sendQuick®

SMS Healthcare & Pharmaceuticals
Reducing Costs & Improving Patient Care Services

Contents

INTRODUCTION

Healthcare in the 21st century is increasingly challenging, competitive and fast paced. With globalization and advancement in technologies, recent trends in healthcare includes remote healthcare provision and customized treatments.

With the general human population being more aware and educated on health issues along with the myriad of healthcare options available, healthcare institutions have to search for ways to be more innovative, accessible and efficient to remain competitive.

Faced with the pressing need to maximize resources, healthcare providers have to build a robust infrastructure to effectively manage data, information and communication, to meet the needs of staff and patients. This document will focus on SMS technology and how SMS can reduce cost, increase efficiency in communication as well as to improve patient care services and operations to build a networked community conducive to good health.

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.

SMS IN THE HEALTHCARE INDUSTRY

There are numerous ways SMS can be utilized in the Healthcare industry and this paper shall look at 4 broad areas namely using SMS for general broadcast of urgent and/or important information, using SMS for increased efficiency in monitoring patient progress and condition, using SMS for relationship management and using SMS for more effective communication within the institute.

SMS FOR GENERAL BROADCASTS OF URGENT AND/OR IMPORTANT INFORMATION

ALERTS/UPDATES ON EPIDEMICS

Recent health threats like SARS (Severe Acute Respiratory Syndrome) and H1N1 has alerted healthcare providers to the need for an emergency response system. With sendQuick's SMS solutions, healthcare providers can quickly and efficiently send bulk SMS notifications to the relevant parties. This aids in reducing costs and helps patients to quickly be aware of the situation in order to decide on the best course of action.

Benefits to Healthcare Institutions - Quicker way to broadcast alerts out to the masses rather than through calls/emails which reduces effort taken on the administrator's part this freeing up resources to deal with other matters and is low in cost.

Benefits to Patients - No missed calls, message is available when they are ready and can be read quickly and easily.

REMINDER ON HOSPITALIZATION FEES & OUTSTANDING PAYMENTS

Chasing for hospitalization fees and outstanding payments can pose a significant administrative burden and costs to a healthcare provider. SMS can help reduce the financial and psychological stress to the administrators and patients/patient's next of kin.

Benefits to Healthcare Institutions - Reduce effort on administrator's part as SMS sending is automated, reduces reminder transaction costs(mail reminder cost about S$1.00 in material cost compared to SMS cost of S$0.05). This translates to a savings of 95%, better financial health if no late payments and more environmentally friendly due to paperless approach.

Benefits to Patients/Patient's next of kin - Non-intrusive, portable notification, prompt payment avoids late fees and immediate receipt for execution of prompt payment.

CHANGES IN OPENING HOURS

In today's fast changing world, there maybe sudden events/happenings that could possibly result in changes to operating hours.

Benefits to Healthcare Institutions - Quicker way to broadcast alerts out to the masses rather than through calls/emails, reduces effort on the administrator's part thus freeing up resources to deal with other matters and low cost.

Benefits to Patients - Message is available when they are ready hence no missed calls, read easily and quickly an dno need to make wasted trips to the hospital.

SMS FOR INCREASED EFFICIENCY IN MONITORING PATIENT PROGRESS & CONDITION

REMINDERS OF MEDICAL APPOINTMENTS

Time and effort on the administrator's part has to be spent on calling and reminding patients of their appointments. Missed appointment slots could be a waste of time for the medical personnel who could be attending to another patient. With usage of an efficient automated SMS reminder system, wastage of time and human resources can be reduced if not resolved.

Benefits to Healthcare Institutions - Automation reduces effort on administrator's part this freeing up resources to deal with other matters, cost effective as compared to phone calls an dthere is no need for continuous redial if patients do not pick up calls.

Benefits to Patients - Message available when they are ready hence no missed calls, unobtrusive - mobile means of communication and has the option to reschedule when required.

SMS FOR PATIENT BOOKING/SCHEDULING

Appointment making can be done via SMS for automation and to free up limited resources for other pressing matters.

