

# MifosX Messenger

Real time, automated, transaction triggered  
SMS to any number for Mifos X  
(tested for Indian numbers including DND)

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# Automatic SMS Notifications

- Mifos X application has gone mobile, so loan officers can go mobile, but what about clients? Any financial transaction without notification to client is a gap in trust
- Immediate receipts require taking a printer to the group meeting. Dilemma what type of printer, especially if constant electricity is not guaranteed. Practical solution: automatic, real time SMS notification to client
- Automated SMS can be generated from Mifos X, but how to build a maintainable solution, especially with so many providers?



# Bulk SMS Regulations

- TRAI (Telephone Regulatory Authority of India) rules restrict Bulk SMS to certain numbers
- Subscribers may register via service provider Do-not-disturb(DND) lists or National Do-not-call lists at <http://ndnc.in>
- A single promotional SMS to any such number incurs a fine of Rs. 25,000 so is prevented at the SMS provider stage itself
- Workaround – transactional SMS. Pilot testing with TBulkSMS Transactional API

# SMS Sendeing App

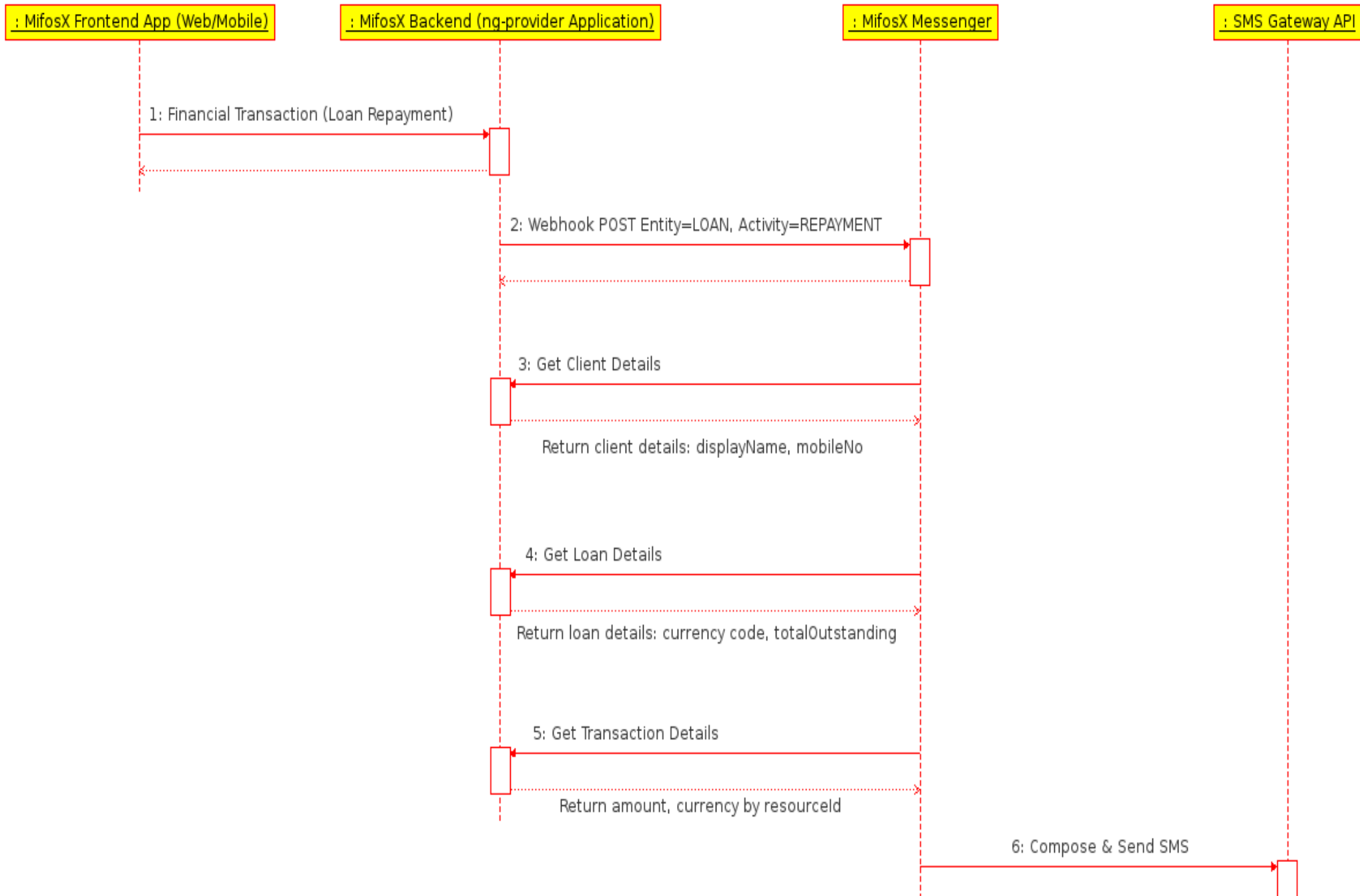
- The new Mifos X webhooks API (credits Markus & Avik) – possibility of automatic SMS software as an independent maintainable application
- Works as a Web application which talks to Mifos X via HTTP webhook calls
- Should be pluggable with any provider and extensible to add new providers as well
- Workflows covered: Loan repayment, Savings deposit, Savings withdrawal
- Should be easy to develop and extend



