WHITE PAPER

Specialty Lines Modernization

POTS migration for safety, security and functional needs

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Abstract

Many businesses and locations rely on legacy telephony for various specialty lines that can be critical for safety, premise-security and business-continuity systems.

Of the approximately 32.5 million POTS lines still in use today[1], millions are used for:

- Fire panels ensure that fire-detection systems alert emergency-response teams.
- Elevator phones connect people stuck in an elevator to help.
- Freezer and refrigeration units connect to full-time monitoring to help protect inventory and investments.
- Security gates and doors monitored for intrusion keep premises and personnel secure.
- Fax machines transmit mission-critical communications.
- Out-of-band network management systems enable remote support when primary connectivity is down.

For many years, you did not need to think about those lines, they just worked. But now the FCC has deregulated analog telephony services and legacy POTS lines are becoming cost prohibitive to manage and maintain. This trend will accelerate as more businesses disconnect from POTS, distributing the cost burden across an ever-shrinking customer base. What is your next step? It is not a question of whether to make a change but how and when.

This paper takes on the perspective of an enterprise that has existing fire alarm panels, elevator emergency lines and other non-voice applications connected to a traditional POTS system and is assessing "What's Next?".

Many businesses assume that if they are moving their business phones to VoIP then they can also move their specialty lines, but most fire alarm signals used today employ a specialized form of data transmission that is incompatible with VoIP. Industry standards for fire alarms and elevator phones also require a secondary communication method.

Meeting the NFPA 72 and ASME A17.1 regulations is a minimum[2], but what solution performs most reliably for the most predictable cost?

We propose a basic framework to help inform the customer and make recommendations by exploring the following considerations:

- Technology
- Implementation and management
- Cost
- Visibility and reliability

1. FCC Voice Telephone Services Report 06/31/21
2. NFPA (National Fire Protection Association) 72 standard for fire alarm and signaling codes and ASME (American Society of Mechanical Engineers) A17.1 standard for elevator codes

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Technology

When considering how to replace POTS specialty lines, the first step is to investigate the replacement technologies available. Most solutions utilize internet or broadband for the primary communication method with cellular service for the secondary method.

When evaluating different solutions, keep the following in mind:

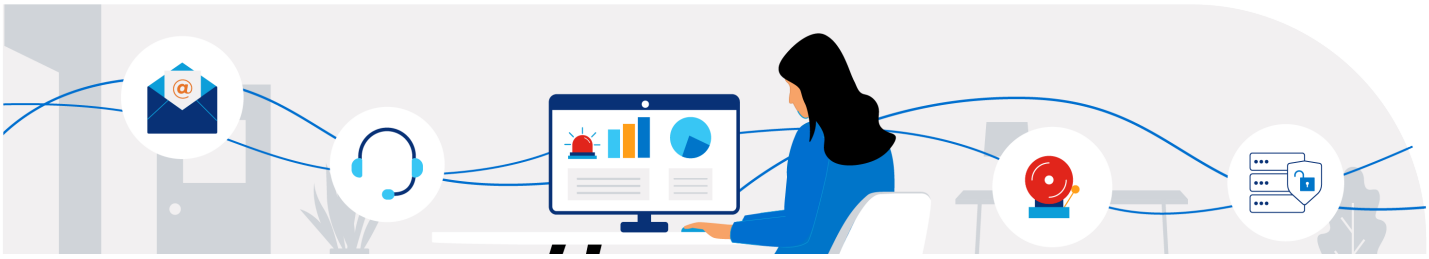
- Does the solution offer broad support for legacy protocols such as Contact ID, Security Industry Association (SIA), 4/2, Bosch Remote Programming Software (RPS), Honeywell Compass and others? Or does it rely on a cloud proxy service for legacy protocol support?
- Does it use equipment designed specifically for latency-sensitive applications?
- What secondary cellular carrier(s) are supported? Will that meet my company's needs at all locations? Is failover to a different carrier automatic and fast?
- Is the solution scalable and future-proofed for Internet-of-Things (IoT), 5G and other applications?