Benefits to Healthcare Institutions - Decreases long queues that can help resolve physical space issues, maximizes resources in terms of labour and time spent as compared to conventional scheduling and fuss free and easy to implement into existing system.

Benefits to Patients - Time saving as no need to queue or go through voice messages and coordinators to schedule an appointment, convenient as it can be done anytime anywhere and have the option to reschedule if the desired slot is unavailable.

SMS UPDATES ON PATIENTS IN CRITICAL CONDITION

Patients in critical condition need more care and attention. However, their family members may not have the time to watch over them round the clock. SMS updates can help set family members mind at ease while they go about their daily business as well as to alert them to the hospital should the patient's condition take a turn for the worse.

Benefits to Healthcare Institutions - Easy to implement into existing system and could be beneficial operationally as reduction in call-ins or physical visits from patient's loved ones due to their anxiety.

Benefits to Patients/Patients next of kin - Receive updates anytime anywhere, better peace of mind as it saves time and more uninterrupted rest for patients as less people would visit physically at inappropriate times.

SMS UPDATES ON RESULTS OF DIAGNOSTIC TESTS

There are some health test results that remain highly confidential and should still be made formally and in person to the patient. However, there are some diagnostic tests that can be released via SMS to increase operational efficiency.

Benefits to Healthcare Institutions - Less administrative costs and hassle as it can be sent out automatically and save on operational costs as compared to having to meet and release the tests to the patients physically in person.

Benefits to Patients and their Next of kin - Convenient as can be notified anytime anywhere, no need to queue physically for release of diagnostic test results and save on transportation time and costs (Free to receive SMS).

SMS FOR ENQUIRES ON PATIENT CONDITION

SMS updates can help set family members mind at ease while they go about their daily business as well as to alert them to the hospital should the patient's condition change.

Benefits to Healthcare Institutions - No need to entertain calls when busy, certain information can be automated and more secure as will be able to validate identity via mobile number.

Benefits to Patient's Next of kin - Can be notified anytime anywhere and better equipped to plan and attend to patient's condition.

Benefits to Patients - Receive better attention from a well informed caregiver and convenience.

SMS FOR GENERAL UPDATES & RELATIONSHIP MANAGEMENT

Happy patients and their next of kin not only results in a more positive networked environment for healthy living but also can bring referrals to the hospitals.

DIET & HEALTH TIPS TO PATIENTS AT HOME

Patients can be encouraged and reminded to practice healthy living habits and dietary tips at home that can help heal/alleviate on their illnesses.

Benefits to Healthcare Institutions - Better efficiency as handphone messages are usually more effective in conveying messages as they tend to be more personal and portable by nature an d automated system that is easy to implement.

Benefits to Patients and their Next of kin - Convenient as they can be notified anytime anywhere, no need to queue physically for release of diagnostic test results and save on transportation time and costs (Free to receive SMS).

SMS FOR ENQUIRIES ON PATIENT CONDITION

SMS updates can help set family members minds at ease while they go about their daily business as well as to alert them to the hospital should the patient's condition change.

Benefits to Healthcare Institutions - No need to entertain calls when busy, certain information can be automated and more secure as will be able to validate identity via mobile number.

Benefits to Patient's Next of kin - Can be notified anytime anywhere and better equipped to plan and attend to patient's condition.

Benefits to Patients - Receive better attention from a well informed caregiver and convenience.

SMS FOR GENERAL UPDATES & RELATIONSHIP MANAGEMENT

Happy patients and their next of kin not only results from a more positive networkd environment for healthy living but also can bring referrals to the hospitals.

DIET & HEALTH TIPS TO PATIENTS AT HOME

Patients can be encouraged and reminded to practice healthy living habits and dietary tips at home that can help heal/alleviate on their illnesses.

Benefits to Healthcare Institutions - Increased efficiency as handphone messages are usually more effective in conveying messages as they tend to be more personal and portable by nature and automated system is easier to implement.

Benefits to Patients and their Next of kin - Prevention is better than cure, healthy living can prevent complications of other diseases and can benefit from better health and lesser medical expenses.

