

USE CASE

Replacing Legacy Copper Lines on a College Campus with POTS IN A BOX®

Overview

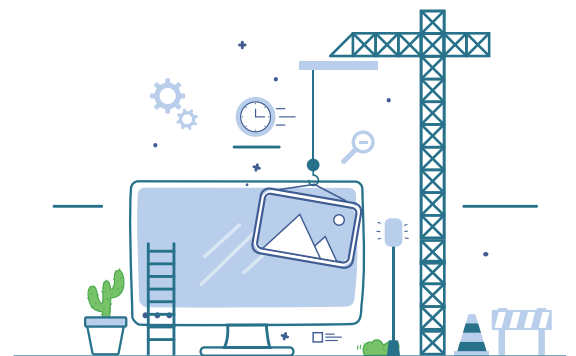
A mid-sized U.S. college campus with over 50 buildings and 10,000+ students successfully modernized its telecommunications infrastructure by replacing aging copper-based Plain Old Telephone Service (POTS) lines with DataRemote's POTS IN A BOX® solution, with support from MIX Networks.

This strategic deployment eliminated dependency on deteriorating legacy infrastructure while maintaining critical life-safety compliance and achieving substantial operational cost reductions.



Legacy Infrastructure Challenges

The institution's operations relied heavily on legacy copper-based analog telephone lines to support mission-critical systems across the campus. These included elevator emergency communication systems providing direct connections to the campus security desk, fire alarm control panels, emergency blue light stations and emergency phones serving as critical safety resources for students and staff, and comprehensive security systems managing access control for all buildings. The infrastructure also supported administrative communication systems essential to daily operations.





Escalating Operational Challenges

The college faced mounting financial pressures as monthly service costs had escalated dramatically, with some individual lines costing over \$200 per month. These unpredictable rate increases created significant budget planning difficulties for the institution, while the total cost of ownership continued to climb due to increasing maintenance expenses and emergency service call requirements. The financial burden was compounded by the lack of cost control options available through traditional telecommunications providers.

Infrastructure reliability had become a persistent concern as the aging copper infrastructure proved increasingly vulnerable to weather-related service disruptions. Signal degradation resulted in poor voice quality and intermittent connectivity issues that directly impacted the functionality of critical safety systems. The frequency of service outages had increased substantially, creating potential safety risks and operational inefficiencies across the campus environment.

The situation was further complicated by the incumbent telecommunications provider's decision to discontinue active maintenance of copper infrastructure. Technical support availability for legacy systems became severely limited, while the provider applied pressure for forced migration toward digital alternatives without offering suitable replacement options that met the institution's specific requirements for life-safety compliance and operational continuity.

Regulatory compliance presented additional challenges as life-safety systems required continuous adherence to NFPA 72, UL 864, and ADA standards. The deteriorating legacy infrastructure posed potential compliance gaps during service disruptions, while documentation and testing requirements became increasingly difficult to maintain with aging equipment. The institution faced the risk of compliance violations that could result in regulatory penalties and safety concerns.

The operational complexity of managing telecommunications across a distributed campus layout spanning 50+ buildings created significant logistical challenges. The aging building infrastructure complicated traditional upgrade approaches, while the limited feasibility for comprehensive fiber optic installation presented cost and disruption barriers that made conventional modernization approaches impractical for the institution's operational requirements and budget constraints.





Life-Safety Compliance:

Mission-critical systems (e.g., fire alarms and elevator phones) required a reliable solution that met NFPA 72, UL 864, and ADA requirements.



Service Degradation:

Copper lines were prone to weather-related outages, noise, and inconsistent performance.



Complexity of Campus Layout:

The large, distributed layout and older building infrastructure created logistical challenges for rewiring or fiber upgrades.



Rising Costs:

Monthly rates for analog POTS lines were increasing significantly, with some lines costing over \$200/month per line.



Carrier Phase-Out:

The incumbent telco was no longer maintaining copper infrastructure and pushing for digital transition.

