A Guide to Cloud Telephony with Microsoft Teams

Luware
Nimbus

Luware

Contents

Abstract

Microsoft Teams is a powerful communication and collaboration tool. Over 270 million active users per month use the platform to collaborate and optimize their productivity. By further enhancing Microsoft Teams with voice capabilities, organizations can create a singular experience hub for all business interactions.

By integrating Teams into the Public Switched Telephone Network (PSTN), you can use Teams as an actual telephone with a telephone number that anyone can call. There are three ways of doing this: Direct Routing, Operator Connect, and Microsoft Calling Plans. Your company size, existing infrastructure, and needs will determine what option, or combinations of options, is best for you.

Once you have set up Teams as your phone system, you can add solutions from third-party providers that enable you to add powerful call management, compliance recording, and contact center capabilities. That way you can turn Microsoft Teams into a compelling modern alternative to legacy systems and use it for all customer touchpoints, including the IT helpdesk, reception, or even contact center.

By further enhancing Microsoft Teams with voice capabilities, organizations can create a *singular experience hub* for all business interactions.

Introduction

Organizations are under growing pressure to optimize their IT services, increase productivity, and reduce costs. At the same time, customers have increasingly high expectations of customer service. To manage this challenge, more and more organizations are looking for a single integrated cloud platform for all their internal and external communications.

With over 270 million monthly active users, Microsoft Teams has already established itself as a powerful collaboration tool. By connecting Teams to the Public Switched Telephone Network (PSTN), it is also possible to use it as an actual telephone with a real telephone number that anyone can call. That way, employees can work from anywhere, while organizations benefit from scalable technologies and a simplified IT infrastructure.

There are different methods of connecting Teams to the public telephone network. The best solution for your company will depend on your size, existing infrastructure, and needs.

Once you enable Teams as your cloud telephony system, you can merge UCaaS (Unified Communication as a Service) and CCaaS (Contact Center as a Service) to create a single integrated platform for all external and internal communication. That way, you can handle all your customer touchpoints – including the IT helpdesk, reception, or even contact center – in Teams.

Cloud Telephony

Cloud telephony is an internet-based voice communication (VoIP) service hosted in the cloud.

How It Started: (IP) PBX on Self-managed Servers

Businesses used to rely on a Private Branch Exchange (PBX) for their telephony (such as Avaya or Cisco) or on-premises UC (Unified Communiation) solutions like Skype for Business. Traditionally, the company maintained these PBX systems and ran them on servers in their own data center. They would then connect the PBX to the PSTN through a telco provider to make calls with the outside world.

Although VPNs and separate desktop or mobile clients make it possible to handle calls remotely and for employees to work remotely, the user experience is suboptimal.

A PBX is a business telephone system that allows users to call internally with people in their company and externally with the outside world. They are based on analog, ISDN, or Voice over IP technology.