If you have multiple locations, do your fire panels use different protocols? This could happen if you acquired or rented buildings that already had a fire panel in place, the fire panels were installed at different times, or because of different fire codes. If the POTS replacement solution does not directly handle your fire-panel protocol, then cloud proxy services might be used to handle legacy protocols, but typically at the cost of added latency. The better approach is a solution that can handle the fire-panel protocol natively without intermediate processing.

Cellular signals vary across the country and across time. Typically, it is most economical to use the same plan at all your locations, but that might not be possible if your specialty-line solution only supports one carrier and that carrier does not provide service at all your locations.

Your cellular signal can also be affected by new buildings nearby, weather and usage, so the signal available when you need to use the cellular backup may not be as good as on the day you tested different carriers. Having a solution with two or three carriers that automatically checks cell signals and quickly switches to the strongest available signal makes a difference.

When considering a new technology, it is always important to consider your future needs as well as your current needs. Look for a solution that is scalable and can handle the technologies you will likely use in the future.



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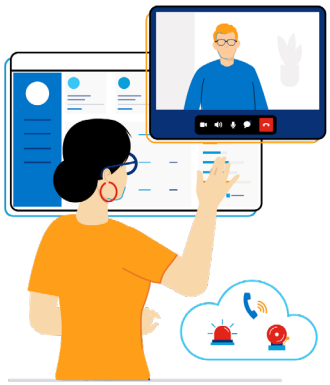


Implementation and management

Adopting a new technology can be difficult. In the case of POTS lines, however, migration is inevitable, as more providers either force migration or discourage continued use of these legacy services by increasing prices and ending maintenance and support. One way that a provider can set itself apart is by streamlining the implementation and ongoing management of a new solution.

Consider the following:

- Does the implementation include white-glove service?
- Will a site survey be done to identify any special circumstances such as external antenna requirements?
- Is there equipment to install, and is the vendor responsible for updates, service and support?
- How will the system be monitored, and how are alerts and reports handled?

When it comes to business-critical applications such as your safety systems and business communications, avoiding downtime is essential, so as you consider POTS alternatives, it is important to know what to expect from your implementation in terms of time, cost and effort. For example, you will want to plan for a site survey to evaluate power, access, the demarcation location and permitting requirements to ensure the site is ready. Consider a POTS alternative that includes preliminary evaluations as well as turn-key installation with all equipment (i.e., LTE router, analog telephone adapter [ATA] and uninterrupted power supply [UPS]) for the easiest, most straightforward implementation.

Once implemented, the next challenge is ongoing management. By moving to a hosted and/or cloud solution, premises equipment, ongoing maintenance and future upgrades are less of a concern. These solutions also tend to centralize alerts and reporting, freeing up valuable IT resources, and they do not have territory restrictions, which streamlines the vendor experience. However, you will still want to determine who is responsible for monitoring and managing the system, ensuring that your critical systems are always functioning properly. Consider a fully managed solution for the most hassle-free experience.

Cost

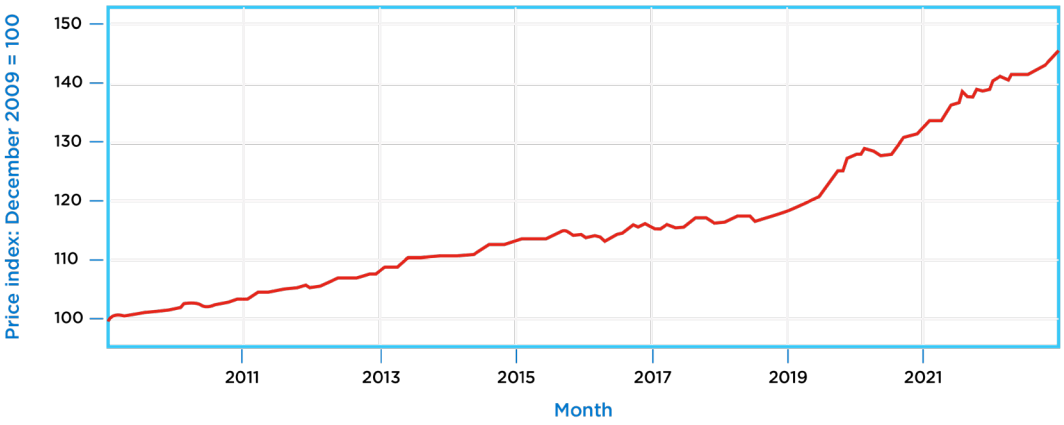
POTS lines have become cost prohibitive. According to the US Bureau of Labor Statistics, residential telephone service costs in the US have jumped 23.6% from January 2019 to December 2022—that is over 20% in 3 years[3]. In the wake of the FCC's 2022 deregulation of analog telephony services, costs are expected to surge even higher. Beyond the monthly price, as legacy lines age and become less reliable, maintenance costs are also skyrocketing.

