



विद्यया ऽमृतं प्राप्नुयान्  
भा. प्र. सं. इन्दौर  
IIM INDORE

भारतीय प्रबंध संस्थान इंदौर  
Indian Institute of Management Indore

# The Blaze

## AI in the Micro Loan Industry



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- Graduated from BIT Mesra in 2020
- NTSE and KVPY Scholar
- Data Science and Entrepreneurship Enthusiast

# Micro-loan provision is a strategy to primarily retain customers and also to create an additional revenue stream

## Terms and Conditions

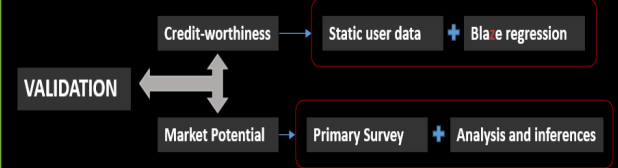
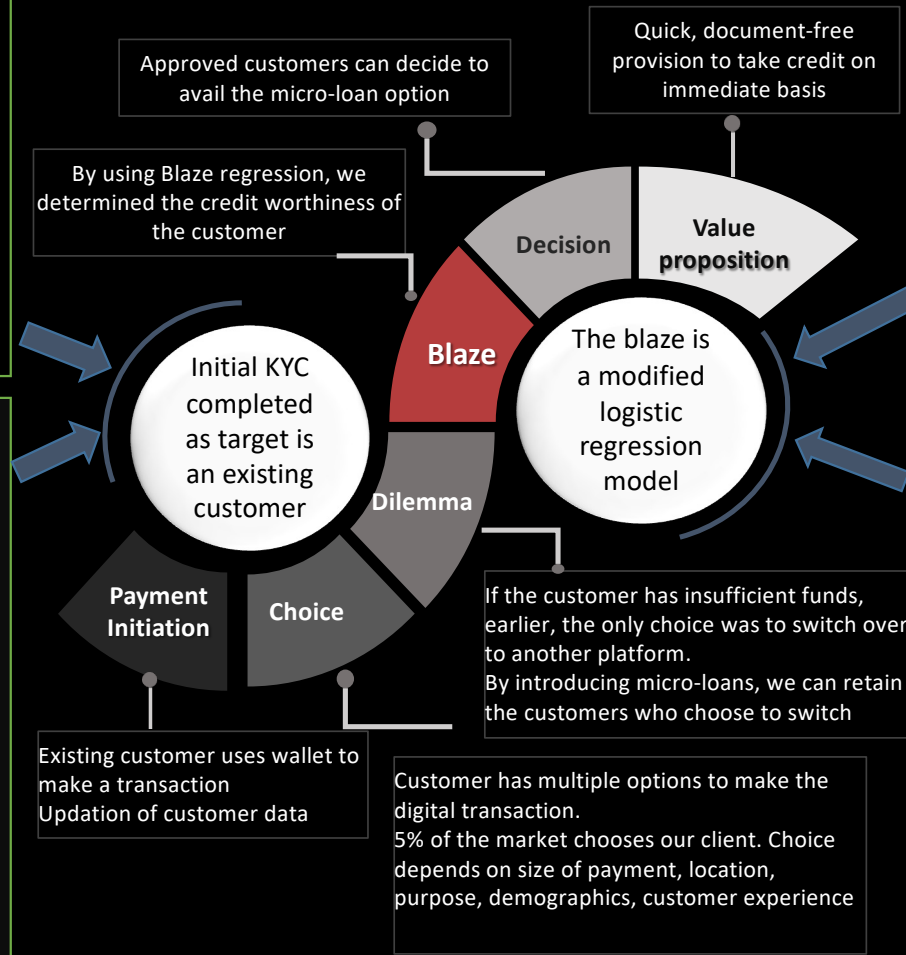
- 1 0% interest EMI till 14 days.
- 2 No additional documentation. KYC done while registering customer
- 3 Sign digital contract online to generate loan number
- 4 Maximum ticket size : INR 7,000  
Maximum credit limit : INR 21,000
- 5 Improve credit score and convertibility to EMI payment

## TICKET SIZE

- 15,000** Given ceiling price of ticket size
- 7,000** Revised ceiling price of ticket size
- 6,783** Average max transaction amount (AA column)

Since the average maximum transaction is INR 6,783, the loan required must be lesser than it. Giving loans on 0% EMI is better for lesser amounts. Hence, revising the ceiling price of ticket size to INR 7,000 is better than INR 15,000

## Flow of events explained



Relevant variables used to perform logistic regression analysis with modified manual and situational weightage assigned to each variable.