Telephony using (IP) PBX systems
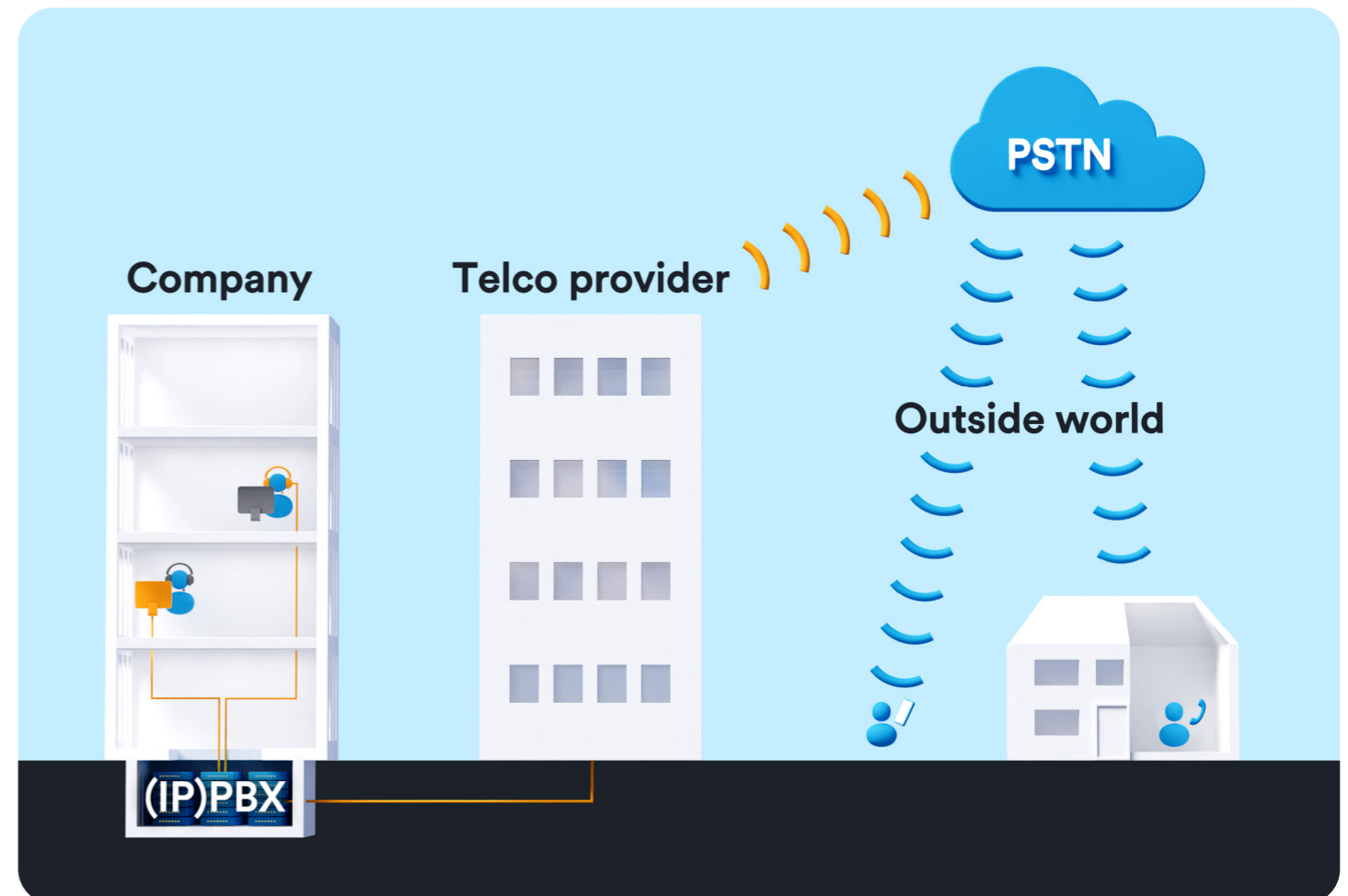
The New Way: Cloud Telephony

With cloud telephony, all the on-site infrastructure is removed. The service is provided in the cloud and can be accessed via the internet. As with a traditional PBX, users or phones have a phone number, but instead of being attached to a physical device, the number is virtual.

Cloud telephony solutions will include hosting, maintenance, and updates, usually on a per user per month commercial model. Cloud telephony solutions are often a feature of a wider UCaaS solution like Microsoft Teams.

Cloud telephony gives employees increased freedom and flexibility. They are no longer tied to a desk with a physical phone and can take calls from any device connected to the internet. The calling experience is streamlined throughout the organization for users worldwide. Organizations no longer need to maintain on-site hardware and can minimize IT efforts.