IP-based POTS alternatives have inherently more predictable costs. With less onsite equipment (or the scope to leverage existing equipment) and easy software upgrades, maintenance costs are lower, and monthly service fees are straightforward. However, different solutions will come with different features that could inflate costs, and depending on your vendor, management and monitoring may not be included in the monthly price. Consider management costs, features and number of sites as you price various solutions and vendors.

Keep the following questions top of mind:

- What are the costs, are they predictable, and what do they include?
- When and how are costs accrued?
- Does the solution require forklift upgrades, or is it scalable and modular to reduce OpEx burdens and increase return on investment?
- Will you or the provider cover the costs of equipment maintenance and refresh?

Residential telephone costs



Residential telephone services in U.S. city average, not seasonally adjusted, from 2009 to 2022, showing a sharp price increase from 2019 to 2022.

3. Bureau of Labor Statistics Data (bls.gov)

Visibility and reliability

Historically, POTS has been a reliable solution for both voice and functional-line requirements. And when it comes to security alarms, elevators, refrigeration and point-of-sale systems, reliability is non-negotiable. If these functions go down, then it could affect business resilience, which is why choosing the right POTS alternative—one that is equal to or surpasses POTS' reliability—is such an important decision.

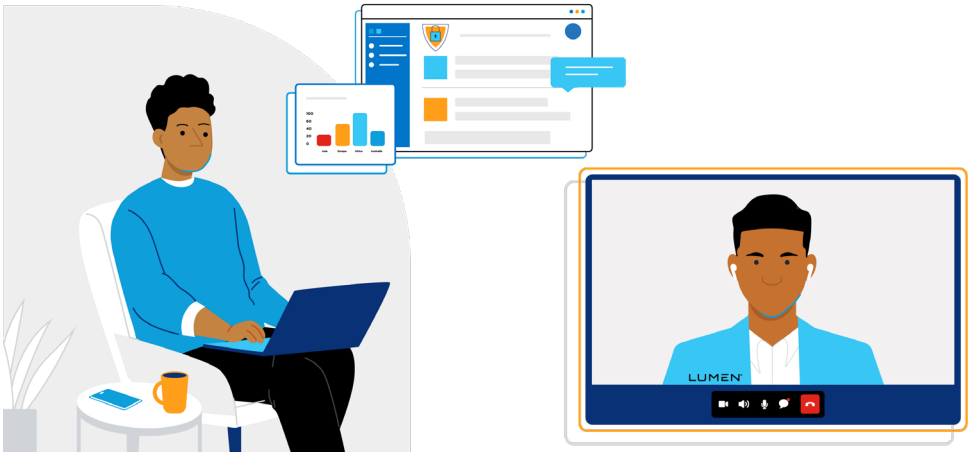
Consider the following:

- Are critical systems and hardware elements (ATAs and LTE routers) continuously monitored?
- Is there a dashboard for monitoring real-time device connectivity and health?
- Is there backup connectivity, and what triggers it?

