Never Waste a Crisis: Reinventing Utilities for Resilience

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In business, we loosely use the phrase "keeping the lights on" to indicate the bare minimum required. Yet in times like these, utilities have gone to extraordinary lengths just to ensure such basic necessities for their customers.

Even though a health crisis of this magnitude may be unprecedented, utilities at least know that at some point, they will likely contend with a natural disaster of some kind. Thus, under the direction of their crisis teams, many utilities have been able to react quickly to set up confinement command centers and institute a roster system to operate effectively with maybe 30% on-site staff, while the rest work from home. They have also been able to ensure paychecks to their workers and they're helping their hard-hit customers by halting disconnections for non-payment. While utilities have disaster mitigation in their DNA — given the centrality of their services and the potential impact caused by storms, wildfires, and seismic events — they also recognize the situation is different this time around. For one thing, we might all have to weather this particular storm for a longer duration.

In this crisis, utilities have been impacted across several major areas. Capital projects are being reprioritized and deferred in some cases because of stressed cash flow and supply chain issues. There is the potential for service disruptions and an increase in deferred payments, heightened cyber threats, and the risk of contagion in control centers and among the field force.

Impacted areas for major utilities

Service continuity
Work-from-home not possible for field force; all non-critical maintenance/upgrades deferred

Labor
Employee safety at risk, change of working protocols, high employee churn/absenteeism

Security
Cyber and data security issues due to increased cyber attacks arising from remote connectivity

Pandemic impacts on utilities

Customer service
High volume of customer queries, poorly staffed call centers; all non-essential service requests abandoned

Financial
Deferred payments, decline in demand, drops in prices; high-cost thermal producers at risk of closure

Disaster response
No backup or spare capacity to manage other disasters: storms, wildfires, earthquakes, etc.

Supply chain
Disrupted cap-ex project development (EVs, wind, solar) due to supply issues with equipment, spares, fuel

To mitigate these negative impacts, there are multiple solutions utilities can leverage. At TCS, we broadly organize them under three key intervention areas:

- **Operational continuity:** Ensure seamless operation of power plants, maintain grid stability, manage billing and payments without disruptions or outages. Ensure cyber and physical security.

- **Staff safety & training:** Provide for worker safety on- and off-premises. Enable remote working; monitor and govern employee activities. Cross-train workers and ensure worker retention.

- **Customer service:** Address customer queries and complaints. Disseminate relevant information via conventional and digital channels. Triage and manage service requests from commercial, industrial and retail customers.

1. Ensure Operational Continuity

Utilities have done a commendable job in delivering essential services even in some of the worst affected countries like Italy. Cloud migrations have helped ensure operational continuity and remote access to operations and maintenance data. Utilities already employing enterprise data lakes in a cloud environment are reaping the dividends during this crisis. Additionally, collaboration tools — such as annotation-embedded video conferencing — can enable remote collaboration between executives in field and subject matter experts working from home. Remote and asynchronous collaboration can also help with contactless shift turnovers, minimizing the use of paper — a potential vector of coronavirus infection and a leading cause of siloed information.

Augmented and virtual reality (AR/VR) can be leveraged to assist maintenance engineers with real-time asset information and maintenance insights from enterprise asset management systems. But these solutions need to be fortified with a robust IT/OT cybersecurity infrastructure, given the increasing frequency of cyber attacks. In the longer term, as utilities seek even more robust solutions for future crises, leveraging the power of artificial intelligence and machine learning can enable diagnostic, predictive and prescriptive analytics to gradually move towards more autonomous operations.

2. Enable Staff Safety & Training

With COVID-19, the workplace protocols have changed to prevent contagion in critical locations like control rooms. This can be enabled by deploying lidar-based systems (essentially, radar that uses laser lights instead of sound) to monitor social distancing between staff and issue alerts if people get closer than the recommended 1-meter (World Health Organization) or 6-foot (U.S. Centers for Disease Control and Prevention) distance. As no images or personal data are captured or stored, such a solution

does not violate GDPR requirements. Mobile is a versatile, quick-to-deploy medium for many use cases, such as keeping track of employees and vehicles, for access control, and as a platform for augmented reality apps – in addition to communicating organizational updates like information of COVID hotspots in a service area. To better monitor workers and ensure their safety, wearables like smart helmets, watches and vests can also be used.

On the employee training front, if (for example) just a third of the workforce reports to on-site duty, it becomes imperative for them to be trained with diverse skillsets. Immersive training with VR is a viable, effective option to quickly retrain utilities staff in lean periods.

3. Enhance Customer Service

A high backlog of customer queries and the suspension of service requests can severely hurt customer satisfaction levels. This can be mitigated by leveraging AI for contactless customer service centers with voice- or chatbot-based self-care. Omnichannel, cloud-based service centers already offer skills-based routing, real-time and historical analytics, and intuitive management tools — all with "pay-as-you-go" pricing. The COVID-19 pandemic is expected to be a longer-term or recurrent phenomenon compared to most disasters or crises utilities face, and service requests can't be deferred indefinitely. Hence, AR/VR-based remote collaboration tools can be used to conduct energy audits and help install energy-saving devices, roof-top solar panels, EV charging stations and more, with limited field staff supported by remote expert assistance.

Utilizing a Crisis

While this coronavirus has been ruthless in impacting utilities along with other industries, it has also been ruthless in cutting the red tape in decision making. While no one would have wanted this situation, it is the situation with which we are met. Utilities executives must seize this moment and take decisive action— to remain operational and continue a trajectory of transformation during the current crisis, to create more resilient operations for the inevitable future crises to come, and to be positioned for the opportunities that arise out of any crisis if we know where to look.

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