Telephony using cloud solutions
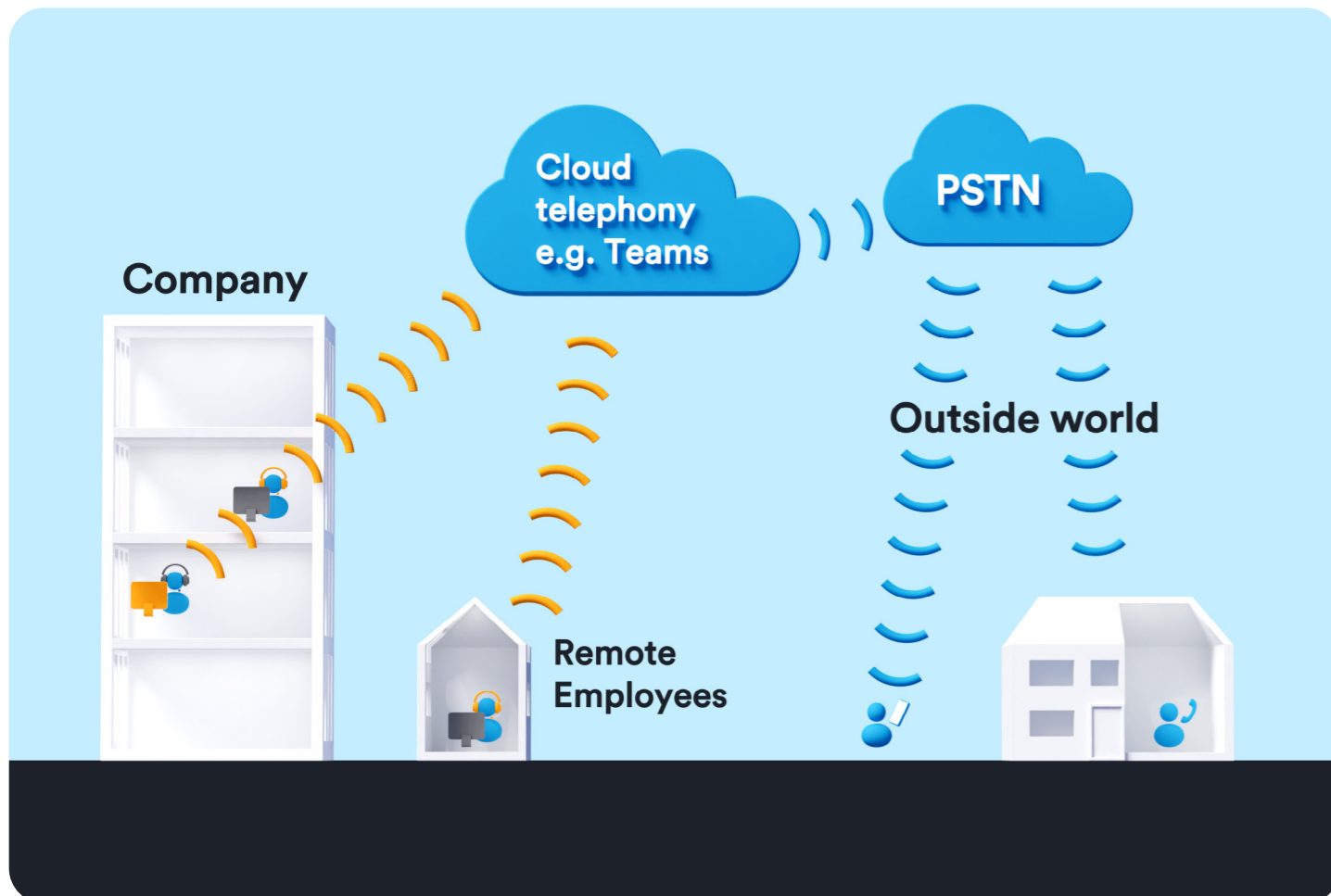

Microsoft Teams Phone

Microsoft's answer to these old PBXs is the Microsoft Teams Phone. This is an exciting prospect for organizations that already use Microsoft Teams for collaboration or intend to do so. It extends Teams' Voice over IP (VoIP) capabilities and turns it into a full-fledged business phone system that allows users to make and receive calls using Teams.

Users can make use of a mobile device or laptop with a headset to handle calls in Teams. Compatible classical hardware phones are also available for organizations that prefer the old-school approach to calling.

To use Teams Phone, you first need to purchase a per-user "Phone System" license, which adds call control and PBX capabilities to Teams. You can then use Teams to place and receive calls, transfer calls, and mute or unmute calls. Phone System is included in some Microsoft 365 subscriptions or can be obtained separately as an add-on.

