How Lumen deployed Microsoft Teams to unify a remote workforce

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Enabling better communication for the future of work

The global pandemic changed the landscape of business in 2020. Enterprises had to adapt quickly to support remote workers without impacting day-to-day business.

This presented organizations with an opportunity to update their legacy telephony and collaboration systems and pivot to modern, scalable, and integrated platforms.

As we look ahead, this shift in the workplace from office to home is being predicted to have long term impacts:

- By 2024 in-person meetings will drop from 60% of enterprise meetings to 25%, driven by remote work and changing workforce demographics.*
- By 2024, remote workers will represent 30% of all employees worldwide, an increase of 13% over 2019, to nearly 600 million employees.*

Key benefits of Microsoft Teams

- Secure, scalable collaboration and voice telephony platform
- Supports a central source for content management
- Direct routing for voice connectivity

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How Lumen maintained business continuity with Microsoft Teams

When faced with new overnight requirements to work from home, Lumen, like other enterprises, had to shift priorities quickly to keep employees productive and connected with customers. Lumen had originally formulated a standard migration path for the transition to Microsoft Teams from a dedicated Skype environment with the intent of a six-month wave-based migration. And with the onset of office closures, the timeline was accelerated to deploy it to the entire global workforce of 40,000 employees in a three-week sprint.

Getting the workforce set up with Microsoft Teams quickly was a priority to ensure sales and customer service teams could support customers who were facing increasing demands on their networks due to their own remote work requirements. Over one weekend, Lumen deployed Teams to 8,000 employees in the North American sales force. By the end of three weeks, all employees were using Teams for collaboration and voice calling.

Lumen also accelerated its introduction of the telephony features in Teams Calling, especially Direct Routing, which allows calling directly from the Teams environment using existing phone numbers.

The Lumen approach to design and architecture

Lumen's approach for modernizing its collaboration strategy started with the assessment of current services in place for collaboration tools and voice communications. Several large-scale in-house voice system platforms were distributed across the globe; each connected to the local PSTN via SIP service.

Regionally, SIP service was handled by in-house session border controllers (SBCs) that communicated with carriers for SIP/PSTN connectivity. In addition, collaboration and conferencing services were supported by Microsoft Skype for Business internally within the lines of business. Original Skype for Business front-end pools were geographically present in North America, EMEA, Asia Pacific, and Latin America.

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The initial design approach was to establish additional SIP connectivity from current in-house SBCs to the Microsoft 365 environment. Once tested, functional areas within the company would be migrated from the internal Skype for Business infrastructure to Microsoft Teams cloud environment.

Microsoft Teams for telephony and collaboration required several key components:

- Microsoft 365 E3 License + Phone System - OR- Microsoft 365 E5 License.
- SIP Connectivity to a PSTN provider to support Direct Routing
- Configured Microsoft-approved Session Border controllers
- Connectivity to the Microsoft 365 platform

To enable collaboration, Lumen remote workers utilize the Teams client to connect to the Microsoft Teams infrastructure within the Microsoft 365 cloud. All voice and collaboration activities are managed and controlled by the Microsoft 365 platform. In the event that a call is initiated, the user's call is routed externally via the Direct Routing Architecture. In both cases, the Teams platform performs call control, encoding, and handling. Microsoft offers two methods to connect to the Teams platform within Microsoft 365.

| Method	Advantages	Disadvantages
Teams Calling Plan: Allows Teams to replace current PBX functionality and voice carrier services. Customers port their telephone numbers into Teams platform. Teams provides the PSTN connectivity.	• Allows integrated approach to collaboration and phone services. • Replaces legacy PBX systems. • No on-premise or cloud SBC required.	• Usage rates dictated by Microsoft and typically higher than market rate. • Routing is controlled by Microsoft not customer. • Telephone number must be ported into Teams platform. • Additional licensing cost for external conferencing.
Teams Direct Routing: Allows Teams platform to interact with customer session border controller for call handling.	• Call routing is controlled by customer. • Customer can utilize SIP provider of choice. • Lower Teams licensing cost. • No telephone porting required.	• Customer must invest in session border controller and SIP provider for PSTN connectivity. • Customer manages session border controller. • Additional Teams licensing for external conference calling.