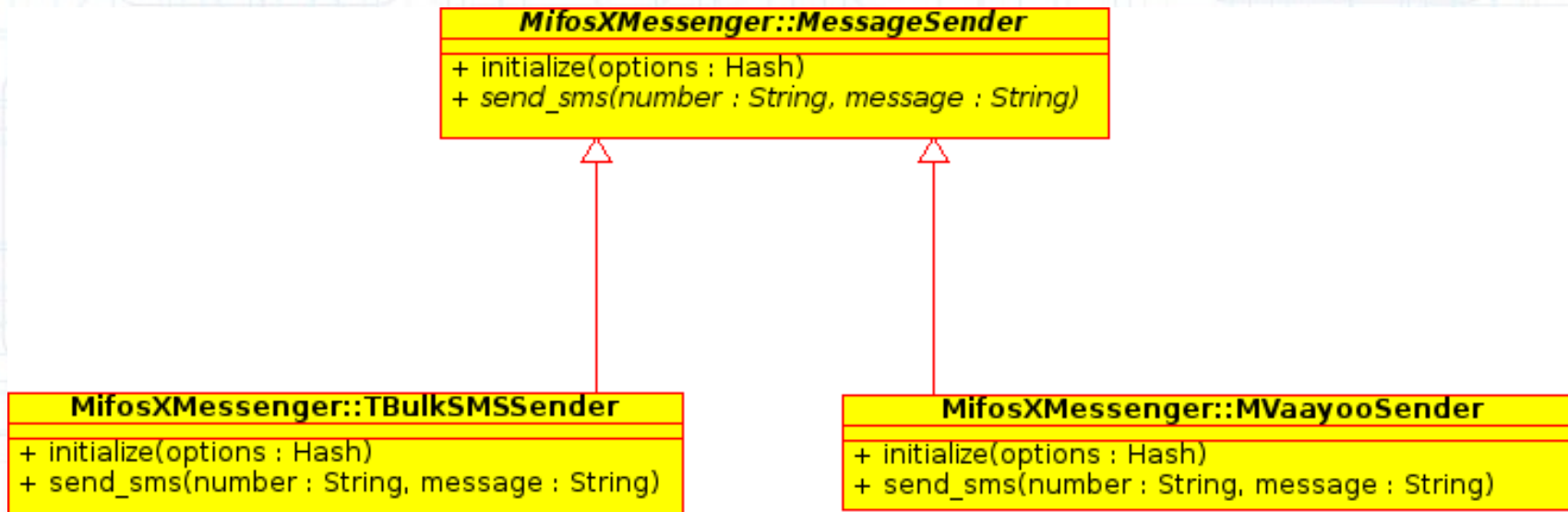
# Mifos X Messenger

- Platform of choice: Ruby-Sintara. Quick to start, perfect for handling HTTP requests
- Small, Modular & Object oriented – easy to use, deploy, read, modify and extend
- Internationalization: messages with amounts in local currency, templates customizable based on local client language
- Extensible and very straightforward to add other Bulk SMS providers. Already has 2 Indian providers – TBulkSMS and mVaayoo
- Workflow follows...

