



Text Messaging for Utilities Application Notes

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Background

Text messaging is for users of all ages. It has become a valuable and reliable tool for communicating real-time information. For marketers, it offers rich, targeted information over a medium with which more than 50% of mobile users interact on a daily basis. Given its universality, the public sector is starting to deliver new self-service campaigns that mitigate contact center congestion while further engaging the "texting" demographic. The Agent511 solution helps utilities reduce cost while demonstrating its commitment to serving the community.

What is text messaging?

Text messaging, also called Short Message Service (SMS), is a system operated side-by-side to the cell phone voice network (call SS7). The SS7 network is not Internet based and is offered by almost every mobile carrier in the world. A message is limited to 160 characters.

Who text messages?

Although text messaging is typically associated with the youth market (over 80% penetration in the 18-24 year old US market), more than 50% of American adults regularly text message. With over 250 million cell phones in the US, the target audience for text messaging applications is large. Interestingly, text messaging has crossed the age gap by connecting parents with their children.

In 2004, when broadband penetration passed 50%, the market for interactive services such as YouTube and eBay started to take off. Text messaging just hit this milestone and interactive text services are poised for significant growth.

“over 50% of American adults regularly text message...with over 250 million phones in use, that means a sizeable audience for public sector campaigns.”

Utility applications

Outage reporting and alerts

Customers proactively text message an **OUTAGE** report to Agent511 and/or subscribe to text messaging outage alerts. The system opts in subscribers over the web or mobile phone and is capable of dissecting OMS data files to alert subscribed consumers. Over the mobile phone, the subscriber must provide qualifying information such as account number or address unless this information has been previously registered.

Outage alerts are delivered at the time the outage is reported, at the time an ERT is known or has substantively changed, and upon restoration. The time and frequency of alerts can be programmed by the utility.

Billing reminders

Agent511 delivers a text message on behalf of eBilling when a payment is either due and/or overdue and can be programmed to deliver two-way payment authorizations in compliance with a work-out schedule. Because text messages remain on the handset unlike automated phone calls, the customer is reminded of the call to action.

Peak demand notification

Customers can be instantly notified of peak rates and offered the ability to throttle their usage via mobile phone. This service can be delivered either stand alone or in combination with smart grid technologies.

Mobile knowledgebase

The system intelligently acts upon free-hand text messages that describe commonly asked questions. Examples include: conservation, assistance, and autopay features. The system returns the highest scoring matches.

Unlike Google search, responses are tailored to both the utility and mobile phone.

Dispatch/notification

In cooperation with the utility's ERP, Agent511 dispatches service requests to the field and assigns completion codes. Text messaging cost-effectively replaces antiquated paging systems. For some dispatches, this mitigates the need for all field

workers to carry smart phones and laptops.

As an example, request A104387 to examine a pole #332 at 325 Main St., Midland can be closed by replying to the text message the number **100**, for more resources, **101**; and a comment, **102 pole cracked at base**.

Text to PC Chat

The mobile user and contact center may engage in a text chat session. The Agent511 web interface provides a medium for continually receiving text requests and responding.

The consumer joins a chat session by text messaging a unique keyword such as **CHAT**. The next available operator receives the request and engages in a text messaging chat session. Generally speaking, a single operator may attend to 2-3 chat sessions simultaneously.

The chat function may be integrated with the call center's computer telephony (CTI) system or functions stand alone. Text messaging chat is similar to web chat, however responses are restricted in length.

Text vs. E-mail

E-mail costs nothing to send and is easy to hijack—as such, it has become a cyber thief's best friend. Even with the best SPAM tools, e-mail offers an inconsistent experience. Text messaging, however, only requires a basic cell phone connection, thereby satiating the need for instant information anytime, anywhere. And further, it is not nearly as susceptible to SPAM as is e-mail due, in part to carrier restrictions.

Text vs. Interactive voice recognition

Text messaging provides users richer interactive information with the ability to retrieve content. In addition, text messaging works in noisy environments and avoids the sensitivity to voice accents which impedes the delivery of travel related services using interactive voice recognition (IVR). In general, many consumers frustrated by a missed IVR command, opt for the operator "O;" thereby mitigating its

value.

Smart Phones

Although new sophisticated Internet devices such as Blackberries, iPhones, and mobile PDAs have hit the market, text messaging works on virtually any phone on any network. Further, even the most sophisticated devices are limited by network speed, screen size, and the number of websites which work on the mobile phone. Text messaging is precise, targeted, and offers timely information.

Consumer's messaging cost

The cost for an unbundled text message is approximately \$0.20 for the major mobile carriers, \$0.02 in 250-unit bundles, and \$15 monthly for unlimited messaging. Alerts can be delivered using free to the end user (FTEU) which incurs no cost.

Text messaging services

Text messages are traditionally communicated between two cell phones, however, a couple of recent advances have bridged the gap between the text messaging networking and the Internet.

The most important development is the implementation of the common short code which is the text messaging equivalent of a website address. The short code (US) is a 5 or 6 digit number that is unique to the application provider. In the US, short codes are administrated by the CTIA, the wireless industry's trade group.

Once a short code is secured, the application provider must be interconnected and provisioned with every applicable mobile carrier. Unlike the Internet where content is generally available to all broadband subscribers, text short codes must be transported by the cell phone customer's carrier. This process is facilitated by the SMS gateway.

Carriers, in an effort to ensure the integrity of the text messaging network, require that application providers provide the following functionality:

- STOP—the ability for any subscriber to instantly opt out of any service.

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- **HELP**—the ability for any subscriber to get help from the application provider.
- **SERVICE TYPE**— the application must conform to the agreement between the carrier and application provider, including disconnects.