POTS IN A BOX® Solution Architecture

The college deployed DataRemote's POTS IN A BOX® (PIAB 90X1 Series) across more than 80 analog line replacements, featuring:

- **Advanced Connectivity Options:** Primary broadband internet connectivity with intelligent automatic failover capabilities and integrated 4G/5G cellular backup systems ensures continuous operation regardless of primary network status, maintaining critical system functionality for all life-safety applications at all times.
- **Enterprise-Grade Reliability Components:** Uninterruptible power supply systems with 48-hour battery backup ensure operation during power outages and emergencies, maintaining UL 864 compliance for life-safety applications and meeting all fire alarm and emergency communication regulations.
- **Proactive System Management:** Integrated environmental monitoring tracks device performance and conditions, while automated diagnostics send real-time maintenance alerts, enabling predictive scheduling and reducing the risk of unexpected failures across campus installations.
- **Centralized Management Platform:** A comprehensive cloud-based dashboard provides real-time monitoring and status tracking across campus installations, with remote diagnostics reducing on-site maintenance and automated reporting streamlining regulatory oversight for life-safety inspections.





Strategic Partnership Integration

The implementation was enhanced through a strategic partnership with MIX Networks, which provided comprehensive telecommunications support throughout the deployment process. This partnership included direct inward dialing (DID) number provisioning that maintained existing communication workflows, seamless number porting from legacy carriers that eliminated disruption to established communication patterns, and ongoing technical support with dedicated service management resources.

Implementation Highlights

- **Fast Deployment:** No trenching or re-wiring required—devices installed in existing MDF/IDF rooms.
- **Minimal Downtime:** Cutovers were scheduled during off-hours with zero disruption to critical services.
- **Campus-wide Management:** Centralized monitoring through a cloud-based dashboard enabled real-time visibility and diagnostics.
- **Collaboration:** MIX Networks provided DIDs and number porting for seamless voice continuity.

Financial Performance

The POTS IN A BOX® deployment delivered substantial financial benefits, achieving up to 40% reduction in average recurring telecommunications expenses compared to the legacy copper-based system. This cost reduction was accompanied by improved budget predictability through fixed-rate service agreements that eliminated the uncertainty of unexpected rate increases that had plagued the previous system. Additional maintenance savings were realized through remote diagnostic capabilities that reduced the frequency and cost of on-site service requirements.

Operational Excellence

Operational improvements were immediately evident through enhanced reliability that eliminated weather-related service disruptions via cellular failover capabilities. The system delivered consistent voice quality and connection reliability across all installations, resolving the intermittent connectivity issues that had affected critical safety systems. The scalable architecture established a foundation for future campus expansion without the infrastructure constraints that limited previous growth opportunities.



Risk Mitigation and Compliance

The solution maintained life-safety compliance while eliminating single points of failure and removing dependency on aging infrastructure subject to carrier discontinuation.



Strategic Value Proposition

Infrastructure Transformation Benefits

POTS IN A BOX® enabled comprehensive infrastructure modernization without the capital expenditure and operational disruption of major telecommunications upgrades. The solution provided rapid deployment without building modifications or trenching activities.

The technology bridged legacy analog systems and modern digital infrastructure, maintaining existing functionality while enhancing reliability. This preserved the institution's investment while providing access to advanced telecommunications features.

Long-Term Strategic Advantages

The modernization established vendor independence by eliminating dependency on unreliable copper infrastructure. The scalable architecture provides a platform for future expansion while predictable expenses support effective budget planning.

Conclusion

The successful deployment of POTS IN A BOX® represents strategic infrastructure modernization that addressed critical operational challenges while positioning the institution for future growth. By eliminating dependency on aging copper infrastructure, the college achieved significant cost savings and enhanced reliability.

This implementation demonstrates the viability of advanced telecommunications solutions for educational institutions facing similar challenges, providing a proven modernization pathway that delivers superior performance outcomes.

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