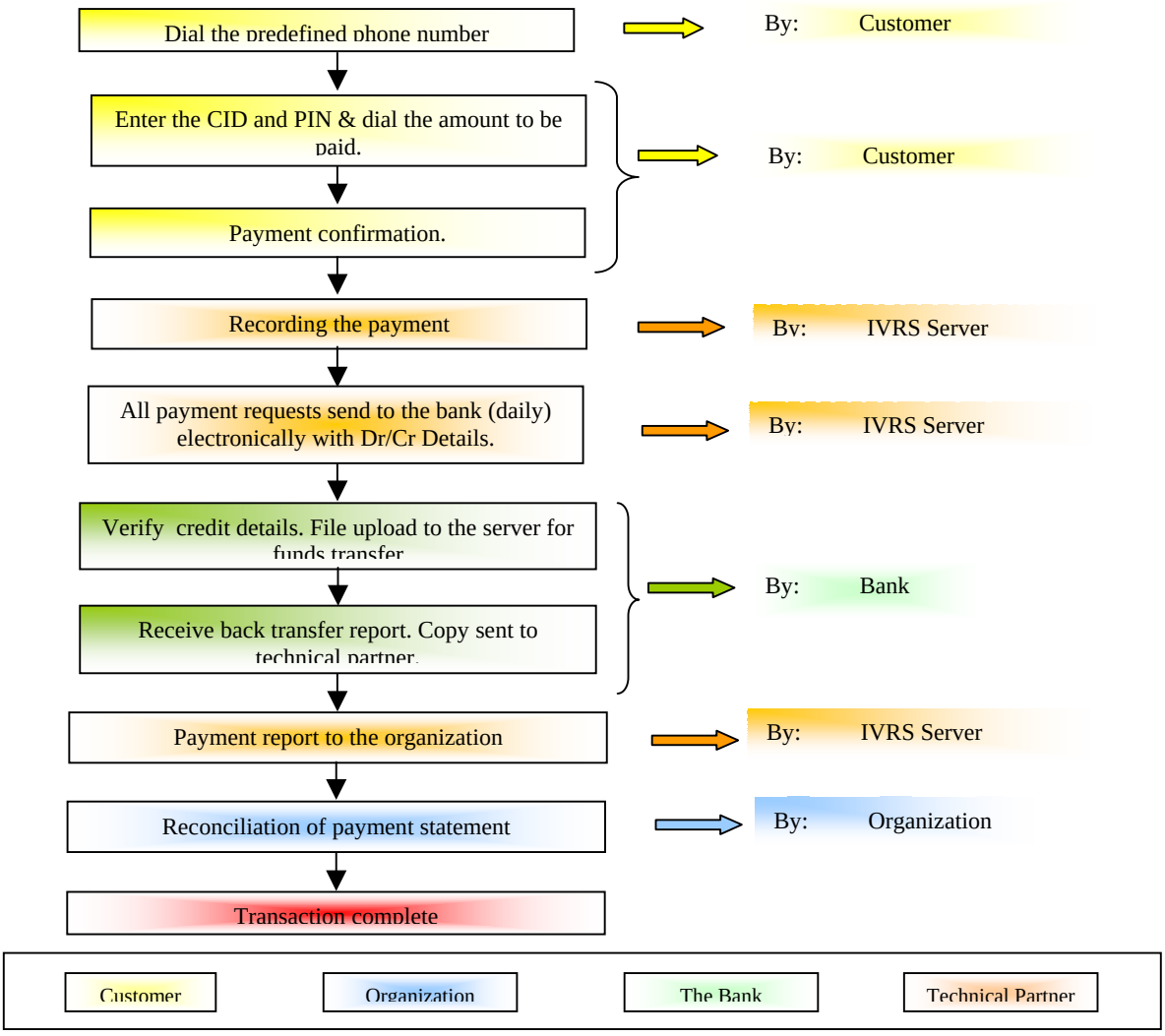

Figure 2: Procedure of Operation

Roles of the Organization

- The organisation shall give its requirements for transmitting the data from the Tele Bhuktaan server.
- The organisation shall be responsible for updating their respective data base and updating of the payment details at their end.
- Organization would verify the details provided by customer in registration form.
- Organization shall maintain and upload the payment details provided by the technical partner against the customer account on a regular basis but in no case later than the next payment cycle. No discontinuation of service should take place once the information regarding the payments is received on the pretext that they could not update it.