Coefficients of model with **72.1%** McFadden R squared value used to predict test data values with 82% accuracy.

Almost **15%** of the respondents experience shortage of funds in e-wallets and switch to other payment modes

**53%** of those respondents are willing to opt for a e-wallet app with a micro-loan (credit) lending service

$$\text{Total Addressable Market} = \frac{\text{Average Monthly Spend of Each customer} * 12 * \text{Lending Opportunity Factor of Segment}}{\text{Number of Customers in segment}}$$

**Total Addressable Market** 8.23 Billion USD

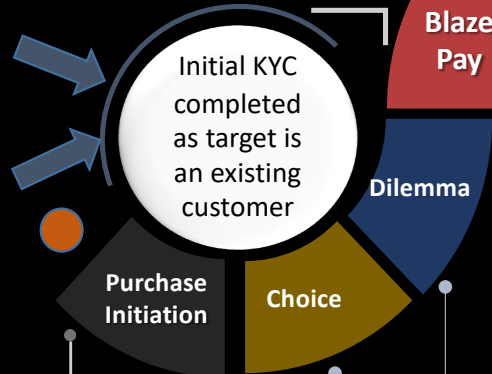
\*1 INR = 0.013 USD as of 10/12/2021 08:30 A.M.

Refer Appendices

# Micro-loan provision is a strategy to retain and satisfy an existing customer to profit from increased retention .

## OPERATIONAL IMPLEMENTATION

Blaze Regression Model runs on Incedo Lighthouse Platform and updates in real time with each wallet transaction made by each customer. It inputs bank and wallet statement data of customers



Initial KYC completed as target is an existing customer

- I. Bank adds micro loan amount to Customer Wallet on Client App
- II. Same amount debited from wallet and paid to Seller merchant
  - Merchant obligation settled
  - Customer will repay Bank via Client App

Blazepay initiates repayment from customer account to wallet to bank

Bank pays merchant & consumer will repay the bank

Blaze Model updates in Real Time

Auto Repayment Service Offered on 7<sup>th</sup>, 14<sup>th</sup> or 30<sup>th</sup> of NEXT MONTH, whichever comes last in the 30-day 0% interest period

T&C Sent via AI Chatbot to Customer over WhatsApp.  
Customer interaction starts

The blaze is a modified logistic regression model

Client App records bank obligation of customer. Blaze Pay records repayment due date. Auto Debit Service Offered

From website/PoS QR Code customer moves to Client App >> BlazePay Portal

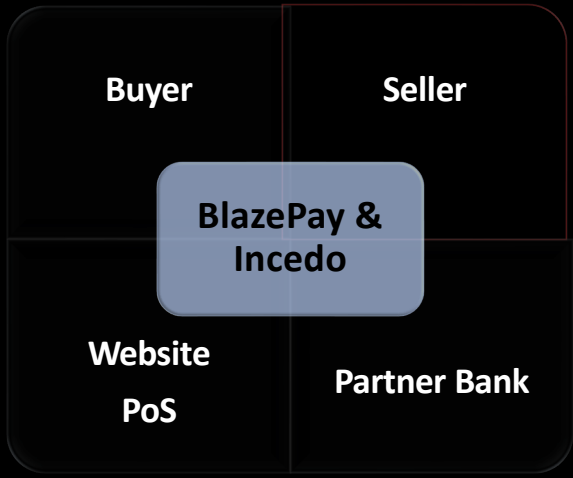
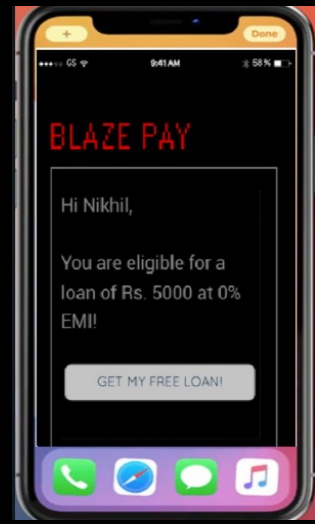
- Blaze Pay Portal via Encryption connects to Incedo Lighthouse
- Blaze Regression model calculates if customer is creditworthy or not
- Existing Incedo AT Tech leveraged to calculate Approved Loan Amount
- Maximum Loan Amount approved shown to customer along with Terms and Conditions
- Customer clicks "I Agree" and payment initiated. Bank server connection established

