

White Paper

Building

SMS Enabled

Enterprise Applications

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According to Nielsen, smartphone adoption is projected to hit the 50% threshold by the end of 2011.

Enders Analysis predict that smartphone penetration will reach 75% by 2015, with Mobile Internet use set to make up 28% of total time spent online.

There are more than 250 million active users [50 percent] currently accessing Facebook through their mobile devices. People that use Facebook on their mobile devices are twice as active on Facebook as non-mobile users (Facebook official Statistics July 2011)

Building advantage through mobilisation

Businesses have long sought to gain competitive advantage by streamlining and improving communications with customers, staff and partners. The ubiquity of the Internet and the rise of Social Media technologies such as Facebook and Twitter have dramatically increased customer expectations of round-the-clock instant access to information and services.

Over the last few years, SMS Messaging has gained widespread acceptance as a viable business communications channel. Increasingly, businesses such as Banks, Airlines and Delivery Services are leveraging the instant, audited delivery capabilities of SMS to provide real-time information and services to their customers. The global reach of text messaging and the universal availability of SMS-capable handsets, combined with the cost-effectiveness of the technology have driven this rapid rise.

At the same time, ever-increasing market penetration of smart-phone devices has only increased the pressure on businesses to be accessible 24/7 - regardless of where the customer is or what device or communications medium they are using.

Businesses that thrive in the “multi-channel, always-available” world will be those that adapt to embrace these new technologies and allow customers to interact in the way their access mechanism of choice.

One of the key challenges facing IS managers is how to roll out a future-proof multichannel communications strategy to deal with this changing world, while at the same time delivering real-world solutions today. This paper discusses the use of SMS to provide instant-access mobile services in the context of such an overall long-term strategy.

According to Portio Research (January 2011):

- 6.9 SMS trillion messages were sent in 2010. SMS traffic is expected to break 8 trillion in 2011.
- 249 billion MMS were sent, in 2010.

Juniper Research (May 2011):

By 2016, A2P messaging will overtake person-to-person (texting) messaging, being worth more than US\$70bn.

- A2P messaging includes messages to or from an application to or from a large number of customers in financial services, advertising, marketing, business administration, ticketing, television voting etc.

Enterprise Use of SMS technology

SMS technology can provide an extremely cost-effective way of delivering value added Application-To-Person (“A2P”) mobile communication services.

Such services can range from non-time critical alerts such as marketing or information messages through to SMS-based transactions “What is my account balance” and real-time service alerts “Your flight has been delayed”. More complex examples include the use of SMS as a component of two-factor authentication and location-based fraud prevention services.

Integration of SMS delivery capability into existing business systems can be roughly categorised as loosely or tightly-coupled, depending on the complexity of integration and the level of modification required to underlying business systems and processes.

Loosely-coupled scenarios are typified by rapid deployment timescales, early return on investment and little or no modification to existing systems or processes. Examples include Email-to-SMS, Messaging Web Portals and Batch Message File processing services.

In contrast, tightly-coupled integration generally involves a non-trivial degree of development effort and potentially substantial changes to underlying business systems and processes. Often such projects include multiple delivery channels and span more than one business function. Examples include a bank implementing a strategic customer communications platform or an airline deploying a multichannel ticketing system.

O2 Business Text data
2011:

The average deployment
time for a Managed Text
'Email to SMS' service is
one to two days.

Email to SMS services are
typically used for
individual message
transactions. These
messages can replace the
original email message or
be sent in addition.

Email-to-SMS services

Often a user or automated application component will send a customer notification Email as part of a normal business function. This process can readily be extended to send an SMS Message. The SMS Message is initiated by sending an Email with the required content to an address of the form:

mobile-number@SMS-Domain

The receiving service authenticates the request and then formats and delivers the content as an SMS Message. Rules may be defined for stripping content inappropriate to an SMS Message, such as email footers and disclaimers.

Extended authentication and service configuration information can be supported through the use of Email X-Headers. Message delivery receipts are typically provided by return Email or published via an MI portal.

Batch Message File processing services support anything from 1 to 1 million messages in a single transaction.

Batch-file

Business processes and applications that are able to produce data extracts of contact mobile phone numbers can use this data to send large volumes of SMS Messages to these target contacts.

Typically a file is extracted from the data source – CRM system, marketing database or Excel spread-sheet - and then uploaded to a secure hosted Batch Messaging service by manual upload or via automated secure file transfer.

Typically, such services also provide online tools for mail-merge configuration, dynamic delivery monitoring control of message delivery rates. Delivery receipt information is returned as an “end of day” status file or published via an MI portal.

Tightly-coupled integration

Tightly-coupled SMS integration most frequently involves using one or more API technologies to deliver SMS Messaging services. The range of supported APIs varies, but typically includes SOAP, REST, XML-RPC, SMPP and other IP-based protocols.