First and foremost, consider back-up connectivity. IP-enabled solutions obviously rely on an internet connection, which provides many benefits, including flexibility and scalability. However, if the internet goes down, you want to ensure that your critical systems are unaffected. For example, some solutions use backup cellular connectivity and will automatically switchover to LTE when the primary internet is down. Multiple carrier options add further resilience.

Visibility is another key consideration and an area where digital solutions surpass POTS lines. A digital POTS alternative will not have the same territory restrictions that on-premises legacy systems do, so it is possible to streamline your alerts, reports and analytics all through one provider and one customer portal. A single-vendor experience with an intuitive portal provides simplicity and efficiency — a major benefit of migrating your legacy lines.

Different providers will have different levels of visibility, especially depending on whether your system is managed and monitored. Do you require proactive monitoring for edge-device status, alert notifications for deployed devices, maintenance and management for router configurations, and incident and ticket management via a customer portal? If so, then a managed solution will streamline visibility.



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Use cases

1. VoIP adoption supplemented by a specialty-lines solution

An energy enterprise in the process of migrating from legacy voice to VoIP realized that they used POTS lines at dozens of locations for their security systems, elevators and fire alarms, which VoIP could not replace. They needed a POTS replacement solution for these functional-use lines that was easy to install and manage (so as not to burden their small IT staff), cost effective and available at all their business sites across the U.S.

Outcome

To solve the problem and complete their migration off POTS lines, the company adopted Lumen Cloud Communications (LCC) Specialty Lines, replacing POTS for their critical access lines. With a single vendor managing their transition, including site survey, testing and truck roll, the company realized an improved customer experience. This white-glove treatment was preferable over other solutions that would have left the company to manage the new equipment and the transition with their limited IT resources.

2. Proactive POTS retirement via a single specialty-lines solution

A commercial real estate company facing increasing POTS costs and the technology's imminent retirement was interested in replacing 100% of their POTS lines, including functional lines, before the migration was mandatory. The company needed a modern POTS replacement that would maintain service, avoid disconnection and stand-up service quickly across dozens of locations and hundreds of lines.

Outcome

LCC Specialty Lines solved the problem by covering the immediate functional needs of security systems, elevators and fire alarms throughout the buildings. This gave the company breathing room knowing their specialty lines would function as needed while they considered layering digital voice and collaboration tools over the solution in the future. Furthermore, white-glove service including professional installation and ongoing management provided peace of mind.

3. Unified communications and collaboration with a specialty-lines solution

A jewelry business wanted to transition from POTS lines to Microsoft Teams for their voice and collaboration needs to modernize their workplace with future-proof technologies. However, their corporate headquarters relied on POTS from various vendors for elevator lines, security systems and fax machines—which UC&C could not replace. Furthermore, they did not have the internal resources to inventory their lines across all locations. The company wanted one vendor that could provide all voice, collaboration and specialty-line services under one umbrella, as well as expert advice and installation.