Turning Microsoft Teams into a Telephone System

Once you have a Phone System license, you can connect to the PSTN in one of three ways: Calling Plans, Direct Routing, or Operator Connect.
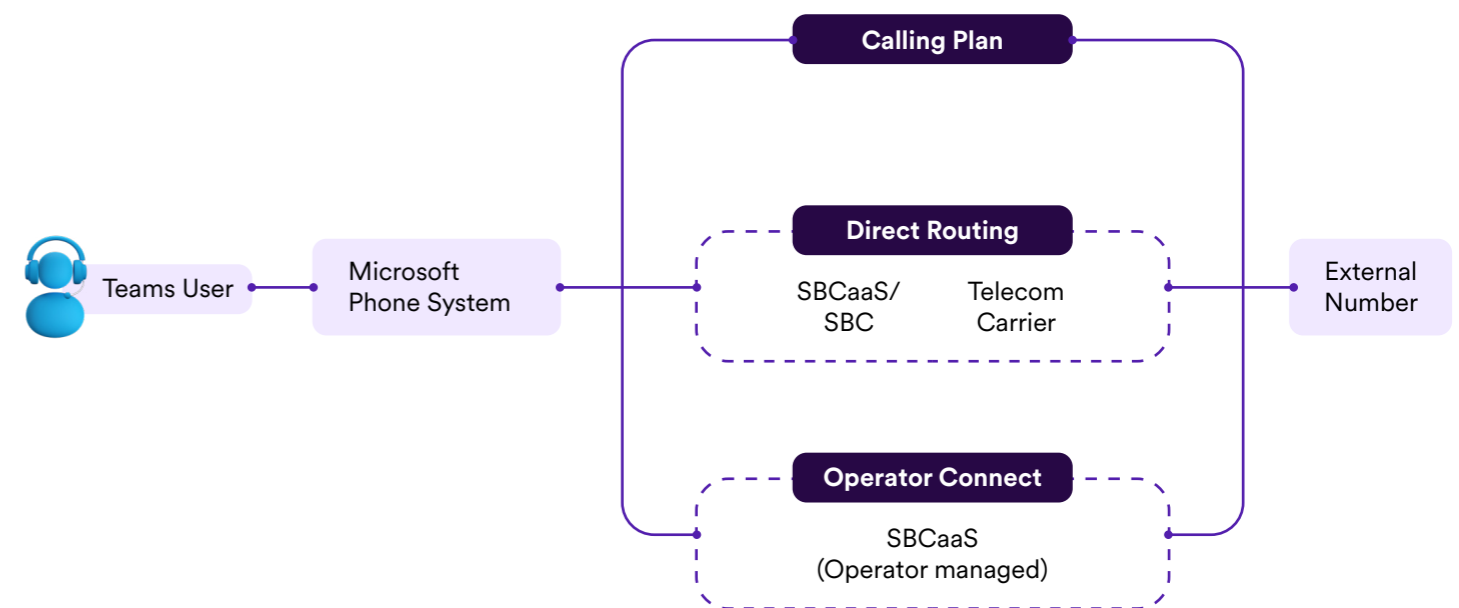
You can mix and match between these methods as you prefer. You can use different solutions for different countries or users as your needs dictate.

1 Microsoft Calling Plans – Keep Everything with Microsoft

The easiest way to connect your Teams to the PSTN is to use a Microsoft Calling Plan. In this scenario Microsoft acts as the operator and offers calling plans, which can be purchased directly from Microsoft or from a Microsoft Partner. You can either get a new number or port your old numbers. No additional PSTN carrier contract is required, as Microsoft creates a connection between the Telephone System and the PSTN through its own infrastructure.

With Microsoft Calling Plans you pay a monthly fee per user for a predefined amount of minutes (3,000 minutes for domestic calling plans in the US and Canada, 1,200 minutes in other markets and 600 minutes for international plans) or choose a Pay As You Go plan, where you pay for the minutes used.

With the predefined minutes plans, users in the same region share a pool of minutes. That means that if you have three users with a 3,000-minute domestic calling plan in Switzerland, they share a pool of 9,000 minutes, and it does not matter who uses up the minutes. However, once you exceed these minutes, each additional minute is billed extra.

Calling Plans are a simple solution as organizations can control everything in the Teams Admin Center and purchase everything from Microsoft. It is a great option if you want to optimize your communication strategy and get rid of your old PBX system. However, Calling Plans are comparatively expensive, especially for larger organizations. They are also only available in a limited number of locations (although the list is growing). And because everything is coupled to Microsoft, there is no ability to redirect calls in the event of a Teams issue. In the case of a Teams outage all communication would be down.

Calling Plans are good for organizations when:

- A Calling Plan is available in your region
- You do not have a preferred telecommunication provider
- You do not want a contract with a third party
- Your organization is small
- You want easy handling and a simple set up

2 Direct Routing – Connect the Old World with the New World

Traditionally, PBXs are enabled for calling using SIP trunks, which provide call packages and connect the phone system to the PSTN. Direct Routing follows a similar model where Teams is the PBX and SIP trunks are connected via a Session Border Controller (which acts as a connector and firewall for the voice traffic). This model allows you to choose from established SIP providers that offer competitive pricing plans. There are plenty of vendors that cater to organizations with international requirements by supplying the Direct Routing and support services. Lots of these providers also re-sell Teams-based contact center solutions like Luware Nimbus, making them a "one-stop-shop" for all your Teams calling needs.

With Direct Routing your own PSTN operator is connected to Phone System via a Microsoft certified Session Border Controller. Usually, a provider offers Direct Routing as a service as a per user per month package, but can also offer concurrent channel and per minute-based options. The provider uses its own infrastructure to redirect calls to the organization's PSTN. However, there is also the option of a bespoke solution for larger organizations. A managed SBC solution, where the organization buys the relevant technology such as the SBC, is much more cost-effective for larger, multi-national organizations. Because Direct Routing is built on a network independent to Microsoft, disaster recovery plans can be implemented, such as redirecting calls to mobiles in the event of an outage of Teams.