Often, messaging capability is integrated at several customer touch-points within a business process. It is not atypical for a given process to use several different technologies during the lifecycle of a customer interaction. For example, consider a Bank integrating SMS Messaging as part of its current account offering. The process might originate the following SMS interactions:

- An initial welcome SMS Message sent to each new customer as they open their account. This message is sent via an automated batch file extract and upload process
- A daily automated Balance and Mini-statement “BAM” SMS Message alert sent by a SOAP API service
- A subscription-based share price alert system, where alerts are sent via a REST API, based on pre-defined parameters
- User-initiated Balance On Demand “BOD”. The user sends in a formatted SMS Message to a dedicated service address (typically a long or short SMS number). The request is validated, and the user’s balance information delivered by return SMS Message
- User-initiated Two-part authentication. When the user attempts to login to the Bank’s web portal, a time-limited SMS Message is sent to their mobile handset. The user types the contents of this message into their browser to complete the login procedure

- Fraud prevention. When the user attempts to use their payment card for a “large” transaction, a REST API method is called to silently “ping” the users registered mobile phone to check its location. If the location of the phone is not in close proximity to the transaction location, then a potential fraud is highlighted
- Periodic marketing or service messages may be sent via a batch file extract and upload process

Management Information

A key part of any business SMS Messaging application is the collection and analysis of message delivery information. Obtaining timely updates on message delivery enables businesses to monitor the efficacy of their customer communications and make appropriate improvements.

Management Information can be used on a per-message basis to update the originating source systems as to the completion status of the message. For example, if for regulatory reasons, a Bank uses SMS Message alerts to inform customers that they risk going into overdraft if they do not make a deposit by a certain time, it is important to record whether these messages are being delivered or not.

Data delivery information can also be used to spot longer-term trends in message delivery success. For example, if service messages regularly fail to deliver within their specified Time-To-Live "TTL", it might be that the business needs to review the message validity periods to achieve more effective delivery. Similarly, if messages sent to a given overseas territory or operator constantly fail or are rejected when submitted with an alphanumeric originator "Alphatag", it may be that further investigation is required to see if the regulatory authorities in that territory are blocking externally-originating SMS Messages from being delivered.

Hosting Options

To run a viable SMS Messaging service typically requires a substantial investment in hardware and support, in addition to setting-up and maintaining a potentially large number of commercial agreements with the various network carriers within the target territories.

For this reason, most businesses opt for a “Fully Hosted” SMS Messaging service, whereby the service provider is responsible for the platform investment and managing the commercial relationships with the terminating mobile carriers. Such an arrangement allows the business to concentrate on its core activities without the headache of managing the service. An additional benefit of outsourcing SMS Message delivery to a third-party is that businesses can often take advantage of economies of scale to obtain a lower per-message price than they might otherwise be able to get.

For some businesses with specific operational or security requirements, it may be more appropriate to run an on-premises or hybrid hosted solution, whereby some of all of the links with the network operators are run in-house. This type of solution may be appropriate where a business only needs to be able to send and receive messages within a single territory or where it is essential to have complete control over the solution.

SMS as part of a multichannel delivery strategy

While SMS Messaging can offer a large number of immediate benefits and can help a business get started with delivering a multichannel strategy, it is very likely that it will form only part of such an offering.

Given the rise of multiple forms of communications media that customers are adopting, it makes sense for businesses to implement a “define once, deploy on multiple channel” strategy. For example, by abstracting the user interaction at a business process level, it is possible for the same interaction to occur via SMS Messaging, Voice IVR, Smartphone application or Social media, according to the customer’s current circumstances and preferences.

Obviously such an approach is limited to a certain extent by the restrictions inherent in each technology, but these factors can be taken into account when defining the communications process.

For example, consider a sales-based organisation that wishes to collect real-time sales performance information from its field sales force. Information managers can use a web-based portal to define a ‘template’ to collect information from sales staff when they leave a customer or potential customer’s premises.

- If the user has a basic SMS enabled phone, then they can send a specially formatted SMS Message to a dedicated number. The message could include customer name, account number and potential value of sales. This message is parsed, the data contents checked and recorded, before being plotted on a real-time sales dashboard

- A smartphone user would open an applet on their iPhone, Blackberry or Android device. Rather than having to type in the customer's account number, it is selected from a pre-populated drop-down list of account numbers relevant to that user
- A Twitter user might compose a tweet in a similar format to the SMS message
- An IVR service can be used to input the account information using their fixed-line telephone keypad

The key thing about this scenario is that it is a single server-side application that is managing this data collection and analysis, regardless of which communications channel is being used.

Conclusion

SMS Messaging can provide an easy route to entering the multichannel communications arena. Although there are quick wins available through the deployment of loosely-coupled technology, the real benefits come when SMS Messaging is deployed as part of a well-thought out long-term strategy.

Management Information and proactively monitored delivery feedback can greatly enhance the effectiveness of such services and help businesses leverage maximum benefit.