Roles of the Customer

- The customer shall fill in a Tele-bhuktaan application form, providing the details of his name, address, telephone no, mobile no., bank account no., etc. He shall request for either the opening of new account in any branch of SBI or else authorize bank to also operate his account for Tele bhuktaan services.
- This Agreement shall govern every payment instruction/request issued/called by the customer using the Tele Bhuktaan Service during the period of validity of the agree.
- Once the payment instruction has been confirmed by the customer on the IVRS in no way he can withdraw the instruction and the payment instruction shall be automatically forwarded to the bank for processing
- The customer shall ensure availability of funds in his account before making a payment using this system. In case of any insufficient funds the payment requested would not be successful and in such a case the customer will have to pay a penalty of Rs 50/- per such call made.
- The customer should check his bank account statement regularly specially for checking the clearance of his payments made using this system. In case of any discrepancy found he should report the same to bank and to the Tele Bhuktaan within 15 days after which the bank or the Tele Bhuktaan shall entertain no such requests.

8. Financial Viability

Public private partnership is the ideal mode for implementation of the project. It, on one hand allows technical partner to invest his money in developing software and procuring hardware, while on other hand strategic partnership allows government and corporations to extend the facility to its consumers. Consumer base of government services provides enough scope or sustainability of the system. Since the benefit accrues to the consumers in term of reduced hassles he/she also stands to gain.

But, in order to sustain the implementation and maintenance cost of the project and to have sufficient funds to enable value – addition into the project the following revenue model was worked out. The customer shall be charged a one-time registration charge of Rs 150/-. This registration shall be valid for a period of three years. The customer shall be charged a transaction fee of Rs 2/- per bill payment. He shall also be charged Rs 5/- by the bank as banking charges.

Table 1: Indicating Financial Viability

Initial Investment						
Computer System		1 No				50000
2 Nos Dia-Logic Cards		2 No @ 24000				48000
Installation of 8 No Telephone Lines for IVRS						8000
Technical Man-power involved in design and Development of the System						50000
Total						156000
Customer base 1 month after the launch is 500						
Income after six months				Expenditure during six months		
Registration Charges	@100	50000		Printing of Application Forms	500 @ 7/- each	3500
				Marketing Executives	500 @ 20/- per form	10000
				Ads in Electronic	45000 pm	45000

				Media		
				Expenditure for Customer Care	3000 pm	3000
				Maintenance of Telephone Lines of IVRS	4000 pm	4000
				Flexes, brochures, Pamphlets		60000
				Hoardings (2)	2 * 12000	24000
				Printing of a book for Circulation		25000
				Total		174500
Contributions from the Non -Technical Partners (SBI, Idea, Tata Indicomm) in promotion of the project						160000
					Nett Expenditure	14500
Profit after 1months deducting the Initial Expenditure			-120500			
Customer base during 2nd month after the launch is 500						
Income during 2nd months				Expenditure during 2nd months		
Registration Charges	@100	50000		Printing of Application Forms	500 @ 7/- each	3500
Call Charges	1000@2/-	2000		Marketing Executives	500 @ 20/- per form	10000
				Expenditure for Customer Care	3000 pm	3000
				Maintenance of Telephone Lines of IVRS	4000 pm	4000
				Hoardings (2)	2 * 12000	24000
Income after 2 months		102000		Expenditure after 2 months		215000
Profit after 2nd month			-113000			
Customer base during 3rd month after the launch is 1000						
Income during 3rd month				Expenditure during 3rd month		
Registration Charges	@150	150000		Printing of Application Forms	1000 @ 7/- each	7000
Call Charges	2000@2/-	4000		Marketing Executives	1000 @ 20/- per form	20000
				Expenditure for Customer Care	3000 pm	3000
				Maintenance of Telephone Lines of IVRS	4000 pm	4000
				Hoardings (2)	2 * 12000	24000
Income after 3rd month		256000		Expenditure after 3rd month		269000

