

White Paper

Outage Communications:

Overhauling utility systems, call centres and communication channels to meet customer expectations

Executive Summary

With the increase in the frequency and duration of outages caused by extreme weather events across North America, customers are expecting utilities to keep them continually updated on the status of outages; especially the estimated restoration time. In fact, customers are requiring utilities to keep them informed via two-way communications using the Interactive Voice Recognition (IVR), call centre, social media, utility websites and modern communications devices (e.g. tablets, smartphones) and applications (apps).

In order to fully understand the impact on utilities as a result of customer expectations for timely and accurate information on outages, Kaihen commissioned an Outage Communications Benchmarking Study which included utilities from the United States, Ontario and British Columbia. The main purpose of the study was to gain insight into best practices for outage communications in three areas:

1. Outage Communications Systems
2. Call Centres
3. Outage Communications Channels

The results of the benchmark also provided valuable feedback to utilities, which participated in the study, on gaps in existing programs and changes that need to be implemented to meet customer expectations.

There were many best practices discovered by the benchmark and successfully implemented by utilities in the three areas.

The following is a sample of best practices discussed in this document:

- Inbound and outbound IVR solutions that reduce outage call duration and minimize the impact to the call centre.
- Storm centre landing pages on utility websites to enable customers to find consolidated outage information in one easy to access location.
- Call centre solutions (e.g. Mutual Assistance Routing System) to assist utilities during emergency situations when there is a large influx of calls and limited resources.
- Proactive communications (email, texting and phone calls) that result in a reduction in the cost per customer contact and minimize the impact to the call centre.



Utilities must be prepared to implement organizational changes in order to successfully transform outage communications programs. A key lesson learned and emphasized by many utilities is the creation of a cross functional team with representation from corporate communications, customer service, information technology, operations, metering and regulatory affairs for outage communications initiatives.

Utilities also noted the importance of measuring the success of outage communications programs in order to help channel programs in the right direction and to continuously improve them. Success measurements are discussed in this document.

While an optimal outage communications program may require a number of years to achieve, utilities can still realize immediate cost savings and improved customer satisfaction by implementing changes gradually over time. Utilities can also benefit by observing the many lessons learned from other utilities which have effectively overhauled their outage communications programs. The following provides lessons learned for ensuring a successful implementation:

- A phased plan, logically sequenced approach delivers the most effective solution;
- Customer satisfaction should be a top priority as well as the monitoring of customers' changing expectations;
- Executive and leadership buy-in is critical for timely decision making and to ensure collaboration amongst all departments;
- Consistent messaging across all communication channels is necessary in order to avoid legal and regulatory issues; and
- Documentation of business process changes must be comprehensive and testing integrated systems is a major requirement.



Introduction

Throughout North America, many utilities are overhauling their outage communications (OC) programs as a result of customer's expectations for outage information to be two-way, accurate and real time. The overhaul to utility businesses and operations is occurring in three areas:

1. Outage Communications Systems
2. Call Centres
3. Outage Communications Channels

The focus of this document is to examine the impact and changes occurring in each of these three areas, to share best practices of utilities that have implemented changes to their OC programs and provide recommendations on how to measure the success of changes to OC programs.

Changing Landscape

In North America, over the past eight to ten years, there have been significant storm events (i.e. hurricanes, tornados, ice storms, torrential rain) which have caused major damage to utility assets (e.g. distribution lines, towers, transformers, poles and entire substations) and resulted in large scale outages and blackouts for long periods of time. The impact of the storms to utility residential and commercial customers has been substantial. The severity ranges from customers having to dispose of food in the refrigerator to customers seeking alternative accommodations, and even the closing of major facilities such as businesses and schools.

As a result of the impact of storms and other outage events, which are causing longer duration and more frequent outages, customers now expect utilities to keep them continually informed on the status of any outage and, most importantly, the estimated restoration time (ERT). Today's customers are not satisfied with the traditional utility outage communications program where two way communications is not supported.

Customers are demanding proactive two-way communications with relevant, timely and accurate outage information being provided not only via the call centre and IVR but also through social media, utility websites and modern communication devices (e.g. tablets, smartphones) and apps.

The types of information that customers require during an outage include:

- When will their power be restored?
- What locations are affected?
- How many customers are impacted?
- Have work crews been dispatched to the affected area and is the utility working to restore power?
- What caused the power outage?
- What can customers do to cope during the outage?

Failure to provide the above information accurately and in a timely manner will result in customer complaints, create unwanted media attention, impact customer satisfaction negatively and may lead to possible regulatory investigations.