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Benefits of Direct Routing:

- Existing SIP service in place
- Ease of conversion
- Return on investment (Direct Routing vs Microsoft Teams Calling Plan)
- Current investment in Session Border Controllers
- Ability to control routing of calls
- Ability to control the price structure for call usage
- Country Coverage for Telephony Numbers to Microsoft 365

Pre-Microsoft Teams migration

Post-Microsoft Teams migration
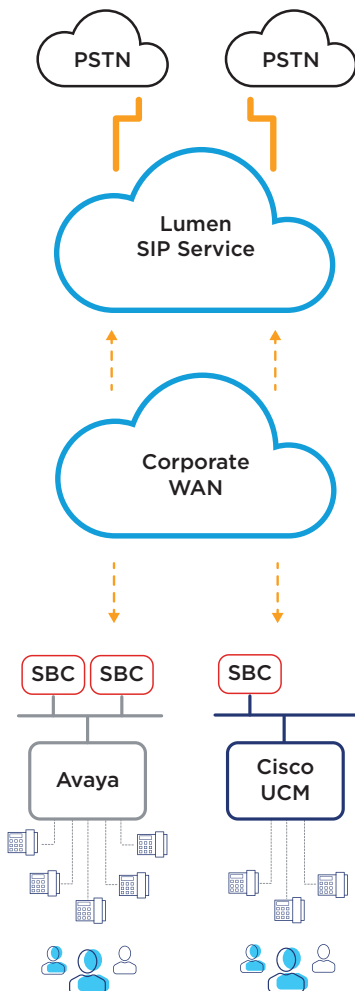
Legend:
- Carrier SIP Trunks
- Direct Routing SIP Trunks
- VPN tunnel
- Teams client voice session
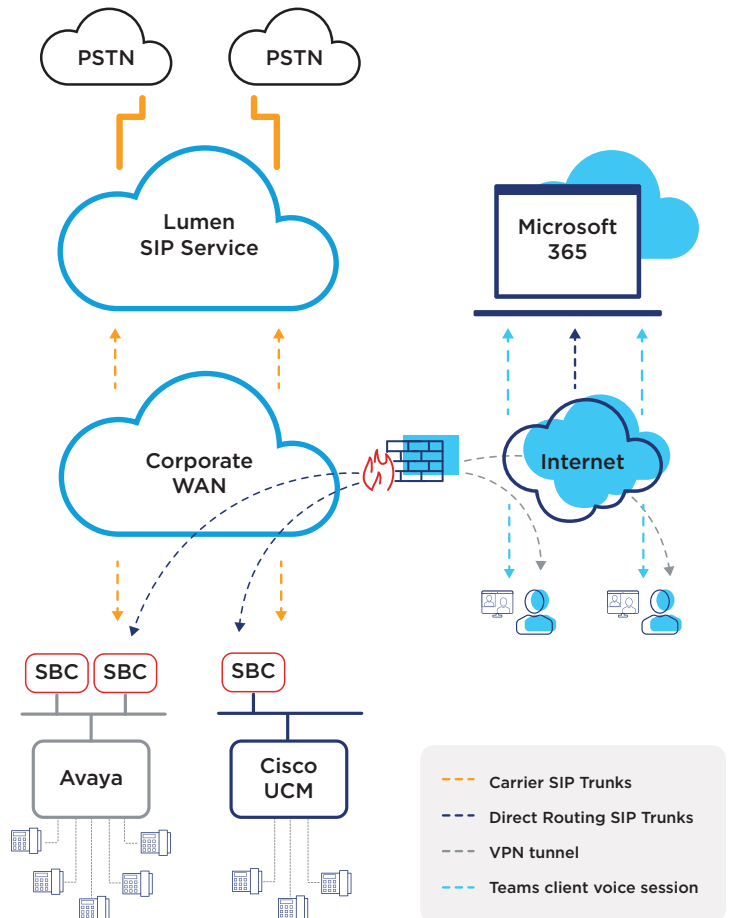
Implementation model

In most cases, enterprises have several telephony and collaboration tools in place across geographies to increase employee productivity.