Direct Routing is good for organizations when:

- You want to remain resilient to outages
- You want to keep your current infrastructure
- You are a medium to large organization

3 Operator Connect – Direct Integration Between Telco Providers and Microsoft

The newest way of connecting Teams to the PSTN is Operator Connect. It merges the easy administration of calling plans with the ability to choose your preferred telco provider. With this option, organizations can choose from a certified list of operators and leverage existing contracts.

With Operator Connect, PSTN Carriers directly integrate with Microsoft's cloud. They manage the PSTN and SBCs for organizations and thereby save them hardware purchases and management tasks. Day-to-day admin such as provisioning and reporting can be performed in the Teams Admin Center. The billing and commercial agreement will be performed separately between organizations and operators.

Operator Connect is good for organizations when:

- Your preferred operator(s) is in the Microsoft Operator Connect Program
- You want a simple administration in Teams
- You don't want to install any hardware

Merging UCaaS and CCaaS to Boost Experience

Previously, Unified Communication (UC) connected employees internally within an organization, and contact center solutions connected customer service agents with the public. With enhanced Teams voice capabilities, you can steer all internal and external communications in one platform.

By integrating the contact center into Teams, companies can streamline communication and reduce the touchpoints to help customers quickly. Agents can see the presence status and the responsibilities of subject matter experts directly in the contact center and consult them while the customer is on hold or even transfer the call to them. Agents can better communicate information to customers through video, screen, and file sharing by having access to all the Teams tools.

UC platforms (UCaaS) such as Microsoft Teams combine real-time communication channels such as messaging, video conferencing, and calling in one platform. They streamline internal communication and give users one single tool with a consistent user experience.

Contact Center solutions (CCaaS) provide functionality and user interfaces for customer service, such as call routing and advanced analytics. It focuses on external communication with customers and partners.

Both technologies are offered "as a Service", which means the solutions are hosted in the cloud and can be purchased as a subscription-based service. Organizations don't have to install and maintain the software themselves. Instead, vendors take care of all the infrastructure and maintenance, and companies access the service through the internet.

The Two Approaches to UCaaS and CCaaS Integration

There are two different approaches to integration. You can either integrate a UC system with the contact center or embed the contact center in the UC solution. Below we will have an in-depth look at the benefits and drawbacks of the two approaches. We will not dive into the technical difference but focus on the business considerations.

Integration approach

Office365 ecosystem

UCaaS (Teams)

