

A Brave New World of Data Sharing Between Utility Companies



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Facing increased outages, utility companies and first responders need collaborative data-sharing tools that enable situational awareness.

If you've ever experienced a power outage, you know how inconvenient they can be — and unfortunately, they're on the rise. The Uptime Institute's 2019 <u>Global</u> <u>Data Center Survey</u>, which asked nearly 900 data center operators and IT practitioners about the state of the industry, exposed a discouraging increase in power outages last year. The number of infrastructure outages and "severe service degradation" incidents grew by 6 percent.

These increased outages are no coincidence; many of today's utility providers face an uphill battle. For instance, the electric grid, built in the '50s and '60s, is rapidly reaching the end of its lifespan, and infrastructure across the nation has become more vulnerable to failure. An increase in volatile weather events like hurricanes and blizzards has meant more damage to utilities, causing financial damage and disruption.

These utility failures are all too common. In 2017, <u>Eaton's Blackout Tracker</u> Annual Report recorded 3,526 annual energy outages across the country. Data from the <u>Energy Information Administration</u> showed that when factoring in the impact of major weather events, the average service interruption lasted around eight hours. But beyond the inconvenience, many forget to consider the danger of utility failures. When such outages do occur, it's not just utility <u>field crews</u> who need insight into the issue. Emergency personnel and disaster response teams face especially dire circumstances when critical utilities are down.

For the safety of citizens around the world, utility companies need to be prepared to help response teams deal with these outages. Utility companies need a disaster response solution — and data sharing could be the answer. When such emergencies occur, a lack of visibility can slow repairs and even put lives in jeopardy. But with the right tools, better awareness is possible. To protect the public during increasingly common energy outages, utility providers and response teams need shared platforms for real-time, seamless data insights.

The Urgent Need for Utility Data

There has long been a lack of centralized data for utilities. Maps of such data, when they do exist, rarely show real-time or multifactor data. Basic online tools may help individuals see neighborhood outages, but they aren't designed for <u>emergency response use</u>. Piecemeal, proprietary information doesn't suit the real needs of today's companies, customers, and public safety teams. More robust data sharing could help improve response times and form better strategies to save lives and prevent further damage.

Recent years have provided some powerful examples of what's at stake. <u>Hurricane Harvey</u> — which caused some \$180 billion in damages — led directly to the death of 82 people. About a quarter of a million customers spanning several utility providers were <u>without power</u>. One the other hand, at least <u>one man was electrocuted</u> in floodwaters where the utilities had not been properly shut off. In such situations, it's critical that all relevant utility providers and emergency teams have comprehensive, shared visibility into the situation at

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hand. What's more, that capability must already be in place — by the time the storm hits, it's too late.

Various types of utility companies and their neighboring providers need to be able to exchange data for the public good. But other key decision-makers could also leverage this data, especially <u>first responders</u> and emergency officials. Local and state government entities, as well as the Department of Energy, Department of Homeland Security, and FEMA, need to have timely access to outage and utility information. All these entities need to be able to make time-sensitive, informed decisions about how to deploy resources within communities.

For these key stakeholders, data sharing at its best has the potential to transform their situational awareness. Relevant utility information could include electricity, water, gas, cell service, and more. <u>Emergency response</u> <u>teams</u> can achieve better outcomes if they have realtime insight into current power outage statuses, road and transportation information, the weather forecast, and current storm damage.

POLICE

From Siloed Data to Shared Data

Traditionally, power companies have kept tight control over their data. After all, data is valuable for making investment and planning decisions, and they may have concerns about competition and customer privacy. As noted, this lack of data leads to a concerning lack of visibility for public safety officials. But siloing data may also end up harming the utility provider. They may be running up unnecessary costs without the pinpointed insights they need for deploying resources. They may also fall behind in terms of technological innovation, as relying solely on internal resources means they are rarely poised to leverage their data in innovative ways.

There are signs that these data silos are opening up, whether or not utility providers are ready. In 2011, the U.S. Department of Energy created the <u>Green Button</u> <u>program</u>, which allows electricity customers to view data from their smart meters and even share that data with third parties. More recently, in 2014, the White House Office of Science Technology and Policy introduced the <u>Outage Data Initiative</u>. This initiative encouraged utilities to standardize data and platforms for use by neighboring utilities, emergency responders, and the public.

At the same time, the latest utility technologies support a more integrated and open data system. For instance, according to the Institute of Electrical Innovation, grid modernization efforts mean that there could be around <u>90 million smart meters</u> installed in the U.S. by 2020. <u>Smart grid</u> is the electrical grid of the next generation, which can enable the integration of information around power quality, real-time pricing, demand response management, and more.



