



# Unified Communications Solution

**CATEGORY:** INFORMATION COMMUNICATIONS TECHNOLOGY INNOVATIONS

**CONTACT:** KEVIN PAUL, DIRECTOR OF SERVICE VALUE MANAGEMENT

OFFICE FOR INFORMATION TECHNOLOGY

[KEPAUL@PA.GOV](mailto:KEPAUL@PA.GOV)

717.346.2727

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**PROJECT END:** 9/30/2019

## EXECUTIVE SUMMARY

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The Commonwealth of Pennsylvania implemented a more modern, cloud-based unified communications solution and telephony system to address a multitude of business needs and ensure alignment with strategic direction outlined in the 2019 - 2022 Information Technology Strategic Approach. A strategic goal of *Empowering a Diverse Workforce: Enabling a Remote Workforce* is a key element as the commonwealth looks to modernize its workplace and give employees the ability to work anywhere, at any time, on any device.

In addition to helping achieve strategic goals, the unified communications solution addressed business demand for improved communications through technology services that make collaboration easier and more effective. Functions such as instant messaging, presence indicators, and transcribed voice mail to email provide additional means for workers to collaborate and communicate with one another, which ultimately leads to improved worker efficiency.

The commonwealth's previous Voice Over IP phone system lacked the convenience of integration with workstation operation systems, as well as key features such as instant messaging and presence; federation with vendors and state and local governments; and the ability to facilitate the mobility of our workforce.

The new solution added instant messaging, file sharing, convenient integration with workstation operating systems, and mobility, as well as business-grade dependability and reliability. The project team worked with partner organizations, vendors, and state and local governments to enable federation to further enhance seamless collaboration. The team also worked diligently to enhance overall call quality through monitoring network traffic and adjusting Quality of Service (QoS).

In 12 months, the team led design and transition activities to successfully transition over 38,000 users and 207 locations across the state and provided the following benefits to our employees and citizens:

- Through the federation, savings of over \$2.9 million a year in long distance charges.
- Enhanced call quality that exceeds industry standards.
- Expanded and standardized collaboration capabilities in conference rooms throughout state agencies.
- Increased mobility to enable employees to be productive both in and out of the office.

## CONCEPT

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Commonwealth employees were faced with challenges communicating internally and externally through old voice technology. Forty percent of our employees communicated using old copper wire, Plain Old Telephone Service (POTS). The remaining 60% used a proprietary unified communications solution. In many cases, the unified communication software of the old solution was never deployed due to its complexities and lack of user-friendly functions and controls. This highlighted the importance of adopting a user friendly and well-designed communication solution.

Working collaboratively with key business areas across state agencies, the PA Office of Administration strategized the requirements of what the next telecommunication solution needed to entail to address the desire for developing a more effective and efficient workforce. The team quickly identified the need to improve the tools utilized for communications both internally and externally and targeted the following services as baseline requirements:

- Increase employee productivity through an easy to use and familiar product.
- Enable mobile employees to be more productive and better connected while out of the office. The commonwealth supports thousands of mobile employees who had no integration between their mobile devices and office communication devices.
- Ensure teleworkers can easily move from the office environment to a home environment and still have the same communication capabilities.
- Provide an integrated collaboration solution that is scalable, secure, and safeguards data in compliance with applicable standards.
- Establish service level agreements that meet the requirements of availability by ensuring the ability to communicate through redundancy and geodiversity while minimizing service impacting incidents.
- Provide the ability to make creating and managing online teleconferencing a self-service feature where end users can schedule, change, and manage most aspects of group communications.

Timing was also very critical as the current telecommunications contract was approaching the end of its term. The team had to act quickly to develop a Request for Proposal (RFP) and award a new provider. The RFP was constructed to identify the baseline requirements, deliver a top-notch training and marketing campaign, and provide transition assistance to meet the contract end date.

A project team was developed to manage the vendor and provided transition support to agencies. Within 12-month period, over 38,000 users, sitting in 207 locations across the Commonwealth of Pennsylvania would need to be trained and have new hardware deployed. The new technical infrastructure was set up by the provider, which successfully made the connection between the VoIP platform and the public switched telephone network (PSTN). This

connection allowed the commonwealth the ability to connect directly from the cloud-based service to the rest of the telephone network and gave us a dial tone to the outside world.

A “white glove” service was also developed that assisted end users at their workstation to replace the existing handset with either a new handset or a headset device. End users were carefully walked through setting up their new devices and shown a few basics to get them started. A training partner was brought in to develop training that was unique to our environment and to also provide a direct means for end users to call or email for assistance as they transitioned to the new service. Online training was offered to all users and the rate of completion was monitored to ensure that end users would be prepared when they migrated to the new system.

The migration was a large success and all milestones were completed by the vendor on time.