In the United States, utilities have faced multimillion dollar fines for substandard responses to major storm events. Some of the reasons cited for the fines include failure to perform adequate restoration, problems in deploying crews, problems in managing the outage system, problems with assessing damage, and a breakdown in communications with local authorities, media and customers.

A number of utilities have administered surveys as well as conducted customer interviews and focus group sessions to learn about customer expectations and to improve customer satisfaction during and after outages. The results from the research are as follows:

- Customers indicated that timely information on outages was critical for appropriate decision making.
- Customers felt that it was important for the utility to understand that even a short outage in duration was impactful.
- Being kept informed about what was going on during an outage made customers feel like the utility valued them.
- For large scale events, customers felt that utilities should proactively provide tips on how to prepare for extended outages.

Benchmark Study

Utilities participating in the benchmark study from:

**United States,
Ontario and
British Columbia**

Ranging in size from:

**30,000 customers to
7.2 million customers**

Kaihen has embarked on an Outage Communications Benchmarking Study to learn how utilities are addressing customer expectations for timely and accurate information for planned, and more critically, unplanned outages. A number of utilities from the

United States, Ontario and British Columbia ranging in size from 30,000 customers to 7.2 million customers voluntarily participated in the benchmark study. The study was designed specifically to gain insight into best practices for outage communications systems, call centres, and customer communication channels. The results of the benchmark identified best practices and provided valuable feedback to utilities on gaps in existing programs and changes that need to be implemented to meet customer expectations.

1. Outage Communications Systems

As a result of the recent storms, The National Association of Regulatory Utility Commissioners published a discussion paper in December about the characteristics that make Resiliency investments distinct from other reliability investments. They defined Resiliency from a regulatory perspective as “robustness and recovery characteristics of utility infrastructure and operations, which avoid or minimize interruptions of service during an extraordinary and hazardous event.” While ensuring resiliency is a key priority for many utilities, the importance of systems and back office readiness to enable outage communications is often neglected and should be a priority; since there will be occasions when service interruptions are inevitable.

Historically, utilities' systems and departments have operated in silos but outage communications require the complex integration of myriad systems and utility departments including customer service, operations, metering, corporate communications, information technology and regulatory affairs.

Today the core system during any power outage is the outage management system (OMS). Many utilities have some form of an OMS (i.e. manual paper based system, home grown system, vendor system). In some cases, these systems are not fully integrated with the other major outage communications systems of the utility. These non-integrated systems result in more complex manual business processes, inefficient work orders, and longer restoration times. Over the next two to three years, many utilities are planning to either upgrade or replace their OMS, which will significantly improve their outage communications programs.

The Customer Information System (CIS) is also an important system for outage communications since it retains and maintains customer records, contact information, and with the introduction of proactive customer communications by utilities, the CIS must maintain accurate email addresses and cell phone numbers to enable texting and emailing with customers.

Most utilities in Kaihen's benchmark study have implemented an IVR system which allows customers to report and receive outage information. Typically, a customer is required to provide either their phone number, address, or account number in order to be identified by the system and before being allowed to report or receive updates on outages. Some utilities have looked to enhance customer recognition by using more than one source for

identification in order to improve customer access to outage information, especially during emergencies.

As a best practice, some utilities have inbound IVR solutions with upfront bulletins which communicate the cause of the outage, ERT, crew status, and number of customers impacted. The solutions enable the customer to report an outage when the customer calls in and will even recognize if the customer has called more than once.

Outbound IVR solutions implemented by some utilities provide customers with the option to choose if they want a call back with ERT updates and after power restoration.

During planned outages, extreme storm events, extended outages and other abnormal events, utilities can also implement broadcast outbound IVR calls where a customized message is recorded by a senior staff member within the utility. The decision for a broadcast outbound IVR call is usually at the discretion of management.

Some IVR solutions do not have the option for the customer to speak with a live call centre representative, which is a source of frustration for customers seeking specific information. Access to a live call centre representative is a key requirement for outage communications.