- If the customer has insufficient funds, earlier, the only choice was to switch over to another platform
- By introducing instant 0% 30 days micro-loans, we can retain the customers who used to switch earlier

Customer has multiple options to make that digital transaction :-

- 5% of the market chooses our client. Choice depends on payment size, purpose, demographics.
- Payment Options include UPI / Credit or Debit Card / Net Banking / CoD / BLAZE\_PAY
- BLAZE\_PAY Value Proposition :

- Existing customer makes a purchase at website/PoS:
- If at a shopping website : Gets Directed to the Payment Page
  - If at a PoS Shop : Customer scans QR code and pays via an app



Success metric is the retention of customers after implementation of Blaze (AI Incedo) Business Model



Strategic Partnership with leading Banks and NBFC for customer transactional data & history and extending micro-loans



Strategic Partnership with merchants in the target cities for marketing expansion and sponsoring incentivization activities

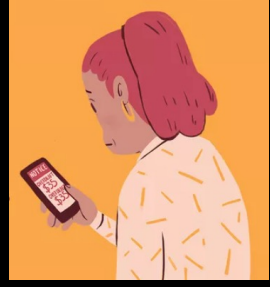


Integrating social media apps with Blaze AI Chatbot for operational advantage & Boosting Social Media influence.

Competitors	Key Offering	Type	Market share
Google Pay	UPI	Passive	34%
Paytm	Wallet + UPI	Passive	15%
PhonePe	Wallet + UPI	Passive	45%
Simpl	Cyclical credit services and no "Micro-loan" service	Active	Startup
Lazypay		Active	Startup
BLAZE ▲	Micro-Loan lending with an elaborate risk assessment and AI/ML leveraging		

Positioning

- Insufficient funds?
- Bank server down?
- Pay later at your convenience?
- Increase CIBIL Score?

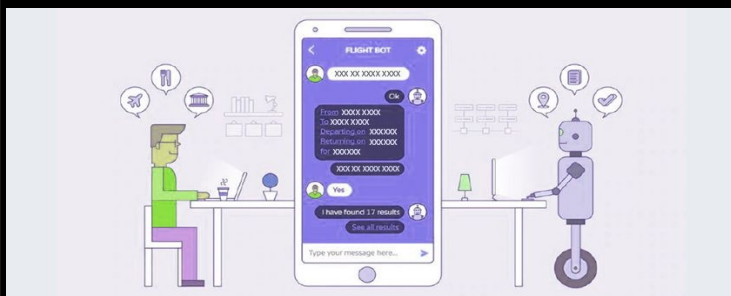


Why pay **NOW** from anywhere, when you can pay **LATER**?

**NO MONEY, NO WORRY**

Quick, 0% interest, document-free **micro-loan** lending solution for immediate needs.

AI Chatbot integrated with social media partner



**Problem :** Conventional terms and conditions documentation.



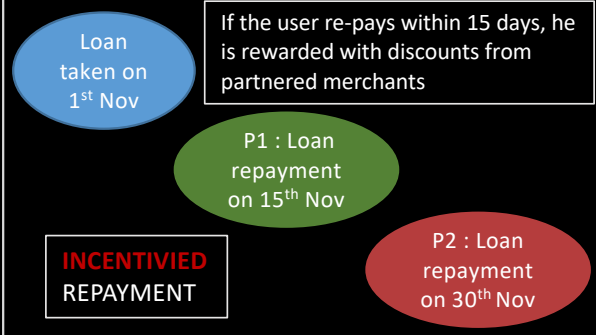
**Solution :** Interactive T&C on social messaging apps to increase transparency and allow users to pinpoint their queries.

Increased customer satisfaction and extracting information about the T&C with highest traffic and queries to improve AI formulated solutions

**Problem :** Loan repayment apps have a negative user perception which leads to reduced user screen time and user reach.

**Solution :** Strategic partnership with social messaging apps (WhatsApp business) to increase screen time and visibility during loan repayment. Convenience for users and greater marketing potential and reach for us.

