



*sendQuick*<sup>®</sup>

SMS Banking & Credit Card Operations

Reducing Cost & Achieving Superior Customer Service

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## INTRODUCTION

The banking industry is constantly facing new competitive challenges to improve margins or to reduce costs.

Technology, especially computer technologies plays a central role in allowing banks to reduce costs, as well

as delivering new services. Over the years, innovation like the Automated Teller Machine (ATM), phone banking

and more recently internet banking, are examples of innovations that has reduce costs as well as enhancing

banking customer experiences. As the mobile and computer technologies converge, new innovative services

are available for the banking industries to adopt and deploy. Two key technologies are Short Message Service

(SMS) and the mobile internet on mobile phone (WAP).

This document will focus on SMS technologies and how SMS can be used by banks to help reduce costs,

streamline banking operations and allow banks to deliver superior customer service experience by offering

banking on-the-go using SMS technologies.

## INTRODUCTION TO SMS

Short Message Service (or known as SMS or text messaging) are found on all mobile phones across across all technologies, including GSM, CDMA and 3G. SMS is a short message that can be sent from a phone to phone, and pushed to the recipients device when sent. The technology delivers each message as a 'package' of 160 characters but current improvement allow them to be sent as 'long message' (a few SMS to be read and delivered as a single message) which is known as conentrated SMS. Some key advantages of SMS includes, short messages of 160 characters are delivered instantly across all mobile phones and network, good interoperability between networks and technologies (GSM and CDMA), non-intrusive nature, always operational, service is activated by default to all phone users, low cost while most cost less than a normal voice call, sender pays, free for the receiver and messages delivered across networks (roaming) capability.

With mobile phones becoming the dominant mobile device that many people own, SMS becomes the most popular low cost messaging medium for all users. Furthermore, the mobile penetration is very pervasive (countries like Singapore, Hong Kong and Taiwan and more than 100% mobile penetration in their population) and the popularity of SMS (the Philippines send more than a billion messages a day) making mobile phones and SMS the most natural choice for banks to reach customers.

## BANKING SERVICES TO GO MOBILE

While there are many areas in the banking transactions that can use SMS, the key banking operations that will be discussed are credit card, banking operations and call centres.

### SMS IN CREDIT CARD OPERATIONS

SMS can be deployed in the credit card operations as credit card is one of the most widely used banking service by customers. There are many areas that SMS can assist to reduce cost and improve the credit card operations. The following sections document how the various credit card operations can benefit from using SMS.

### SMS FOR PAYMENT REMINDERS

In a credit card operation, one of the key cost component is payment collection. In this process, reminders (sent via normal mail) is an important cost component in terms of materials, postage and manpower cost.

Benefits to Bank include - improved collection position reducing on default risks(costs), reducing reminders transaction costs (mail reminders cost about S\$1.00 in materials cost compared to SMS cost of S\$0.05) which translates to a savings of 95%, faster collection improves financing position (cost of capital)

Benefits to Customers includes - prompt and direct SMS reminder service to the mobile phone, eliminates possibility of late payment fee which translates as savings to the customers, SMS is non-intrusive and message is portable and all payments can be executed immediately upon receipt via ATM, internet banking or other channels.

## SMS FOR CARD ACTIVATION

One of the methods to reduce credit card fraud is to have the new credit card holder to activate the new card before any transactions can be done. SMS present a good alternative to activation via the phone or counter due to lower transaction costs.

Benefits to Bank includes - providing a new channel for (SMS) activation, SMS present a low transaction cost (S\$0.05-S\$0.10) compared to call centre, phone banking or over the counter activation, SMS provides convenience of instant activation in a store and forward method, relieve other channels reducing cost to banks, high load processing for the same investment in the channel.

Benefits to Customers includes - convenience in activation at anytime and anywhere, ease of use as compared to phone banking and hassle free (compared to over the counter), minimising on error as the SMS message can be verified before sending the SMS (compared to phone banking), fast and non-intrusive and lower in cost to customer.

### SMS MARKETING

Marketing and promotion is one of the most costly activities in credit card operations. Traditional media are too rigid, inflexible and not timely. SMS offers a different dimension that is very appealing to both banks and customers.