A best practice approach to Microsoft Teams implementation aligns adoption with the needs of the business. Most organizations adopt a phase-in approach to transition off legacy platforms. Lumen phase tasks included:

Phase 1	Phase 2	Phase 3	Phase 4
Initial planning	**Chats & channels**	**Conferences & meetings**	**Voice calling**
• Assessment of voice services • Evaluation of current SBC capability and licensing • Review of Microsoft licensing • Evaluation of LOE and resource requirements • Creation of schedule milestones • Executive sponsorship	• Verification of chat and channel operations • Education messaging to end-users	• Purchase of Microsoft Teams conferencing license • Validation of functionality and integration with outlook	• Build of test direct routing to Teams with pilot users • Internal testing of Teams calling internally and externally • Rollout of SIP services to Teams from all session border controllers • Warm handoff to IT operations • Decommissioning of Skype for Business on-premise servers

By selecting Direct Routing, Lumen was able to keep their telephone numbers within their current SIP-enabled provider, reducing rollout time and optimizing costs. The alternative, using Microsoft Teams Calling Plan, would require all employee telephone numbers to be ported into Microsoft's Teams Phone system environment over time resulting in a longer transition window, more coordination, and higher usage costs. To maintain the best possible cost model for control and usage, Direct Routing was selected.

Within the Microsoft Teams tenant, there are specific areas of configuration that require addressing:
• Initial configuration of the Microsoft Teams tenant
• Expertise of internal staff in configuration details
• Cost implications of Microsoft Teams licensing (example: external conference calling ability)
• Impact to support framework with the organization supporting Active Directory, Messaging, SharePoint and OneDrive
• Handling exceptions (users, devices) that may not belong within the tenant at initial rollout

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Microsoft Teams helps Lumen stay focused on the customer

The successful migration to Teams was key to Lumen's business continuity strategy and has long-ranging benefits in simplifying how employees work with each other and with their customers and partners from virtually anywhere in the world. The implementation of Teams is also helping the organization improve the customer experience. One example of this is how customer support groups have started using Microsoft Teams to consolidate information from various ticketing platforms, reducing the time representatives need to answer customer questions and provide a single view of what is happening for that customer. In the past, this process would have required technicians and customer care teams to search between various systems to gather the information they needed. Ultimately, this implementation unified the diverse workforce by giving the entire organization one platform for working together and collectively contributing to the success of the company.

> **"** The various capabilities in Teams are helping us assist our customers through this unprecedented time—our business continuity means our customers can stay connected and productive too. **"**
>
> **— Fletcher Keister**
> **Chief Transformation Officer, Lumen**

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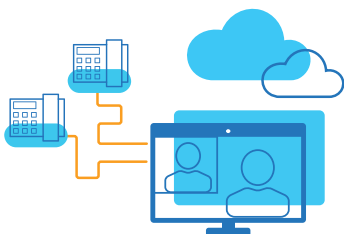
The future of work is now

The new demands of a large remote workforce provide an opportunity to find solutions that combine scalable secure collaboration features with telephony services within a single platform. This empowers a more productive workforce, a higher efficiency in communicating across the enterprise and an overall lower cost of ownership.

As enterprises continue their journey to supporting remote worker environments with Teams, keep the following considerations in mind during your planning:

- Microsoft Teams Phone System management
- Active Directory integration
- Premise-based or cloud-based Session Border Controller choice and installation, configuration, training and management tasks
- SIP based connectivity to PSTN centralized or geographically distributed
- Licensing requirement for external parties to dial into Teams conference calls
- Contact Center agent integration
- Troubleshooting:
    - Reporting
    - Advanced path visualization and troubleshooting
    - Machine learning and AI predictive analytics
    - Data Segmentation
    - Actionable insights
    - Advanced number management

With over 12 years of implementing Microsoft platforms for enterprises, Lumen can execute on transforming your legacy collaboration and voice environments into a modern scalable infrastructure to optimize worker productivity and efficiency. We provide end-to-end implementation and management services to enable enterprises to take advantage of Microsoft's scalable Teams platform for collaboration, voice communication, and content management.

Contact your account team to learn more about Lumen's own transformation with Microsoft Teams and find out more about how we can help your organization build a scalable collaboration platform for the future of work.

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