## SIGNIFICANCE

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The new Unified Communication solution not only federated our agencies, but also local governments, federal government, and suppliers. Federation enables a trusted and encrypted relationship between organizations, making it easier to see if a co-worker or supplier is available to speak or to instant message, receive a call or collaborate through desktop sharing. Federation also provides added cost savings through on-net collaboration by reducing long distance charges and improving communication capabilities from external entities.

Teleworking is now an option for employees through the mobility services. Remote users can practically work anywhere if they have a mobile device, or a laptop connected to the internet. Without mobility services, the commonwealth would have struggled to continue to provide critical services during the COVID-19 pandemic. Over 40% of our workforce continued to work remotely to provide critical services to the citizens of Pennsylvania.

The ability to implement a telework program for employees is beneficial to the commonwealth in many ways. It has enabled the commonwealth to attract and recruit new workers who look for a balance between their personal and work lives; strategize on the reduction of real estate and associated fixtures/supplies to reduce cost; enhance continuity of operations during emergencies; expand the recruitment pool to attract candidates who may not live close to the office; improve employees’ productivity; and ultimately support the strategic goals of empowering the workforce.

## IMPACT

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The benefits to the commonwealth since the go-live of the Unified Communication platform have been significant. The first real test of the solution came with the COVID-19 pandemic. Without an effective and user-friendly communications service, the commonwealth would have struggled to provide services effectively during the pandemic. By simply allowing employees and contractors to go home with their laptop and a headset, very little disruption to the communication aspect of their job was experienced.

The features of the solution such a presence indicators, instant messaging, and video and voice conferencing were indescribably valuable to ensure that employees were able to communicate and keep citizen-facing services operational. The fact that they were easy to use and based on self-service constructs allowed users the means to easily stay in touch with others while working from home and not require any intervention or assistance from their local IT support.

In 12 months, the commonwealth led design and transition activities to successfully transition over 38,000 users and 207 locations and provide the following benefits to our employees and citizens:

- Through the federation, the commonwealth is saving over \$2.9 million a year in long distance charges.
- The Unified Communications solution's overall call quality remains higher than the industry standard. The acceptable range for poor call quality is 0.8% to 1.4% of total call volume. After being fully transitioned to the new platform, the commonwealth has averaged a 0.28% poor call quality rating.
- Expanded and standardized collaboration capabilities in conference rooms throughout state agencies. The conference phones have been integrated with display devices and provided for a seamless experience when conducting in-person meetings. The ability to connect the handset with the display allows for easy sharing of content and provides a more rich and meaningful meeting experience.
- Mobility of workforce allows employees to provide support in and out of the office, enabling further outreach to support the citizens of PA and supporting continuity of operations during situations that require employees to work remotely with no modification to the telephony experience.
- The ability to standardize on a single platform to cover almost all unified communication needs. For example, the ability for end users to easily create and manage their own teleconferences without intervention from the IT staff creates extreme self-sufficiency, reduces service desk tickets, and provides for a more efficient experience.
- Integration with the tools the commonwealth utilizes for document creation, spreadsheets, email, and calendaring also increases the ability to collaborate effectively with others. By easily sharing files, having a calendar that integrates with voice communications, showing presence with co-collaborators, and other integrated

functions of the platform, end users can easily and efficiently work together with their co-workers.

- On an average day, over 222,000 calls are made. From September 2018 to June 2020 over 70 million calls have been successfully made on the new platform.
- Overall network stability has improved. By leveraging cloud-based VoIP solutions, poor internal network configurations were identified and the provider implemented a micro-NOC to address these situations.
  - The micro-NOC focused heavily on the commonwealth's internal network and rooted out issues that affected call quality so they could be addressed.
  - This resulted in a significantly better overall network architecture and configuration that not only improved the unified communications platform but also improved other network deficiencies that may have gone undetected.
- Platform stability has been excellent since the transition completed.
  - Of the 38,000 users, there are an average of 3.4 reported incidents per day which represents 0.006% of the user base.
  - Of those 3.4 incidents reported daily, 3.4 incidents are also resolved each day.
  - The average time to repair incidents are currently at 140 minutes.

The new Unified Communication solution has greatly changed the landscape on how the commonwealth communicates. New, easy to use functionality such as instant messaging, remote telephony, sharing secure files, and end user managed audio/video conferencing has empowered employees to be able to utilize many different tools to assist them in being more productive and ultimately provide better services to the public. The added benefits of costs savings, a secure platform, teleworking, and greatly improved continuity of operations such as those experienced during the COVID-19 pandemic have been invaluable. Lastly, the commonwealth has delivered on one aspect of its commitment to achieving its strategic goal of *Empowering a Diverse Workforce: Enabling a Remote Workforce*.