**Problem :** Convenience fee **CANNOT** be levied on customer for our micro-loan service as it will cause users to shift to alternate mode of digital payments instead of acting as a revenue stream



Initially targeting Tier-1 cities as :  
 • Early adopters for innovative fin-tech solutions  
 • Higher frequency of digital transactions

## EXECUTION ROADMAP

### Long Term Growth Strategy

- Improve UX for a superior customer experience
- 100% availability of loan via wallet with low latency and response time

### Implementation Phase

- Improve model based on inputs received in the testing phase
- Push to increase the ticket size for existing users

### Testing Phase

0.5% of Active User Base

~1.6Lakh users

Increase adoption of BlazePay

	PHASE - 1: PREPARATION AND TESTING (UPTO 9 MONTHS)	PHASE - 2: MARKET IMPLEMENTATION (2 TO 4 YEARS)
KEY STAGES	<ul style="list-style-type: none"> <li>Develop a new model to accurately predict the creditworthiness of the customers</li> <li>Determine the current state of the loan applications - Identify gaps and issues in application and...</li> </ul>	<ul style="list-style-type: none"> <li>Review business and application strategies</li> <li>Gather application data via questionnaires, interviews, and documents</li> <li>Offer Real Time Data Analysis via Incedo Lighthouse.</li> </ul>
TESTING POPULATION ESTIMATE	<ul style="list-style-type: none"> <li>Estimated 2021 Client User Base : 32 Million users</li> <li>Sample for Initial Testing -0.5% : 1,60,000</li> <li>Initial sample will comprise of the Key Customer Segments expected to have higher adoption rates</li> <li>Key Customer Segments Include : (A) 25+ Age Demographic (B) Low-Medium Income Group (C) High Frequency of...</li> </ul>	<ul style="list-style-type: none"> <li>Offer Micro-Loans to targeted active wallet users</li> <li>Loan will be offered only to customers above the age of 18 years and having a Good CREDIT Score</li> <li>Estimated Target Population : 81% of 32 Million = 25.6 Million</li> </ul>

### Key Performance Indicators

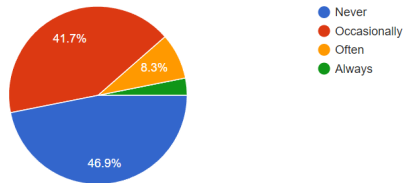
- Market share of the wallet in the digital transactions space
- Percentage of wallet transactions through [BlazePay](#)
- Average ticket size of loans
- Retention rate of Wallet's Users
- Percentage of Loan Defaulters

# APPENDIX

# Primary survey results

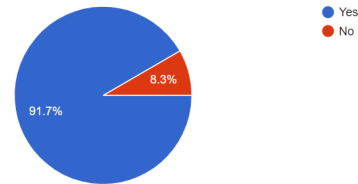
How frequently do you run out of money during a purchase/bill payment on any digital payment/wallet app ?

96 responses



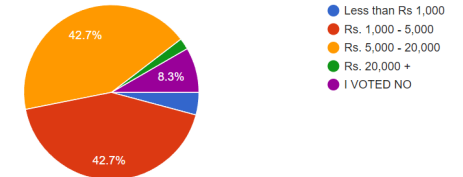
Are you a E-Wallet APP user (eg: Paytm, PhonePe, Mobikwik, JioPay, Apple Pay, Samsung Pay)?

96 responses



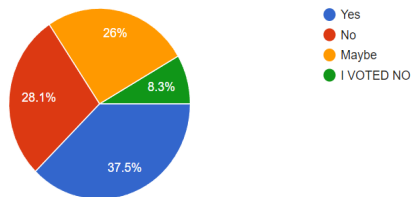
If yes , how much would you say you SPEND ( incl. shopping/bills payment etc.) on that app in a month?

96 responses



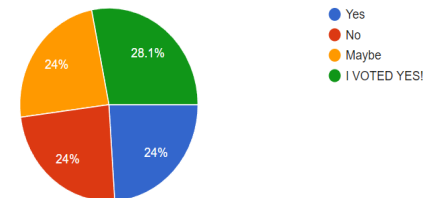
If YES, then would you LIKE TO HAVE a micro-loan system till Rs. 6,000 AT 0% interest till 30 days integrated with your wallet ? ( DETAILS ABOVE! )

96 responses



If NO, would you be interested to sign up in a E-Payments wallet that would provide micro-loan services at 0% interest for upto 30 days?

96 responses



The survey was conducted in IIM Indore, with age majorly between **21-25 years**.

Almost **15%** of the respondents experience shortage of funds in e-wallets and switch to other payment modes

**53%** of those respondents are willing to opt for a e-wallet app with a micro-loan (credit) lending service



# Blaze regression results

**Logistic Regression Statistics: Model 3 for high risk vs low risk 1 High risk 0 Low risk (1)**

R-squared (McFadden)	Adj.R-Sqr.	RMSE	Mean	# Fitted	ROC area
0.721	0.718	0.245	0.118	8000	0.94

The mean value of the residuals is not necessarily zero when there is no constant. In this model it is -0.002.