Meanwhile, smart tech like <u>remote fault indicators</u> and intelligent switches are steadily replacing old mechanical infrastructure. Deploying these remote, low-power sensors can provide highly granular and real-time data about outages and issues. <u>Drones</u> are beginning to be used for performing surveillance or other previously manual tasks, monitoring danger zones for current conditions, and mapping relevant obstacles or vegetation. Augmented reality is beginning to be put to use in visual overlays of grid equipment and repairs in the field that require complex instructions. If utilized correctly, all this new data has the potential to empower utility response and emergency services well beyond what has previously been possible.

Building Situational Awareness through Data Sharing

In practice, shared utility data can play a critical role in a range of scenarios, from everyday outages to natural disasters. For instance, granular data regarding electric outages could help first responders know exactly which areas need their support, reducing response time and conserving resources. After a major disaster, shared information on electric, water, and cellular reception could help emergency services prioritize their actions — for example, restoring energy first so that electricity can support other services. In emergency situations, this information could be the difference between life and death.

With the right technology in hand, data sharing can optimize situational awareness, offering stakeholders and teams a comprehensive and current overview of what is happening, while it's happening. Data moves out of silos and into action. Of course, this kind of situational awareness isn't a given — actionability relies on specific capabilities, including the following:

DATA AVAILABILITY

Effective response depends on data collection,

presentation, and sharing. If the necessary data is unavailable, situational awareness will be compromised. This remains a major problem even for key players like government officials. Scott Sternfeld, CTO of Agile Inclusion, Inc., <u>notes</u> that the federal government is forced to use "screen scraping" of utility pages to aggregate outage data, which limits the nationwide view to just 85% of potential data. Both small and large utility companies need to ensure their data is sufficiently complete and shareable, which may mean outsourcing the task to digital platform innovators.

DATA STANDARDIZATION AND INTEGRATION

Utility data may exist in any number of formats including formats that are not machine-readable. But as long as data meets some basic specifications, standardization could occur at either the software level or the utility provider level. For instance, utilities are increasingly following a <u>Common Information</u> <u>Model standard</u> for reporting outages, based on the International Electrotechnical Commission's guidelines. On the other hand, using the right APIs, a





platform could actually incorporate a range of data types into a centralized system that can then be shared between entities.

REAL-TIME DATA

Historical data can be useful for understanding trends and predicting future capacity levels. But only realtime data can help with outages that are occurring at the moment. When a hurricane hits, current information on affected areas can help responders hone their focus, which in turn can help minimize damage and save lives. Real-time data sharing can include targeted alerts, which communicate critical changes in data points to the appropriate individuals or teams as soon as the changes occur.

COMMON OPERATIONAL PICTURE

Teams working in coordination need to be able to see the same data in a clear, updated display, even if they are working remotely. In fact, many utilities do already present basic outage or service information in the form of online maps. However, these maps are limited in their usefulness if they present stale data, lack detailed graphics, are not mobile-friendly, or otherwise fail to support what teams need to take action. Real-time, dynamic maps have the potential to be invaluable to response teams, especially if they display multiple utility types, weather fronts, traffic jams, and critical alerts. The key is that the operational overview is shared by all relevant team members in the field, so everyone can make decisions based on the best available information.

COMMUNICATION AND ALERTS

Data is <u>more effective</u> if it is linked to clear messaging or communication channels. If the data is for field crews, it's important to allow those teams to have discussions linked to particular tasks or events. Discussions may even bridge utility crews, EMS, police, and government entities. Overall, supporting coordination, transparency, and urgency around shared data can speed up efforts and improve results.

Driving Innovation with Utility Data

The future depends on utility data sharing. With the situational awareness that data sharing enables, utility companies and emergency response teams can better respond to disruptive — and dangerous — outages. What's more, better data sharing also helps entities work in advance to innovate, upgrade, prepare, and prevent outages as much as possible.

But not all data sharing is equally effective. Utility companies need to go beyond simple online maps and choose purpose-built tools that enable situational awareness and real-time teamwork. When the storm hits, using an online database won't help field service teams. Response personnel need to be able to answer key questions, prioritize their actions, and make immediate decisions.

For that, you need a digital tool designed with workstream collaboration in mind. Coolfire Solutions can provide the technology and expertise you need to quickly develop, design, and deploy a truly innovative utility-sharing platform.