Outage Communications System Integration

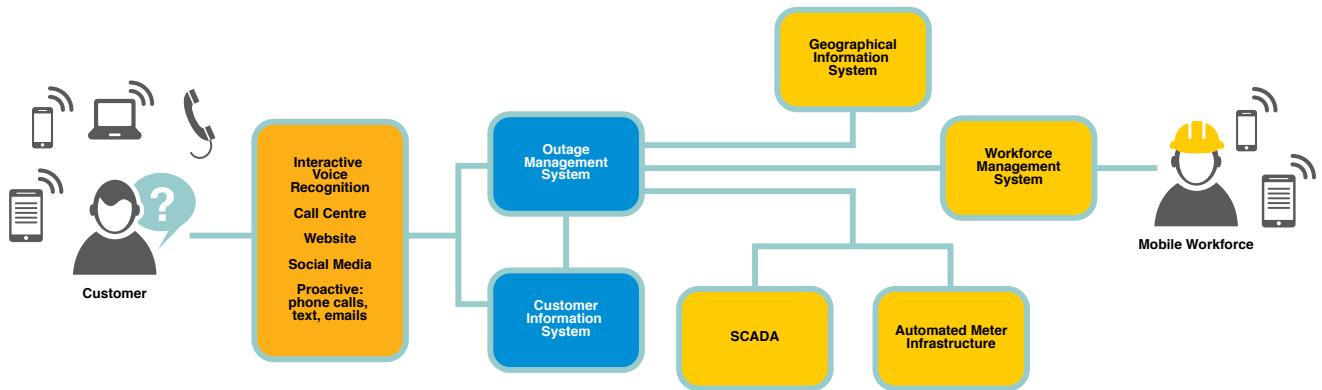


Figure 1: OC Systems

If all systems shown in Figure 1 are integrated effectively, outage calls from customers are received by either the call centre agents or the IVR system and outage information is transferred to and/or verified in the OMS.

The Supervisory Control and Data Acquisition (SCADA) and Automated Meter Infrastructure (AMI) can also receive specific locational outage information at the circuit breaker, switch, distributed sensors or other distribution assets. The outage information is transferred to the OMS and the utility may be aware of an outage before the customer has called.

Outage information is passed to the Workforce Management System (WMS) where field crews are dispatched to the outage location. The field crew may arrive at the location before or at the time the customer places the call to the utility.

Field crews leveraging mobile phones, laptops or tablets are able to provide real time updates from the outage location. The information that the field crews provide include:

- Status of crew
- Number of customers affected
- Cause of the outage
- Real-time ERTs
- Verification that service has been restored

Updates received from the field crews are then communicated to the media and impacted customers via website, social media, mobile applications, IVR, proactive calls, emails and texts.

2. Call Centres

The benchmarking survey indicated that call centres are the second most popular method of communicating outages to customers according to respondents. Approximately 70 per cent of the utilities operate their call centres on a 24/7 basis while call centre availability for the other 30 per cent was mainly during regular business hours; with the control room handling outage calls in some cases after hours.

In an effort to reduce the impact on the call centre during outages, inbound IVR solutions have been implemented in almost all of the utilities benchmarked, however only 57 per cent of these utilities actually provide a list of known outages on their IVR. The use of upfront messaging has been proven to dramatically reduce the impact on the call centre.

All of the utilities in the study have call centres that field outage calls but in terms of a best practice, only 15 per cent have dedicated call centre representatives that field outage calls on a 24/7 basis. The training of Customer Service Representatives (CSRs) to handle outage calls as well as dedicated account managers for large commercial accounts will improve customer satisfaction. For CSRs to be effective in handling calls, the call centre must be integrated with the IVR, OMS and the CIS.

All call centres in the study are on shore while staffing for unplanned outages varies among the utilities from third party support to corporate emergency support plans. An outsourced call centre in conjunction with an IVR will yield benefits to a utility especially during emergency situations. The utility's IVR can handle the majority of the calls if there is appropriate upfront messaging. This will result in the reduction of call volume to the call centre. Only calls with unusual or extraordinary circumstances would likely be handled by the call centre. It should be noted that a key benefit of the outsourced call centre is the ability to provide additional staffing immediately or as required.

Most utilities have emergency back up plans that they employ during storms such as giving employees, from other business units (billing, credit, collections), remote access to handle calls and using additional agents from a casual pool.

A best practice employed by utilities is the MARS (Mutual Assistance Routing System) program offered by Twenty First Century Communications. During severe outages, MARS allows a utility to access trained CSRs from other utilities. The utilities providing assistance will indicate how many CSRs are available and the telephone numbers to route customer calls. The CSRs will have access to all information including scripts via the MARS web interface enabling them to seamlessly provide customers with ERTs and crew status. MARS is a web based solution that leverages and communicates with backend systems and telecommunications infrastructure.

3. Outage Communication Channels

The most common communication channel used by utilities is their website. Every utility that participated in the benchmark uses their website to publish outage information to customers. Some utilities websites provide customers with the start time of the outage, the number of customers impacted by the outage, an outage map, the cause of the outage, ERT, and the last time the website was updated.