**Logistic Regression Coefficient Estimates: Model 3 for high risk vs low risk 1 High risk 0 L**

Variable	Coefficient	Std.Err.	z-statistic	P-value	Lower95%	Upper95%
Automatic_payment_era	-1.339	0.130	-10.306	0.000	-1.594	-1.085
Average_Transfer_Amount_InR	0.000162	0.000057	2.840	0.005	0.000050	0.000274
Average_Wallet_Balance_InR	-0.002662	0.000129	-20.604	0.000	-0.002915	-0.002408
Average_Withdrawal_Amount_InR	0.000839	0.000123	6.802	0.000	0.000597	0.001081
Avg_recharge_value_InR	0.004225	0.000259	16.337	0.000	0.003718	0.004731
Avg_Spend_Per_Month_InR	-0.000017	0.000035	-0.489	0.625	-0.000085	0.000051
CIBIL_Score	-0.001993	0.000236	-8.438	0.000	-0.002456	-0.001530
Current_Wallet_Balance_InR	-0.001099	0.000050	-22.129	0.000	-0.001196	-0.001001
Customer_Age	-0.045	0.003074	-14.789	0.000	-0.051	-0.039
Income	-0.092	0.044	-2.073	0.038	-0.179	-0.004997
No_of_bank_accounts_linked_with_wallet	0.985	0.047	21.034	0.000	0.894	1.077
No_of_days_wallet_used_in_a_month	-0.016	0.007475	-2.086	0.037	-0.030	-0.000942
No_of_utility_bill_payr	-0.058	0.025	-2.298	0.022	-0.108	-0.008594
No_of_Wallet_Recharg	1.531	0.081	18.939	0.000	1.373	1.689

- 72.1% McFadden R-squared shows good regression line fit
- Relevant variables with p-values mentioned on the left

		Predicted	
		0	1
Actual	0	1555	210
	1	149	86
Accuracy		82%	
Precision		29%	
Recall		37%	

**Correlation Matrix**

	Current_Wallet_Balance_InR	Average_Wallet_Balance_InR	No_of_bank_accounts_linked_with_wallet	No_of_CCs_linked_with_wallet	Avg_recharge_value_InR	No_of_Wallet_Recharge_Month	Customer_Age	Gender	Automatic_payment_enabled	Income	City	No_of_utility_bill_payments_in_a_month	No_of_days_wallet_used_in_a_month	Average_Transfer_Amount_InR	Average_Withdrawal_Amount_InR	CIBIL_Score	Avg_Spend_Per_Month
Current_Wallet_Balance_InR	1.00																
Average_Wallet_Balance_InR	0.05	1.00															
No_of_bank_accounts_linked_with_wallet	-0.11	-0.07	1.00														
No_of_CCs_linked_with_wallet	0.06	-0.03	0.18	1.00													
Avg_recharge_value_InR	0.03	0.71	-0.05	-0.02	1.00												
No_of_Wallet_Recharge_Month	-0.00	0.62	-0.01	-0.02	-0.00	1.00											
Customer_Age	0.06	0.03	-0.05	-0.02	0.02	-0.00	1.00										
Gender	-0.01	-0.01	0.01	-0.01	0.00	-0.00	-0.01	1.00									
Automatic_payment_enabled	0.02	0.02	-0.06	-0.08	0.00	0.01	0.03	0.01	1.00								
Income	-0.01	0.01	0.01	0.00	0.00	0.01	-0.00	-0.00	0.01	1.00							
City	-0.01	0.02	0.02	0.01	0.02	0.01	-0.00	-0.02	-0.01	-0.00	1.00						
No_of_utility_bill_payments_in_a_month	0.03	0.02	-0.00	-0.01	0.02	0.00	0.02	-0.00	-0.01	-0.00	-0.00	1.00					
No_of_days_wallet_used_in_a_month	0.01	0.01	-0.01	-0.00	-0.00	0.01	-0.01	0.00	0.01	0.03	0.01	-0.01	1.00				
Average_Transfer_Amount_InR	-0.04	-0.03	0.03	0.02	-0.01	-0.02	0.01	0.01	-0.01	-0.01	-0.01	0.00	-0.00	1.00			
Average_Withdrawal_Amount_InR	-0.02	-0.03	0.08	0.02	0.00	-0.02	-0.03	-0.00	-0.01	0.01	0.01	-0.01	-0.00	0.02	1.00		
CIBIL_Score	0.02	0.03	-0.04	-0.05	0.02	0.02	0.01	0.01	0.02	-0.01	0.00	0.00	0.02	0.00	-0.02	1.00	
Avg_Spend_Per_Month	-0.02	-0.01	-0.00	-0.16	-0.01	0.00	-0.01	0.00	0.00	-0.01	-0.00	0.03	0.01	0.02	0.01	0.01	1.00