CCaaS

Embedded approach

UCaaS

CCaaS
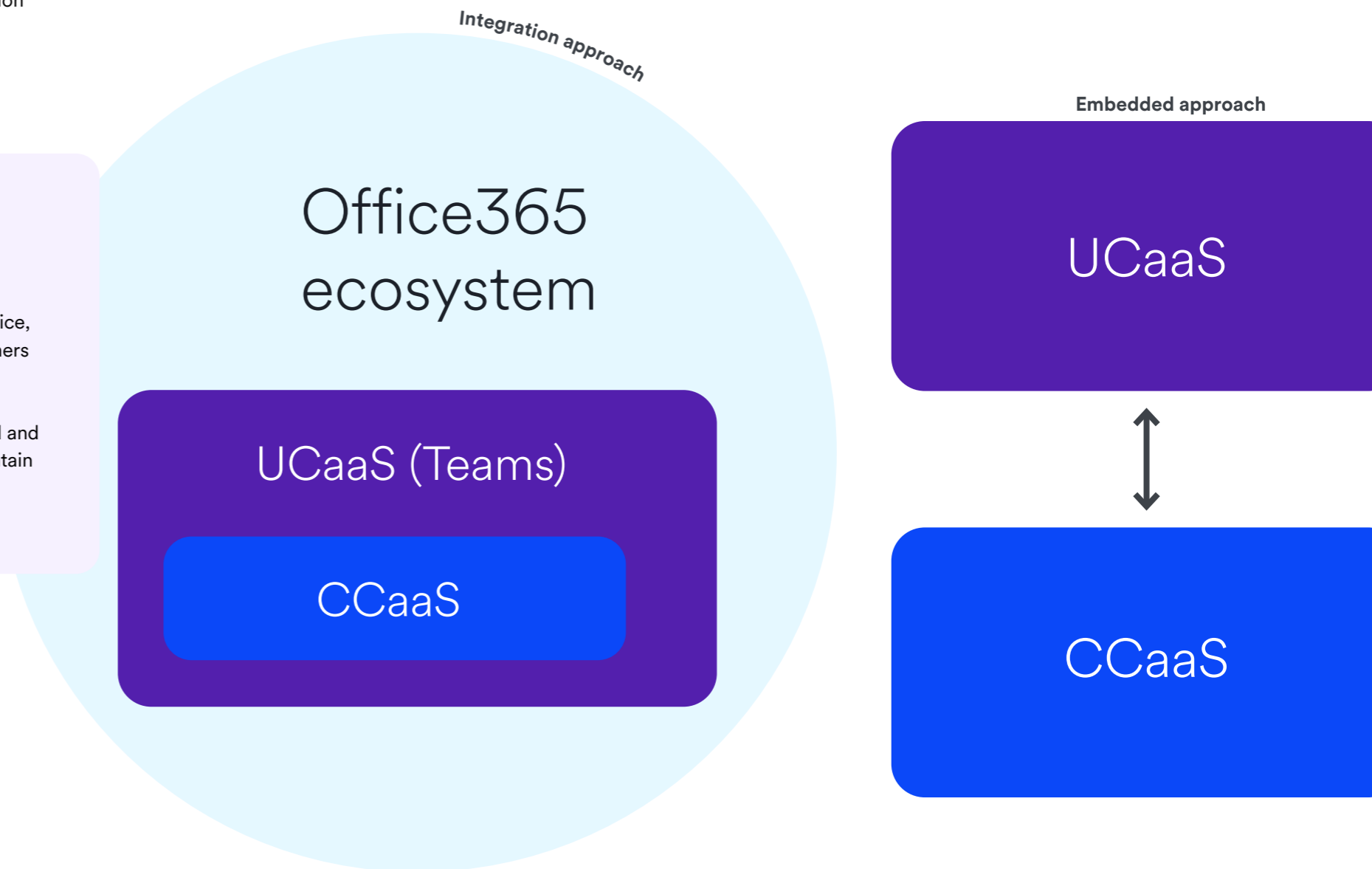
The Integration Approach: Integrate the UC Solution with the Contact Center

The traditional approach is to integrate the UC solution with the Contact Center. These contact center solutions have proprietary communication channels, such as web chats, calls, or video chats. Agents take customer calls in the contact center solution, and Teams is integrated into the contact center solution in some way to enable collaborative customer service.

Agents can use Teams to contact colleagues or see their presence status within the contact center application. Still, agents remain on a siloed application, and IT must maintain two different solutions. This approach is beneficial because these solutions are independent of UC providers, which is particularly helpful for organizations using multiple UC platforms.

In short: with this approach, contact center vendors have full control of the call and a high degree of flexibility to offer different functionalities, but organizations must maintain two communication platforms for the same channels within the company, such as Teams for internal calls, and the contact center solution for service calls.

Benefits of this approach:

- For companies who want to go the 'Microsoft way'
- For companies who want to go the 'Microsoft way' Solution independent of UC provider
- Several UC platforms can be integrated
- Contact center solution has complete control of the call
- Established solution with a lot of features

Disadvantages of this approach:

- Two platforms must be maintained by IT
- Customer service agents are on a siloed application and must navigate multiple platforms
- UC integration is often limited to voice
- Integrations must be tested and potentially adapted when there are updates in the UC platform
- Transfers from the contact center solution to the UC platform take a few seconds and require a new call to be established
- Agents' and employees' presence status must be synchronized between the systems with potential for fault and delays

The Embed Approach: Teams as a Company-wide Communication Platform

The second approach to collaborative customer service is to choose a Teams-based contact center solution. These don't provide their own calling, chat, or video communication but use the functionalities from Teams. If an agent receives a call within the contact center solution, it is a normal Teams call.

A significant advantage of this approach is that organizations can integrate the contact center into the company-wide communication strategy and create truly unified communication with all employees using the platform. Companies with a Microsoft strategy will like this approach as it leverages Teams and the Microsoft ecosystem as a platform and standardizes the communication landscape.

In this approach, the UC provider delivers all the collaboration tools, and the contact center vendors add call management and contact center functionalities. A drawback is that the availability of APIs from Microsoft and Teams' calling, chat, and video functionality limit the features the contact center vendor can provide. As many UC platforms, such as Teams, are relatively new, this approach is less established.