# Workflow Sequence



# Different Provider? Just Subclass MessageSender



# Sample Subclass: TBulkSMSender

branch: master

mifosx-messenger / lib / mifosx-messenger / tbulksms-sender.rb



Terence Denzil Monteiro 8 days ago Updated app & SMS templates based on new MifosX 1.25 API

0 contributors

27 lines (21 sloc) | 0.571 kb

Raw

Blame

History



```
1 require 'httpclient'
2 require_relative 'message-sender'
3
4 module MifosXMessenger
5   class TBulkSMSender < MessageSender
6     @uri = nil
7     @params = nil
8
9     def initialize(options = {})
10       @uri = options['uri'] || 'http://login.tbulksms.com/API/WebSMS/Http/v1.0a/index.php'
11       @params = options
12       @params['format'] ||= 'json'
13       @params['sender'] ||= 'WEBSMS'
14     end
15
16     def send_sms(number, message)
17       params = @params
18       params['to'] = number
19       params['message'] = message
20
21       client = HTTPClient.new(:agent_name => 'MyAgent/0.1')
22       client.post(@uri, params)
23     end
24   end
25 end
```



# Customizable SMS Format

- Easily modify SMS format, since all SMS templates are in a single class
- Translate SMS into any language by modifying template
- For languages with script in non-ASCII characters (e.g Kannada, Hindi, Tamil), compose and send as Unicode (provider must support Unicode SMS). But ensure the client mobile supports unicode as well
- Message Template class to extend..

# Message Templates Class

SanjoseSolutions / mifosx-messenger

Unwatch 1

Star 0

Fork 0

branch: master

mifosx-messenger / lib / mifosx-messenger / message-templates.rb



Terence Denzil Monteiro 8 days ago Updated app & SMS templates based on new MifosX 1.25 API