## Correlation matrix

- “High vs Low Risk” taken as dependent variable. Independent variables first selected based on our understanding.
- Then correlation analysis performed multiple times to eliminate variables.
- Relevant variables used to perform logistic regression analysis with modified manual and situational weightage assigned to each variable.
- Coefficients of model with 72% McFadden R squared value used to predict test data values with **82% accuracy.**



- Statista Global Consumer Survey 2021 used to obtain total digital transaction users in India and their segmentation
- Majority customers use Digital Transactions for Digital commerce. Only **20%** for POS payments
- Penetration rates increased by around **7%** across total user base

## ESTIMATING THE TOTAL ADDRESSABLE MARKET - OPPORTUNITY OF MICRO LENDING TO WALLET USERS in INDIA

### TOTAL DIGITAL TRANSACTION USERS IN INDIA

	USERS BY SEGMENT in million users		PENETRATION RATE BY SEGMENT in percent	
	2021	2022	2020	2021
Digital Commerce	643.9	739.3	39.75%	46.21%
Digital Remittances	0.2	0.2	0.01%	0.01%
Mobile POS Payments	281.1	317.3	17.16%	20.17%
<b>Total</b>	<b>644.1</b>	<b>739.5</b>	<b>39.76%</b>	<b>46.22%</b>

### >> Segmenting Digital Transaction Users by Income Groups

High Income	37.50%
Medium Income	33.80%
Low Income	28.70%

**Source :** Statista Global Consumer Survey  
<https://www.statista.com/global-consumer-survey>  
 Region : India  
 Market : Digital Payments  
 Oct-21

- Statista Global Consumer Survey 2021 used to obtain total digital transaction users in India and their segmentation
- Majority customers use Digital Transactions for Digital commerce. Only 20% for POS payments
- Penetration rates increased by around 7% across total user base

>> Calculating Average Spend per Year from each Income Group using the Transaction Data that was provided to us in Round 1 of the WITDA Challenge

Customers	Min of Avg_Spend_Per_Month	Max of Avg_Spend_Per_Month	Average of Avg_Spend_Per_Month
High Income	₹ 838	₹ 8,635	₹ 3,095
Medium Income	₹ 858	₹ 8,797	₹ 3,138
Low Income	₹ 828	₹ 8,715	₹ 3,121
<b>Grand Total</b>	<b>₹ 828</b>	<b>₹ 8,797</b>	<b>₹ 3,126</b>

As analysis shows similar ranges as well as averages of all customer groups, we are assuming average customer monthly spend as Rs. 3,126 for any customer

On the basis of Market Survey conducted by us of around 100 e-wallet using participants:

Responses to "How frequently do you run out of money during a purchase/bill payment on any digital payment/wallet app ?"

Segments	Percentage of Customers	Total Customers
Occasionally	42.60%	27,43,87,659
Often	8.50%	5,47,48,711
Always	3.20%	2,06,11,280
Never	45.70%	29,43,54,836

40 We are assuming these segment percentages as proxies that we will apply to the total population set.

41 Lending Opportunity Factor : We are assuming that a Percentage of transactions made through e-wallet app is a potential source of revenue that can be "micro"- lent, and hence remains untapped.

42

	Lending Opportunity Factor	Total Customers	Average Spend Per Month * 12	Total Yearly Spend of Segment * Lending Factor
43				
44	Occasionally	27,43,87,659	₹ 37,512	₹ 4,11,71,31,95,172
45	Often	5,47,48,711	₹ 37,512	₹ 1,43,76,13,56,295
46	Always	2,06,11,280	₹ 37,512	₹ 77,31,70,31,957
47	Never	29,43,54,836	₹ 37,512	₹ -

48

49

50 **Total Addressable Market** : Potential Micro Lending Amount of Each Customer Segment \* Number of Customers in Segment

51

52 **Total Addressable Market** : Average Monthly Spend of Each customer \* 12 \*Lending Opportunity Factor of Segment \* Number of Customers in segment

53

54 **Total Addressable Market**      8.23 Billion USD

\*1 INR = 0.013 USD as of  
10/12/2021 08:30 A.M.

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