SMS UPDATES ON HEALTH TALKS & WORKSHOPS

Sometimes general exercises may not be beneficial for people with certain conditions. For example, pregnant ladies should not engage in too strenuous activities. There may be certain targeted talks/workshops that will be beneficial for the targeted groups.

Benefits to Healthcare Institutions - Better efficiency as handphone messages are usually more effective in conveying messages as they tend to be more personal and portable by nature and automated system is easy to implement.

Benefits to Patients and their Next of kin - Prevention is better than cure, healthy living can prevent complications of other diseases and can benefit from better health which means less medical expenses.

GREETINGS FOR BIRTHDAYS & FESTIVE OCCASIONS

A step in fostering good relationships with the parties involved in the healthcare network be they patients, or caregivers at reasonable costs.

Benefits to Healthcare Institutions - One way to build up rapport that is not too costly and automated system that is easy to implement.

FEEDBACK & SURVEY

Quick, concise SMS questions that are fast and easy to respond (compared to long paper surveys) can be sent for feedback for the healthcare provider to improve on.

Benefits to Healthcare Institutions - Less cost intensive as compared to paper surveys. A page of printed paper costs about S$0.10 while SMS only costs about S$0.05, less administratve hassle in implementation, collation and collection of results, more environmentally friendly and possibly receive better response rates.

Benefits to those who are being surveyed - Less tedious then to fill in long surveys and more convenient and mobile.

HEALTHCARE CAMPAIGNS

Prevention is better than cure. Health campaigns can help to raise awareness about certain health problems and to take precautionary measures as needed. SMS provides a cost effective alternative to traditional modes of campaigns like print and media and is able to disseminate short, bite sized messages to the pubilc.

Benefits to the Healthcare Institutions - Cost effective way to run a campaign as compared to posters/brochures, more environmentally friendly, mobile phones can be more effective in raising awareness as it is a device that is personal that most people tend to carry with them where ever they go.

Benefits to message recipients - More awareness and effective as compared to posters/general advertisements on the streets, benefit from healthier habits that come with more awareness and knowledge and possibly prevent health issues which is better than cure.

SMS FOR MORE EFFECTIVE COMMUNICATONS WITHIN THE INSTITUTION

ALERTS FOR MEDICAL PERSONNEL

Medical personnel would need an alerting system for them to respond to emergencies. Using SMS alert with a 2 way messaging function would enable the medical personnel to respond on their availability.

Benefits to Healthcare Insitutitions - Cost effective, no need for additional device by using their own handphone, automated system that is easy to implement and promotes better visibility as medical personnel are able to respond.

Benefits to Medical Personnel - Convenient as no need for addtional device as using own handphone and the ability to receive alerts anytime anywhere.

Benefits to Patients - When response time to patient improves, patient will be able to receive medical attention quickly which resutls in better chances with recovery.

GENERAL STAFF NOTIFICATIONS

Important and concise information can be passed down on a general or departmental basis when necessary.

Benefits to Healthcare Institutions - Resources saved with automation can be channeled to other initiatives an easy to implement into existing system.

benefits to Staff - Receivable almost anytime anywhere and unobtrusive with the ability to read at own convenience.

SMS FOR ENTERPRISE IT SYSTEMS NOTIFICATIONS

At the heart of all enterprises is a reliable IT and network infrastructure. Network and systems availability is a critical function for any enterprise, from delivering internal corporate services, managing patient data to call centre operations and so forth. The IT support team needs to be informed immediately when there are critical events affecting the IT network and systems infrastructure.

Using SMS to deliver system and network alert notifications provides instant notification. This enables the IT team on increasing its response time and proactively solve potential problems before services and end users are impacted.

SENDQUICK SMS HEALTHCARE INSTITUTIONS

sendQuick SMS gateway is an appliance based SMS for healthcare institutions. 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 healthcare personnels and their clients alike.