Benefit to Bank includes - instantaneous marketing through SMS. Time taken to create message and delivered to every card holder can be done within a few minutes or hours or within a day (depending on the number of recipients), SMS is direct, non-intrusive and the message readership is much higher as you would unlikely delete an SMS without reading it first, SMS is ideal and efficient for impromptu and demographically specific targeted audiences for instance in terms of gender, age, spending power and patterns and lastly SMS is low in cost as compared to other available medias, delivering full messages at a mere S\$0.05.

Benefits to Customers includes - being attuned to promotional activities, enjoy relevant promotions rather than random unsolicited promotional flyers, paperless technology is more environmentally friendly and promotion message is portable as it can be stored in the mobile phone.

### **SMS FOR LOYALTY POINT ENQUIRY**

Enquiry for loyalty points is a key cost driver for the bank and providing a SMS channel reduces the transaction costs and increases cardholder spending.

Benefits to Bank includes - Low transaction cost for points enquiry via SMS, multi-channel approach for banks and to promote cardholder expenditure increases revenue to banks.

Benefits to Customers - Convenient and low cost transaction enquiry, able to check the points status, anytime, anywhere, higher points conversion which is cost saving to the bank.

### **SMS FOR FRAUD DETECTION**

SMS can be used to reduce credit card fraud. Some of the services includes SMS notification for card transactions, SMS notification for card anomaly (as detected by the fraud system) and confirmation of transaction using SMS.

Benefits to Banks includes - Reduction in costs and losses due to fraud activities. SMS notification and information is lower cost than current manual calling approach, involving the cardholder in the process, reducing the monitoring costs.

Benefits to Customers includes - reduce the inconvenience due to card fraud. SMS is more convenient than phone call and other channel, information transparency in transaction.

### **SMS FOR CARD TRANSACTION**

The implementation of Verified by Visa and Mastercard SecureCode program can be done using SMS.

Benefits to Banks includes - Convenient to implement as registration can be done via SMS. Transactions via SMS reduces on errors, lower cost in transactions and increased revenue from internet transactions.

Benefits to Customers includes - Minimises on fraud activities. Better confidence in performing internet transactions and more convenience.

### **SMS FOR CARD PROMOTION AND DISCOUNTS PROGRAM**

One key feedback from customer is that they are not aware of the various card-linked promotions and discounts offered by different merchants. SMS can offer these information on the move.

Benefits to Bank includes - Information can be requested by users on demand. Higher revenue over transactions from cardholders who are aware of the promotions as cardholders will use the bank's card, low cost in providing the information via SMS, and improved customer and merchant loyalty.

Benefits to Customers includes - Save on expenses while partaking in promotional activities. Convenience as such information is readily available upon request and smart management on expenditure.

### **SMS FOR CREDIT LIMIT ENQUIRY**

There is an information disparity on the actual credit card available limit due to the standard billing cycle, payment delay and actual card usage. Hence, SMS provides an instant credit available balance for all cardholders.

Benefits to Banks includes - Low transaction costs to offer the service as compared to phone banking or call centres and higher spending habits from customers as they have more information on the available limit which translates to more revenue for the bank.

Benefits to Customers includes - Ease and convenience in making checks. Avoid unnecessary issues with expenditure over the available limit and receive readily available information on consumer expenditure patterns.

## **SMS IN BANKING OPERATIONS**

SMS can be applied to virtually almost every aspect available in the banking operations. The following sections summarises on some of the operations that SMS can be applied to improve on the delivery of banking services.

### **SMS FOR LOAN PAYMENT REMINDER**

Loan payment collection and reminders are costly processes undertaken by the bank. SMS can be used to reduce the cost and reduce on collection and risk (NOL) for the bank.

Benefits to Banks includes - Reduce collection costs as SMS reminder is cheaper than normal mail or other channels, SMS reminders are fully automated and no human intervention is required this reducing on transaction costs and minimises on the possibilities of incurring bad debt.

Benefits to Customers includes - Timely and non-intrusive reminders, reducing on penalty payment this reducing cost to customers while keeping account current thus maintaining good credit scoring for customers.