E-mail over SMS

Most US cell phone customers can receive and send e-mail over the text messaging network. This service is good for sending messages from Outlook to the cell phone. Unfortunately, most mobile carriers restrict the quantity and volume of messages using this technology making it unsuitable for utility alerts.

Architecture

Agent511 is a hosted service that is available to companies and individuals to create text messaging marketing campaigns. It is built upon a high-reliability software platform. The platform is comprised of databases, a processing engine, an interface to the SMS gateway, and interfaces to the utility's OMS, eCommerce, and eBilling systems.

Platform capabilities

Subscription manager

Customers subscribe to services either on the utility's website or on their mobile phones. For notification services, the customer is sent a confirmation message to his/her mobile phone. Likewise, if a customer terminates the messaging service on either the website or by sending STOP, the subscription manager processes the request. The subscription manager maps the mobile phone number to the cus-

tomers transformer number.

OMS and billing data processing

OMS data files are dissected and each subscribed mobile customer is matched to a transformer number to trigger the applicable message. A message may indicate the outage was reported, the status of the outage, including ERT, and when service is restored. The notification logic determines whether a message should be transmitted.

A billing alert can be created either internally by the eBilling system or by transmitting a data file to Agent511 to be processed in a manner similar to the OMS data file.

Messaging rules

The core of the Agent511 system is set of rules that dictate what actions should be initiated as a result of the trigger. A trigger may be internally generated by eBilling, OMS, or in response to an incoming text message.

IF (Δ ERT > 1 hour) send message to customer indicating ERT change.

IF (billing date+ 5 days) AND (no payment received), then send customer a payment reminder.

IF (incoming message = **OUTAGE**), determine customer and transformer, and notify OMS.

IF (incoming message = **FIND nuclear**), send customer a message with information about nuclear energy.

Each time a text message exchange or notification sequence occurs, the system records the event and the cell phone number

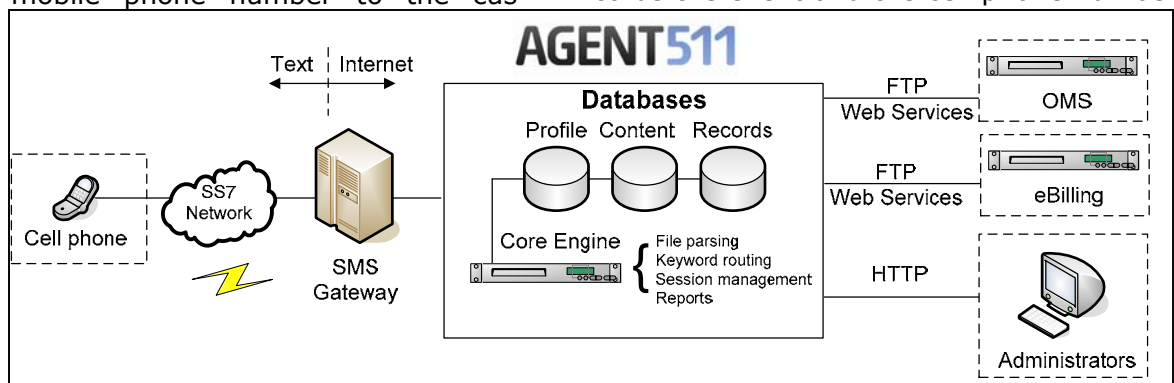


Figure 1 Agent511 utility platform architecture



Figure 2 Sample notification

so it knows what to do next. Agent511 supports this interactive functionality.

Incoming text messages are dissected and routed to the applicable action depending on the first word, called the keyword. As an example, a customer may text message **OUTAGE** <account number> and the system matches the mobile phone number to a customer account and transformer number.

Chat interface

The system routes text messaging chats to the next available operator's screen in combination with the utility's contact center's CTI system. A continuous session is maintained throughout the chat. This service can also be deployed stand alone.

Messaging

Agent511 receives and sends text messages to the mobile phone carriers through an SMS gateway. Incoming messages are dissected and routed.

The body of outgoing messages combine pre-defined phrases and real-time information. Figure 2 shows an example ERT message.

Security

Unlike an Internet address which can be easily "stolen," or spoofed by a cyber thief, a cell phone number on a text message

cannot be easily spoofed. As such, a cell phone user can access his/her customer profile using the cell phone number as his/her ID. Even if the mobile phone is lost, the unauthorized user is not offered access to sensitive information.

Return on investment

Typically, customers are currently offered three major ways to report outages and/or determine the status of an outage:

- Telephone with IVR/automated dialer
- Telephone live contact center
- Internet

During an outage, access to the Internet and sometimes, even the telephone phone, is compromised. As such, the mobile phone becomes a critical lifeline.

While the Internet delivers customer service at the lowest cost, during an outage, the contact center becomes the primary communications vehicle. IVR and automated dialer can be delivered typically at \$0.05 per call, and the average cost per "live" phone call is several dollars. As such, text messaging at a few cents per message is priced competitively.

An ancillary benefit of text messaging outage reporting and notification is the revenue generated by consumer uptime. When a customer shaves a few minutes off reporting an outage or returns home 30 minutes earlier after an outage to turn on the air conditioning, the incremental revenue is \$0.25-\$1.50 due to timely notification.

But moreover, at a time when energy costs are on the rise, and watch dog groups are noisier than ever, text messaging demonstrates the utility's commitment to customer service.

Conclusion

Interactive text messaging for public sector applications is gaining traction. With the proliferation of text messaging across the various demographics, it has become a valuable medium for communicating real-time information. As such, text messaging campaigns deliver instant customer satisfaction while reducing contact center operational expense.