Profit after 3rd month			-15000			
Customer base during 4th to 6th month after the launch is 3000						
Income during 4th to 6th month				Expenditure during 4th to 6th month		
Registration Charges	@150	450000		Printing of Application Forms	3000 @ 7/- each	21000
Call Charges	4000@2/-	8000		Marketing Executives	3000 @ 20/- per form	60000
				Expenditure for Customer Care	3000 pm	9000
				Maintenance of Telephone Lines of IVRS	4000 pm	12000
				Hoardings (2)	2 * 12000	72000
Income after 6 months		714000		Expenditure after 6 months		443000
Profit after 6th month and customer base 5000			271000			
Recurring Income and Expenditure after Six Months						
Recurring Income				Recurring Expenditure		
Call Charges for 5000 customers paying at least 2 bills @ 2/-		20000 per month		Expenditure for Customer Care	300 pm	3000 pm
Registration Charges @ 150/- for 250 customers per month		37500 pm		Maintenance of Telephone Lines of IVRS		4000 pm
				SMS Confirmation	0.30/- *10000	3000 pm
				Depreciation on Hardware	3% pm	3000 pm
Monthly Income		57500		Monthly Expenditure		13000
	Recurring Profit per month			44500		

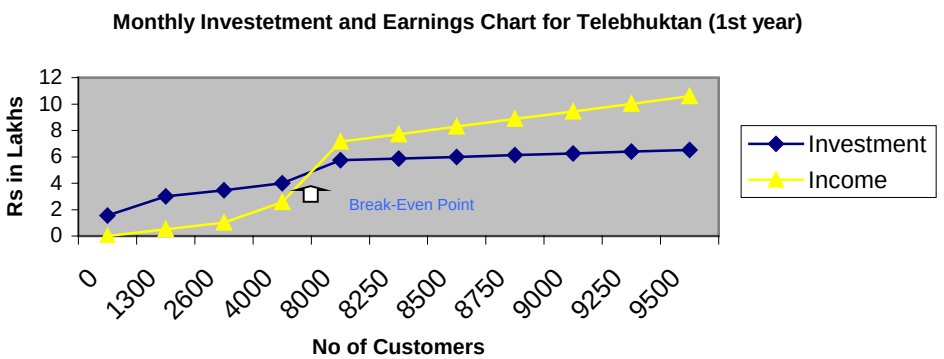

Figure 3: Monthly Investment and Earnings Chart for Telebhuktan (1st year)

The Table 1 indicates that after 6 months sufficient funds are generated to sustain the implementation and maintenance cost of the project and to have sufficient funds to enable value – addition. Moreover, the monthly profit is also attractive. Figure 3

9. Project Launch

Since the launch of the project on 30th June there are more than 500 customers who have registered for the service, while more than a thousand are in the various stages of verification. To spread the reach the technical partner has been advised to outsource the registration process of consumers by explaining the scheme. Massive information campaigns are being organized to ensure dissemination of information through pamphlets, banners & posters. We have also constituted a team of professionals to go to make the presentation of salient features of the scheme before the professional bodies of lawyers, doctors etc, whom we found the most receptive to this scheme due to their other engagements .We have also targeted those who are aged & unable to physically go to make these payments. As per the financial viability statement shown above the customer base after 14 months of its implementation should have reached 6500 whereas we have achieved a target of only 1500. The failure in attracting customers was mainly due due to the marketing incompetence of the private partner. The low awareness and aptitude of the people of the town to adopt new technology was also responsible for the low customer base achieved.

10. Future Perspective

Distances, congestion, travel costs and the time elapsed in submitting the payments at pay-counters, makes it an attractive proposition. We need to identify more and more services and more number of participating banks so as to facilitate maximum number of consumers. The project may be extended to enable bill payment by SMS for the customers having mobile phones. This facility will be started very soon.

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