0 contributors

27 lines (23 sloc) | 1.094 kb

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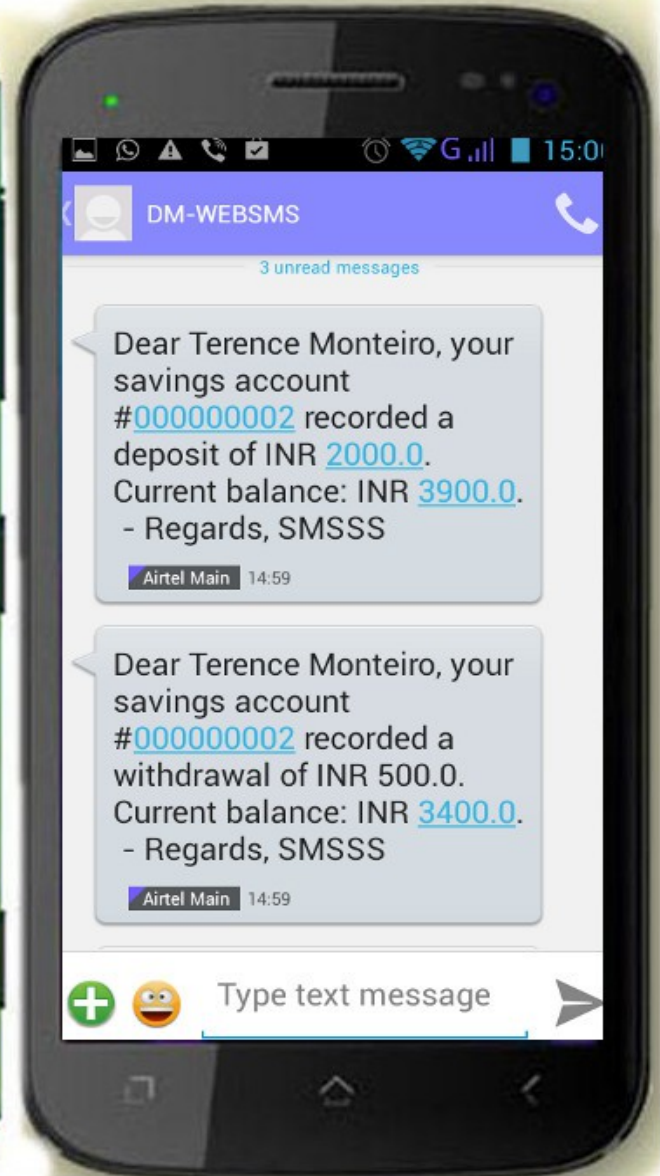
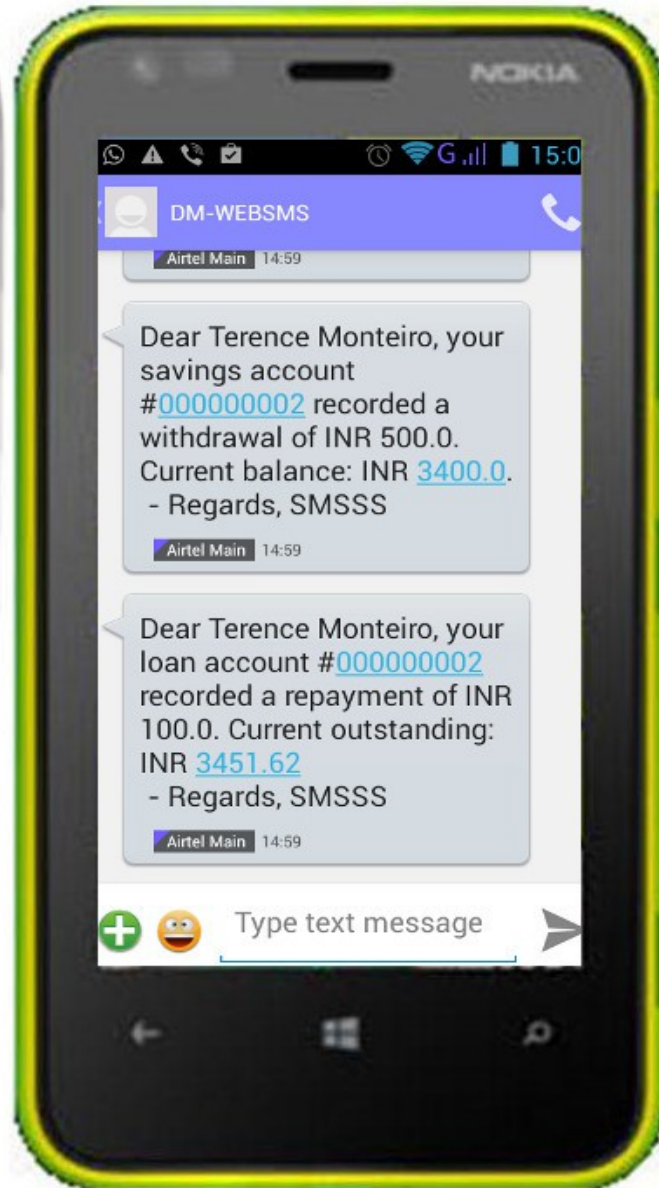
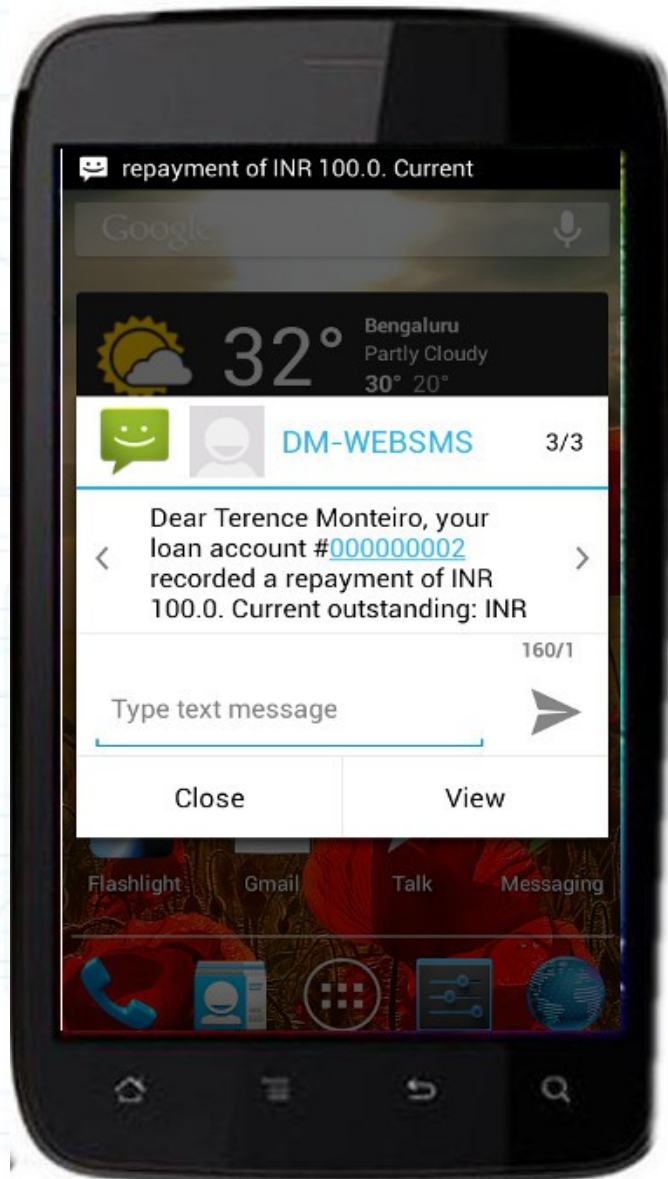
History



```
1 module MifosXMessenger
2   class MessageTemplates
3     @signature = nil
4     def initialize(signature)
5       @signature = signature
6     end
7
8     def loan_repayment(client, loan, trans)
9       "Dear #{client['displayName']}, your loan account ##{loan['accountNo']} recorded a repayment of "
10      "#{trans['currency']['code']} #{trans['amount']}. Current outstanding: " +
11      "#{loan['currency']['code']} #{loan['summary']['totalOutstanding']}\n#{@signature}"
12    end
13
14    def savings_deposit(client, savings, trans)
15      "Dear #{client['displayName']}, your savings account ##{savings['accountNo']} recorded a deposit of
16      "#{savings['currency']['code']} #{trans['amount']}. Current balance: " +
17      "#{savings['currency']['code']} #{trans['runningBalance']}. \n#{@signature}"
18    end
19
20    def savings_withdrawal(client, savings, trans)
21      "Dear #{client['displayName']}, your savings account ##{savings['accountNo']} recorded a withdrawa
22      "#{savings['currency']['code']} #{trans['amount']}. Current balance: " +
23      "#{savings['currency']['code']} #{trans['runningBalance']}. \n#{@signature}"
24    end
25  end
26 end
```



# Test Results





# Conclusion

- Challenge: quick, affordable, immediate notification to client on any financial transaction (loan repayment, deposit, withdrawal, etc) keeps client trust
- Mifos X Messenger automated Bulk SMS. Practical affordable solution for any MFI. Supports multiple providers and extensible to add more
- Customizable SMS format, templates can be modified to use local language

# Resources

- Blog post with workflow:  
<http://blog.sanjosesolutions.in>
- To get started, clone repo and follow instructions in README:  
<https://github.com/SanjoseSolutions/mifosx-messenger>
- To extend for new provider, subclass `MifosXMessenger::MessageSender` based on `TBulkSMSSEnder` class in `lib/mifosx-messenger/tbulksms-sender.rb` (to test BulkSMS API, use Chrome Postman plugin or any REST client)
- Questions on Mifos X mailing lists



# Thanks

partnering in the fight against poverty,  
one line of code at a time