### **SMS FOR OUTSTANDING LOANS AND ACCOUNT ENQUIRY**

The time difference between sending the monthly statement, loan repayable schedule and the adjustment to loan interest rates makes delivery of timely information to customers more costly and complicated via the traditional means. SMS presents an on-demand alternative for customers.

Benefits to Bank includes - delivery of information at anytime and anywhere, low transaction costs, low information delivery channel and ride on existing SMS channel.

Benefits to Customers includes - demand for information at anytime and anywhere while making timely decisions with transparency with information.

## **SMS FOR CHEQUE TRANSACTION AND STANDING ORDERS**

As customers are using non-cash payments, customers need to be informed when a transaction takes place. SMS presents a direct, non-intrusive and low cost way to deliver the information.

Benefits to Bank includes- minimise on human error as well as fraud cases relating to cheque and standing orders, reduce on customer support costs and offer better customer service in turn, building on a stronger business and client relationship.

Benefits to Customers includes - timely information on transactions - providing information transparency to the customers, better account planning which reduces the risk of cashflow mismatch that avoids incurring on heavy penalties and reduces on inconveniences that will arise by minimising on fraud and unauthorised payment circumstances.

### **SMS FOR 2-FACTOR AUTHENTICATION (ONE TIME PASSWORD - OTP)**

Security is an important element for banks and an area of main concern for banking operations and transactions. Transaction security is more important with the advent of internet, where 'faceless' transactions takes precedence. Banks are looking at various ways to enhance transaction security and offer different types of two factor authentication (2FA) for internet banking. 2FA using SMS with One Time Password (OTP) is getting more popular for banks, especially with the pervasive use of mobile phone amongst the customers.

Benefits to Banks includes - low deployment, maintenance and support cost for 2FA with SMS OTP, easy to deploy as there is no hardware or gadget support required, minimal costs in customer education as SMS is well understood and received by all, leverage on existing SMS infrastructure and accepted as secure methods.

Benefits to Customers includes - convenience and use at ease, virtually zero maintenance as SMS is already activated in all phones, security is enhanced as mobile phones are handled as personal property to the customer, reliable and can be delivered overseas over auto-roaming and no costs incurred as SMS OTP is a free feature to the customers.

### **SMS FOR SYSTEMS NOTIFICATION**

Maintaining systems availability is a critical function for all banks. Banking is a 24x7 service delivery, where customers will transact with banks (ATM, internet, phone and SMS) anytime of the day. IT support and service delivery team needs to be informed immediately when there is a system issue.

Benefits to Banks includes - ease of deployment as SMS is readily available, supports standard IT messaging formats which includes; SNMP Traps, Syslog and emails, leverages on existing SMS infrastructure and reduces on downtime and opportunity costs which could arise due to loss of business.

Benefits to Customers includes - constant service availability and reliability of services provided by the bank.

### **SMS FOR CALL CENTRE**

Call centre is an important customer facing function for all banks. It has a very important role in ensuring good customer experience and banks need to constantly review on improving the service delivery of call centre function. One of the challenges facing contact centre is how to balance enhancing customer service experience while maintaining or reducing operational costs. SMS is a possible option to enhance this service delivery while assisting to reduce on incurring cost.

### **SMS FOR INFORMATION DESPATCH**

Instead of having customers to wait for information on the phone, the contact centre can use SMS to deliver the information via SMS. This will provide benefits to the banks and customers.

Benefits to Banks includes - shortens on the duration spent on customer servicing over the phone thus freeing up phone resources in attending to more customers, allows call centre agents to search for information and dispatch them when available, the ability to service more customers at the same cost and low transaction costs for each SMS.

Benefits to Customers includes - lower transaction cost as SMS is cheaper than phone calls, convenience as SMS is non-intrusive, information that is sent to mobile phones are recorded automatically and transaction time is shorter over the phone.

### **SMS FOR CUSTOMER ENQUIRY**

The concept of call centre is to receive incoming calls from customers. However, inbound calls are predictable, making it difficult for resource planning. SMS can assist to alleviate the problem for better resource planning.

Benefits to Bank - better resource planning as agent will call customers when resource is available, lower call centre cost, improve productivity to service more transactions and low transaction cost.