Some utilities also post unconfirmed outages (i.e. areas where the OMS has identified as possible outages, but are not yet confirmed) on their websites as well as field crew status. Once an outage is confirmed, the majority of utilities update the outage information on their website within two minutes of confirmation. It should be noted that outage maps are updated as frequently as every 15 minutes.

Storm Centre landing pages on the utilities' websites have become a best practice where outage information is consolidated in one easy to access location. The customer is able to find all of the regular outage updates along with links to videos, blogs, Facebook,

Twitter, letters to the media, preparation tips, safety reminders, responses to questions and comments, as well as messages from the President of the utility.

With the wide-spread adoption of mobile Internet access, customers are expecting utility websites to be mobile-friendly as a minimum requirement for outage communications.

Most utilities in the study indicated that their websites are smart phone friendly; allowing customers to view outage information. In the future, these utilities plan to enable the reporting of outages using smart phones.

Apps have also become a popular way to interact and offer an easy alternative to mobile-friendly websites. Figure 2 below displays the most popular communication channels for outages. Call centres and IVRs are the second most commonly used communication channel. Although the other channels (Twitter, Facebook, Instagram, email and mobile-friendly websites) are lagging behind call centre and IVR, they represent the greatest area of opportunity for utilities.

Unplanned Outages Communicated to Residential Customers

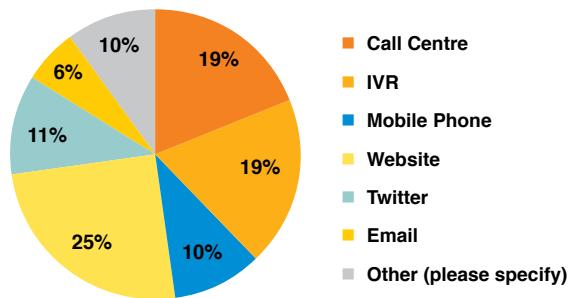


Figure 2: Unplanned Outage Communications

Leveraging social media channels to communicate outages has quickly become an important focus for utilities, since those affected by an outage are increasingly turning to social media to discuss and share information. Our research shows that social media customer adoption rates are very strong for the 25-35 year olds and surprisingly, the 55 plus age group demographic.

Social media conversations will take place during outages and increase depending on the severity of the outage. Utilities can choose to ignore these conversations or participate by providing important information to customers and gathering intelligence; which may be critical for the field crew.

The results from the benchmark were substantiated by very recent research conducted by Chartwell Inc., which showed that social media adoption rates amongst utilities are on the rise. Utilities are starting to embrace social media to monitor and report internally on conversations mentioning the utility, on top themes, trends, platforms with most activity, spikes and drivers of activity, sentiment analysis, customer questions and concerns.

The majority of the utilities in Chartwell's research plan to use Twitter (90 per cent), Facebook (85 per cent), and YouTube (82 per cent). Of those, 62 per cent have one employee monitoring social media while 23 per cent of the utilities have increased the number of employees engaged in these activities during outages.

Social media channels are evolving rapidly and some utilities are now exploring Instagram and the use of geotagged photos for receiving and providing outage information. There are potential regulatory, legal and safety issues which utilities must consider with this communication channel.

Proactive communication channels which include calls, emails and SMS (text messaging) are increasingly being used by utilities to reach customers affected by outages. Some utilities require customers to “opt-in” for proactive communications, while others have implemented an “opt-out” only option. Some utilities provide their customers with the option to choose either online, by the IVR, or through the call centre their preference (text, email, calls) for proactive communications. With proactive communications, customers can reply to messages as well as confirm power restoration. Proactive communications ensures

that the customers’ expectations for timely and accurate information are met.

Proactive communications has resulted in the reduction in the cost per customer contact as well as decreased the number of calls to a utility’s call centre during outages.

Majority utilities surveyed are planning to use:

 Twitter 90%

 Facebook 85%

 YouTube 82%

62% have one employee monitoring social media

3% of these utilities increase employees engaged in these activities during outages

Source: Chartwell Inc.

Organizational Impacts

Changing outage communications programs within a utility will not only impact systems but also the organization itself. Departments such as customer service, operations, metering, regulatory affairs and corporate communications are all impacted. Just as the technology to support outage communications must be integrated, so must the departments required to support the new outage communications processes. A cross-functional approach amongst departments requires alignment, acceptance, buy-in and understanding of the new business processes.

