COMMUNICATIONS DEPENDENCIES CASE STUDY: NASHVILLE “CHRISTMAS DAY” BOMBING

EVENT SUMMARY

An explosion in front of a commercial communications facility on December 25, 2020, caused damage to the structures in the immediate area and caused consumer telephone and internet outages, as well as 911 outages as far as Alabama and Kentucky. The 911 outages impacted some centers for over a week.

In the early morning hours of December 25, 2020, residents of downtown Nashville, Tenn., began calling 911 to report the sound of gun shots. When officers arrived, they located a recreational vehicle (RV) parked in front of a commercial communications building playing a pre-recorded message for residents to evacuate the area with a countdown to an explosion. As officers began to evacuate the area, the RV exploded. The explosion caused a fire within the building, as well as flooding on the first and second floors following two water main breaks. According to a source familiar with the incident, it disrupted about 170 public safety answering points (PSAPs) in the immediate and neighboring areas, and as far as Kentucky and Alabama. Telephone, data, and internet outages were seen as far as Atlanta, Ga.

PSAPs began notifying residents of the outages and provided alternative numbers using social media, news outlets, AM/FM radio broadcasts, and other means. Residents were also encouraged to use Hub Nashville, an online dashboard that was monitored in real time to request law enforcement assistance. Officials even suggested going to the nearest police or fire station if they were unable to get through to 911. Other PSAPs reported additional problems too; by 7:00 p.m. on December 25, Smyrna, Tenn., reported their phone lines were working, however, callers would need to provide their names and locations immediately as it wasn’t available to dispatchers.

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2 Ibid.
The response to this explosion required partnerships from local utility companies, local-level public safety agencies including PSAPs, local and federal law enforcement agencies, multiple communications service providers, local government representatives and county code enforcement, and regional healthcare facilities.

The building was considered a crime scene, keeping technicians from entering the building to restore services. At 5:00 p.m. on the day of the explosion, the service provider reported that they had “rerouted significant traffic” from the Nashville facility and they had deployed multiple cell sites that were being delivered to the area but they were facing “logistical challenges.” Due to the nature of the incident, the service provider increased security at all of their facilities nationwide in preparation for additional attacks, though, none were reported. Further difficulties arose after a fire rekindled in the building, causing an evacuation, and again when additional damage was discovered near the building’s power connections, causing a delay in power restoration to critical infrastructure. According to one report, the service provider had deployed temporary cell towers and disaster trailers across the region to assist with wireless network and consumer broadband services restoration. Nashville Police Department reported that their radio communications were not impacted, citing their Primary, Alternate, Contingent, Emergency (PACE) method as their redundancy plan.

Commercial services were restored within three days and by January 1, 2021, the last of PSAP services returned to normal operations. Even though the building had suffered significant damage, FirstNet reported that their infrastructure was not damaged in the explosion. However, following two water main breaks, their onsite generators flooded causing an outage of less than five hours.

The service provider began restoring services. FirstNet was able to provide first responders with services within hours to ensure responders could communicate effectively during this complicated incident. The effective coordination between first responders, commercial service providers, government officials, PSAPs, and public works agencies contributed to the full restoration of services.

LESSONS LEARNED AND KEY TAKEAWAYS

Reliance on a Single Commercial Communications Provider

The impacted service provider produced much of the voice, data, and internet service in the region. The outage impacted local and regional PSAP operations, impacted hospital communications, civilian communications, and even commercial business operations.

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Communications Dependencies Case Study: Nashville “Christmas Day” Bombing

Key Takeaways

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<th>Local and regional agencies relied on a single service provider for their emergency and non-emergency operations</th>
<th>✓ Work with communications vendors to establish network redundancy and consider a multi-vendor redundancy plan&lt;br&gt; ✓ Consider utilizing alternate communications during outages, such as land mobile radio or satellite internet&lt;br&gt; ✓ Place communications switches in geographically diverse areas&lt;br&gt; ✓ Require redundancy at known single points of failure for 911 systems&lt;br&gt; ✓ Coordinate with communications providers to understand the provider’s routing and resiliency practices to develop solutions for short- and long-term outages</th>
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<td>Network congestion impacted the ability to complete cellular and landline calls and some responders relied on priority services accounts to complete calls</td>
<td>Establish priority services accounts—including Government Emergency Telecommunications Service (GETS) and Wireless Priority Service (WPS)(^{14})—for responders and vendors to ensure the ability to complete calls during times of extreme network congestion</td>
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<td>Local hospitals used a secondary communications provider for their hot spots and backup phones to ensure staff could remain connected</td>
<td>Establish communications redundancy by implementing secondary or even tertiary communications backup plans</td>
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<td>Land mobile radio remained a consistent and reliable form of communication while others were unavailable</td>
<td>Establish multiple backup systems for power (e.g., generators and battery power) and communication (e.g., buried fiber lines or other wireline connections, microwave backhaul)</td>
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<td>The service provider used a mass notification platform to communicate outages to PSAPs; however, some centers did not receive the alerts because of damage to the transmission links(^{15})</td>
<td>Establish communications redundancy by implementing secondary or even tertiary communications backup plans</td>
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Reliance on Commercial Power and Generator Backup Power

The company’s pre-planning had accounted for a power outage by providing backup generators. However, a cluster of interdependent and cascading effects delayed response and recovery efforts.

Key Takeaways

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<th>Communications outages were a direct result of commercial power outages; while backup generators were in place, they were flooded and unusable</th>
<th>✓ Work with commercial electric partners before and during an incident to identify and understand power resiliency weaknesses&lt;br&gt; ✓ Consider diversifying generator and backup power locations throughout properties&lt;br&gt; ✓ Harden power infrastructure from outside influences, such as flooding&lt;br&gt; ✓ Utilize alternative power sources and flexible power routing options</th>
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<td>The service provider had personnel and equipment available onsite to restore backup power; however, the building was deemed a crime scene, and personnel were not permitted to enter</td>
<td>Consider enhancements to generator location, capability, and resiliency</td>
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<td>Responders and commercial providers had pre-planned for these events, though had not planned for a series of related incidents</td>
<td>Consider enhancements to response plans, including frequent exercises for gray and black sky events</td>
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\(^{14}\) Information on Cybersecurity and Infrastructure Security Agency Priority Telecommunications Services is available at https://www.cisa.gov/about-pts?msclkid=64b576e7c0a911ec8338c592d0722228.  