Benefits to Customers - need not wait on the phone as enquiry can be submitted via SMS, reduce telephony cost and only need to send one SMS message and convenience with arranging when the call can be made.

### **SMS FOR FORMS REQUEST**

SMS can facilitate standard transactions or forms request and delivery when combined with email.

Benefits to Bank - reduce on phone call transactions as well as call centre costs, easy delivery for standardised documents or forms, better customer service experience, low document delivery cost with instantaneous delivery via email.

Benefits to Customers - convenience in making requests anytime and anywhere, immediate delivery and fast transaction response via SMS and email.

## SENDQUICK SMS BANKING SOLUTION

sendQuick SMS gateway is an appliance based SMS for banks and enterprises. As an enterprise class system, sendQuick support multiple types of configuration, from single server to RAID and High Availability (HA) infrastructure to ensure continuous SMS service availability to banking customers.

sendQuick has the following features for banking operations as listed below:

- Interface to banking system (AS400) and credit card system via HTTP Post, TCPIP messages, SecureFTP and others
- Web interface for direct messaging for different users to send different messages
- Bulk messaging capability
- High throughput via Telco connection via HTTP Post or SMPP3.4
- GSM modem messaging as a backup capability
- 2-way messaging to banking system for transaction enquiry
- IT notification messaging format (SMTP, SNMP Trap and Syslog)
- Database integration via ODBC connection
- Other connection method that can be customised

Unlike normal applications, sendQuick is delivered as an appliance server bringing the benefits of appliance server to the IT and application team. sendQuick has a low Total Cost of Ownership (TCO), maintenance free and reduce the support cost for the bank.

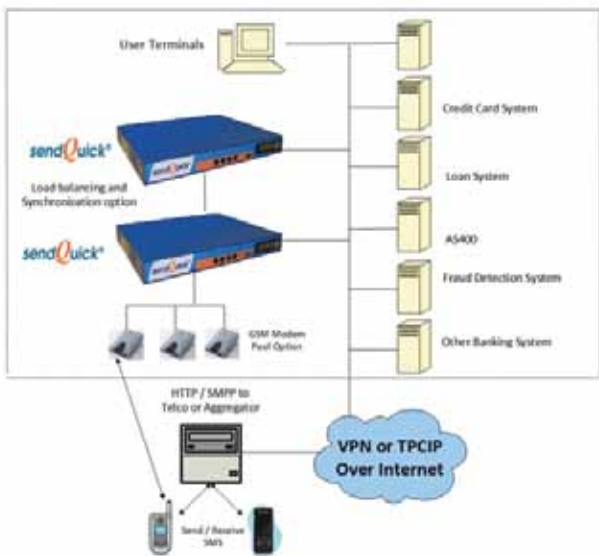
Furthermore, all sendQuick systems comes with one year standard warranty. As an appliance, it is easy and quick to deploy for standard modules.

sendQuick has been deployed in more than 1000 customers worldwide in more than 15 countries across all industries and applications.



**TECHNICAL OVERVIEW**

sendQuick works on standard TCP/IP protocol, connecting to the network using standard 100BT with normal RJ45 cable. For Gigabit ethernet, the server that support this high speed network can be chosen. The schematic diagram is illustrated below.



**RETURN ON INVESTMENT (ROI) COMPUTATION**

sendQuick presents a good ROI for most banks. In fact, the ROI can be achieved fairly easily for most banks. As an illustration, we are using just a few services that a bank may deploy. If the bank deploy more services, the ROI will be shorter (faster).