Training will be required on the new business processes and system functionality. Change management activities will aid in the transition and drive cultural change within the business. For example, traditionally field crews used paper work. The introduction of mobile phones, laptops and tablets for providing real-time updates on ERTs is a major cultural and behavioural change. Change management and proper training will help field crews understand the importance of real-time and accurate ERTs for the customer as well as the critical role they play in providing those real-time updates. This approach will enable them to transition into the new culture with ease and accept the change to their roles. Training will allow the field crew to understand how to use the mobile phones and laptops/tablets, what information must be entered (i.e. crew status and continuous updates on estimated restoration times) and why this information is important to the customer from a decision making and control perspective. Investing in internal education will enable the shift in the culture, which is necessary to meet the customers’ outage communications expectations and enhance business performance.

How to Measure Success of Outage Communications Programs

The success of the outage communications programs can be ensured only when their effectiveness is properly measured. The results obtained through such measurements will help channel these programs in the right direction and continue to improve them.

The success of these programs can best be measured by gathering feedback from the customers through customer satisfaction surveys. JD Power conducts detailed customer satisfaction surveys providing valuable insights into the effectiveness of the outage communications programs and how utilities compare to their peers.

Apart from JD Power surveys, utilities have also conducted their own surveys on a frequent basis, which helps them gauge the performance of their outage communications program and its evolution over a period of time. These surveys are generally bi-annual or quarterly. Post outage event surveys are a common approach also used by utilities as well as pre-determined frequent surveys. Post-event surveys are more important because the outage experience is fresh in the minds of the customers and the utility is likely to get a very accurate account of the customers’ experience and expectations.

Other measures have also been used by several utilities. One of the utilities in the United States recently decided to measure reduction in overall call volume and reduction in overall customer contact costs to quantitatively show the success of their outage

communications program. Another utility in Ontario has used reduction in the call duration as a measurement criterion. Their results showed that if customers are provided with the right upfront information by an IVR, the duration of most calls handled by the call centre will be significantly reduced.

Apart from the measures mentioned, another way of measuring success of outage communications programs is observing social media. A utility in the United States has created an internal Media Monitoring Team to monitor customers' interactions on social media, which has enabled them to understand top themes, trends, and most importantly, customer expectations.

Conclusion

While an optimal outage communications program may require a number of years to achieve, utilities can still realize immediate cost savings and improved customer satisfaction by implementing a phased approach with gradual changes to any one of the three areas:

1. Outage Communications Systems
2. Call Centres
3. Outage Communications Channels

A phased approach, combined with a careful review of lessons learned from other utilities that have implemented changes to their outage communications programs, will result in success.

In summary, the following are lessons learned from leading utilities that have effectively overhauled their outage communications programs:

- Start with an outage communications Strategy that looks at the overall outage communications program rather than a shotgun approach to fix deficiencies;
- Make customer satisfaction a top priority;
- Create a cross functional team with representation from operations, metering, corporate communications, regulatory, IT and customer service to enable an end to end perspective;
- Ensure that there is executive and leadership buy-in for timely decision making and to ensure collaboration across all departments;
- Business process changes should be well documented and consistent;
- Internal training and communications to facilitate staff buy-in of the initiative is critical. Managing organizational impacts are just as important as the technology and business process changes to achieve outage communications;
- Provide consistent messaging across all communication channels in order to avoid any potential legal or regulatory ramifications;
- Integrate and test the myriad systems required in outage communications; and
- Keep abreast of customers' changing expectations.

This document is designed to educate and inform utilities about the best practices for outage communications in the industry. Kaihen will continue to gather information through its benchmark and disseminate best practice information among utilities. Kaihen will offer free participation in its benchmark study to North American utilities for a limited time. Kaihen keeps all individual utility results from the benchmark confidential and only publishes aggregated results. To partake in the benchmark, please contact:

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Please visit us at www.kaihen.ca/benchmarking-study/

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About Kaihen

Kaihen helps electric, gas and water utilities prepare for the kinds of fundamental business changes that improve operations and customer service.

Our name is a word meaning change, or innovation, or transformation. It embodies everything we do for our clients.

Our core competency is business readiness—ensuring that our clients' people, processes and systems are well-prepared

to adopt the change we help to implement. And we do so by managing projects, designing and improving business processes, training users, solution testing, and implementing powerful change management initiatives.

Kaihen's offerings revolve around three key areas of our clients' businesses: Smart Grid Strategy & Implementation; Customer Operations & Systems; and Acquisition & Consolidation.

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