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 TCPIP 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.
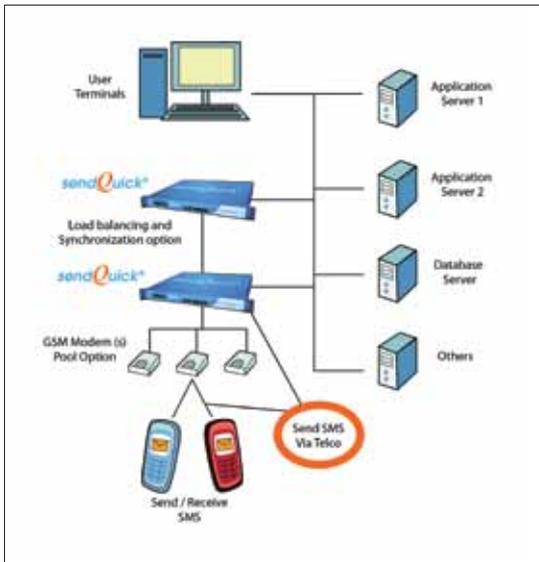
RETURN ON INVESTMENT (ROI) COMPUTATION

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

Assumptions: If the healthcare institution has,
- 10000 administrative letters (i.e. hospital bill notifications, health campaigns) to send a month
- Process/Handle 10000 calls per month (Incoming/Outgoing)
- Per SMS cost is S$0.05

Cost Savings on Communication with various Parties
i) Cost of sending a notice via normal mail: (10000 x S$2.00) = S$20000
ii) Cost of handling/processing a call in terms of man hours and phone bills: (10000 x S$2.00) = S$20000

Assumptions:
- 30% of the letters are replaced by SMS
- 30% of calls are diverted to SMS

Cost savings from SMS service per month:
i) (30% x 10000 x S$2.00) - (30% x 10000 x S$0.05) = S$5850
ii) (30% x 10000 x S$2.00) - (30% x 10000 x S$0.05) = S$5850
Possible cost savings in using SMS for hospital operations in the healthcare industry is S$140400 per annum.

CLIENT SUCCESS STORY

Alexandra Hospital is a public hospital with large numbers of patients daily and it is vital to manage the appointment system efficiently and accurately. On average, the hospital saw 300 patients a day at the Specialist Outpatient Clinics. Previously, one of the modes of sending out appointment reminders was through phone calls to patients made from the call centre. As the number of patients increased, this method not only resulted in lower productivity but also higher operational costs. After evaluation, Alexandra Hospital chose sendQuick Entera which could complement the existing internal systems as well as provide 2 way SMS appointment system.

After the roll out in February 2009, there was a marked improvement in patient attendance and a more efficient process for scheduling of appointments that is fully automated. Patients were pleased to receive timely reminders via SMS, which is less intrusive. Overall. Call rates in the call centres were reduced this translating into lower total operating costs. The results for Alexandra Hospital was so satisfactory that an affiliated hospital Khoo Teck Puat Hospital (KTPH) deployed the same system when it opened in March 2010. KTPH was built to serve the healthcare needs of more than 570000 people living and working in the north region. Being a larger hospital, the benefits of using sendQuick Entera was more marker, with greater cost savings and better efficiency.

"... 2 way SMS appointment reminder system is hassle free... Patients are not required to call back and wait to be served, nor are they restricted by our hotline's operating hours. Patients can reply to the SMS for confirmation or change of appointments. The fully automated system frees up our resources which translates to lower total costs for us" - Ms Ong Poh Suan, Assistant Manager, Operations Department, KTPH

Singapore Headquarters
TalariaX Pte Ltd
76 Playfair Road, #08-01,
LHK 2 Building, Singapore 367996
Tel: +65 6280 2881
Fax: +65 6280 6882
Email: info@talariax.com

Malaysia Rep Office
sendQuick Sdn Bhd
60B, Jalan Burhanuddin Helmi
Tmn Tun Dr Ismail 60000 Kuala
Lumpur, Malaysia
Tel: +60 37 727 4881
Fax: +60 37 731 9217
Email: sllee@talariax.com

US Rep Office
TalariaX™ USA
2967 Michelson Dr. Suite.
#G825 Irvine, CA 92612, USA
Toll Free Tel: +1 866 601 3392
Fax: +1 866 601 3392
support@talariax.us
Email: usa@talariax.us

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.