- Assumptions: If the bank has,
- 500,000 credit card holders and acquire 200,000 new cards a year (total of 700,000 cardholders)
  - 100,000 cards are re-issued every year
  - Late payment rate of 30% (missed the 30-45 payment deadline)
  - Per SMS cost is S\$0.11

- a) Cost Savings on Communication with Customers on Card Collection (new and re-issue cards)
- Cost of sending Card Collection notice via normal mail:  $(300,000 \times 0.50) = S\$150,000$
  - Cost of sending Credit Card via registered mail:  $(300,000 \times S\$2.00) = S\$600,000$
  - Cost of card collection at branch with notice via SMS (2 SMS per customer):  $(300,000 \times 2 \times 0.11) = S\$66,000$

Cost savings in using SMS to inform customers for Card Collection is S\$684,000 per annum

- b) Cost Savings in using SMS for Credit Card Activation (new and re-issue cards)
- Cost of Activating Credit Card via Call Centre:  $(300,000 \times 5.00) = S\$1,500,000$
  - Cost of Activating Credit Card via 1800 IVR:  $(300,000 \times 1.00) = S\$300,000$
  - Cost of Activating Credit Card using SMS (2 SMS per customer):  $(300,000 \times 2 \times 0.11) = S\$66,000$

Cost Savings in activating Credit Card using SMS compared to Call Centre and IVR is S\$1,434,000 and S\$234,000 per annum respectively

- c) Cost Savings in sending SMS reminder notice instead of normal mail
- Cost of sending reminder mail:  $(210,000 \times 0.50) = S\$105,000$
  - Cost of sending SMS (1 SMS per customer):  $(210,000 \times 0.11) = S\$23,100$

Cost Savings in sending SMS instead of normal mail for payment overdue reminder is estimated at S\$982,800  $(12 \times 105000 - 23100)$

From the above examples, banks can achieve a cost of savings of approximately S\$2,000,000 (at least) by implementing SMS for the three services above.

The same system can be used for other services as mentioned in the earlier section of the document. With the inclusion of these services, the ROI will be very attractive to the bank.

### CASE EXAMPLE: SENDQUICK FOR SMS OTP

sendQuick presents an attractive proposition for banks to use for SMS OTP as the primary or backup system. A simple case example of a bank using sendQuick as SMS OTP system as below.

Assumptions: If the bank has,

- 500,000 SMS OTP transaction per month
- Peak load of 50 SMS per minute

SMS System assumptions:

- Per modem throughput rate of 10 SMS per minute
- Per SMS cost is S\$0.05 (Singapore local SMS cost. Some operator offers S\$0.03 per SMS on the SIM cards)
- Existing SMS messages rates: S\$0.06 per message

a) Investment cost for a set of sendQuick with 3 modems each, in a HA environment (2 systems)

- One time investment: S\$34,700
- One time installation: S\$3,000
- Annual maintenance: S\$6,940

b) SMS Throughput (average) on a month

- Number of SMS per min: 6 x 10 = 60 minutes
- Monthly SMS throughput: 60 x 60 x 24 x 30 = 2,592,000

c) Cost Savings in sending SMS using sendQuick compared to existing method

- Cost savings per SMS message: S\$0.06 - S\$0.03 = S\$0.03
- Total SMS cost savings per month: 500,000 x S\$0.03 = S\$15,000

Cost savings per annum (in SMS usage volume) is S\$180,000. ROI in using sendQuick is achieved in 3 months or less.

From the above examples, banks can achieve a cost of savings of approximately S\$15,000 (at least) by implementing SMS for OTP.

As the SMS cost is always a local cost, the saving is also significant when deployed in other countries (e.g. SMS cost in Malaysia is RM0.05 per message) and provide good cost savings for the bank.

sendQuick is also a good backup system for 2FA OTP ensuring continuous operation of banking services when there is network connectivity issues (eg, connectivity disruption with the telco)

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sendQuick® is the industry's leading appliance based SMS gateway specifically designed for enterprise messaging. Developed in 2004, it has since been implemented by more than 1300 companies worldwide across all continents.

As a low cost plug-and-play appliance that is reliable, scalable and compatible with key mobile technologies like GSM and CDMA, sendQuick® has been applied successfully across various industries. Examples includes banking, finance, insurance, manufacturing, retail, government, logistics, education, healthcare; for purposes like IT alerts and notifications, 2 factor authentication with SMS OTP (One Time Password), marketing campaigns, emergency broadcasting.

sendQuick® is developed by TalariaX Pte Ltd, a Singapore incorporated company focusing on mobile application development specifically on SMS, MMS and 3G technologies. Based on the channel development business model, TalariaX™ takes pride in working with strong partners, distributors and resellers to bring the benefits of SMS to enterprise customers worldwide.