Outcome

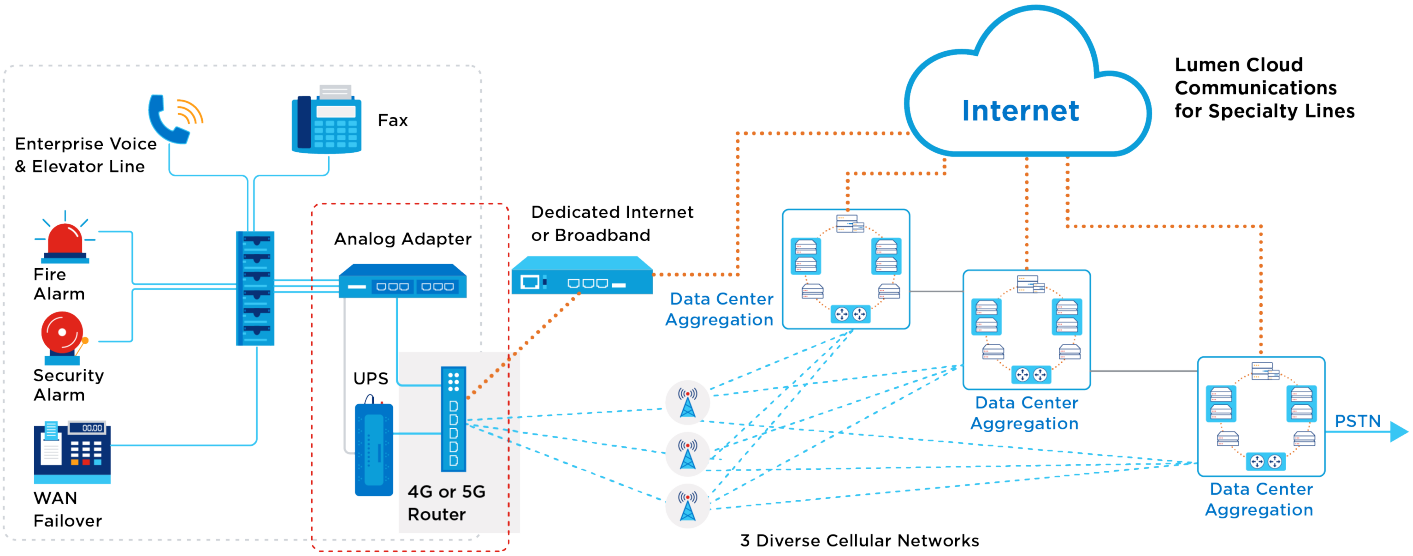
By transitioning to Microsoft Teams and LCC Specialty Lines, both provided by Lumen, the company simplified their solution set under one vendor. Lumen provided the site surveys that the company did not have the resources to perform, delivery and installation, and ongoing solution management.

4. Robust visibility for product safety via a specialty-lines solution

A national grocery store chain with hundreds of store locations wanted to migrate off POTS lines; however, the company had multiple POTS vendors and was looking for a single solution. In addition to alarms and security systems, each store had refrigeration systems that operated on POTS lines and which required a seamless transition with no down time to prevent food spoilage. Due to food quality concerns, ongoing visibility and real-time reporting for any POTS replacement system was crucial.

Outcome

Lumen provided LCC Specialty Lines, which supplemented the grocery chain's existing Lumen network services, further streamlining the company's vendor experience and allowing a complete transition of all locations' POTS lines to a single solution. By choosing a 100% managed and monitored solution, the migration onus was on the vendor, giving the company peace of mind and an easy migration experience. Lumen ensured that the grocery refrigeration systems were continuously monitored and provided robust visibility and backup connectivity, minimizing risk of food spoilage. Additionally, when the company's network services were knocked out by construction, LCC Specialty Lines acted as a tertiary backup rendering the store operable on LTE for three days as the fiber cuts were restored.



UPS — Uninterruptible Power Supply; PSTN — Public Switched Telephone Network

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Five things to look for in a specialty-lines service provider

There are many providers who can replace analog specialty lines; however, most do not offer a Swiss-army knife solution that provides WAN failover, rapid deployment and out-of-band management in addition to POTS replacement. Lumen Cloud Communications (LCC) Specialty Lines is a fully managed solution that includes all these features. Consider the following criteria as you choose a partner to advise on, implement and manage your specialty-lines migration:

Authority

Lumen has a proven track record as a leading provider of network, voice and security services, with the fastest, most secure platform for next-gen apps and data.

Expert guidance

Lumen provides white-glove service to help you build, deploy and manage your specialty-line migration.

Solution variety

LCC Specialty Lines can be implemented using Lumen or customer-provided DIA or Broadband and includes automatic failover to the supported LTE provider (AT&T, T-Mobile or Verizon) with the strongest signal at the location.

Visibility and control

The Lumen portal makes managing billing, repairs, orders, product configurations and reporting both accessible and easy. See all the way down to the port level and know if a line is off hook or on hook with LCC Specialty Lines.

Customer centricity

Lumen's dedicated Customer Success teams understand your business, know how to optimize your solutions and will help you achieve your business outcomes.

Explore LCC Speciality Lines

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