Benefits of this approach:

- Holistic company-wide communication strategy
- Easier administration for IT
- Faster transfers as the media stream stays in Teams
- Also works on virtual desktops
- Follows a clear Microsoft strategy

Disadvantages of this approach:

- Fewer features available
- Contact center solution is limited to Teams' communication functionality
- Solution is limited to Teams; no option to integrate other UC platforms

Using Teams for All Customer Touchpoints

When you are migrating to Teams cloud telephony, it makes sense to migrate every touchpoint. That way Teams becomes your singular experience hub.

For a seamless migration, assess all your calling touchpoints first. Identify all the gaps where the Teams built-in functionality is not sufficient and look for third-party solutions that can address these. This will avoid departments looking for their own heterogeneous solutions that lead to shadow IT.

Touchpoints will differ between companies, but below are some common touchpoints to guide you.

Reception

Receptionists are the gatekeepers of a business. They answer and filter incoming calls and transfer them to the responsible employees. To do their job well and make an excellent first impression, receptionists require an attendant console that allows them to effectively handle calls.

Built-in transfer options in Teams are limited and not optimal for busy receptionists and front desks. Third-party solutions let you integrate an attendant console directly into Teams. That way, receptionists only need to navigate one platform and don't have to switch between different solutions.

An attendant console provides receptionists with the right tools and features to handle calls effectively:

- A user-optimized dashboard
- View of the callers in the queue
- Transfer and hold options
- Contact search by different attributes, such as name, title, department, location
- Checking colleagues' availability by accessing their presence status or calendars

Call Pickup Groups

Call pickup groups, sometimes also called hunt groups, refer to a group of people answering an impersonal phone number. This might be a Sales or HR hotline. When you migrate to Teams, you also need to consider how you will migrate and manage these various department hotlines to ensure that you can cater to all customers and that no calls get lost.

Microsoft Teams offers some basic routing and IVR functionality. However, the setup and management require an IT administrator. Personal configurations are limited, call reporting is basic, and there is no graphic call flow designer.

Third-party routing solutions can extend Teams with advanced functionality and user convenience. They typically offer:

- Intuitive setup and management of call flows, often with a graphical user interface
- Easy management of IVRs and opening hours
- Uploads and management of announcements and hold music for a better service experience
- Self-service for service owners: team leads can configure setup and users themselves without the help of IT
- Extensive call reporting

Internal Helpdesks

You probably have a department that provides internal services, such as an IT or HR helpdesk. These operate similarly to call groups but also need a case management or ticketing tool. To resolve problems quickly or keep track of open tickets, it's important that calls are distributed to the correct employees and that these employees can access and track the case history.

Since the employees are already using Teams for collaboration and direct communication, migrating to cloud telephony is an excellent opportunity to bring these service departments to Teams. Since every user on Teams is already identified, there is no need for additional authentication. And Teams' omnichannel capabilities with voice, video, file sharing, and screen sharing are compelling for internal service desks, especially for IT support.

Third-party solutions will add extensive call routing capabilities, user management, and powerful automation features to boost your service desk's efficiency:

- Low-code integration of ticket tools or case management using Microsoft Power Automate
- Automation of processes, e.g., to automatically create new or open existing tickets
- Omni-device – users can call from laptops or smartphones, from the office, home, or on the go
- Teams call or external number – Service Desk can be called directly within Teams or from any external number
- Extensive call reporting and analysis
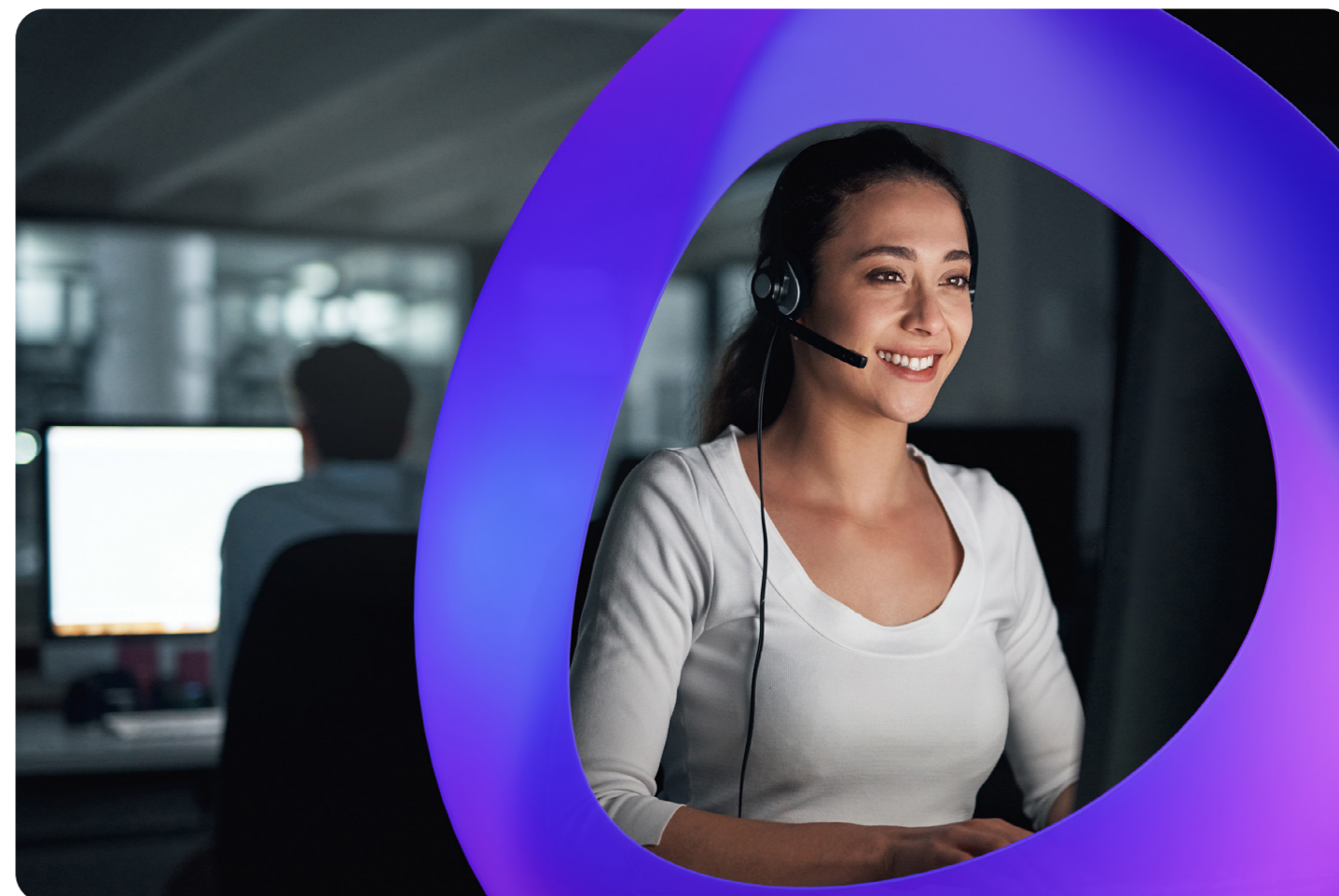
Branch Numbers

Your organization probably still has physical locations – retail stores, headquarters, warehouses, or branch offices. Customers, suppliers, and partners want to get in touch with these locations for various reasons, such as checking if a product is in store or accessing the delivery ramp.

Having branch numbers is vital to provide location-specific information. With Teams you can easily manage these branch numbers from anywhere.

Extending Teams with advanced routing and queueing capabilities, and maybe even with an attendant console solution, allows employees to answer the branch numbers to:

- Manage multiple locations/branches with one solution
- Easily manage users, announcements, and opening hours
- See which service line (or branch) the caller has dialled
- Transfer callers to the right person internally

Multi-brand Organizations and Brokers

You may also have subsidiaries or divisions that operate as independent legal entities, for example, different brands or independent brokers. Rolling out Teams telephony across all subsidiaries, divisions, and brokers help you to simplify IT and streamline communication.

You should be aware, however, that Teams is incapable of recreating organizational units and permissions for call management. This only becomes possible with extensions from third-party providers.

Centralizing the administration of the service numbers of all entities with third-party solutions allows you to simplify IT and empower users with these capabilities:

- Recreate your organization structure and specify user permissions
- Centrally manage corporate resources such as announcements to ensure on-brand communication
- Self-service for subsidiaries, divisions, and brokers to manage and configure their services themselves
- Set overflows or redirect calls, e.g., transfer callers to the corporate 24/7 call center outside opening hours

The Formal Contact Center

The ultimate customer touchpoint is usually the contact center. You probably have a hotline where dedicated agents answer customer inquiries about products or returns, or provide other forms of support.

To manage these agents, you need sophisticated routing options and extensive reporting. When you roll out Teams as your company-wide telephony system, you need to consider how you will manage the contact center.

To fully leverage these benefits of Teams, you can bring agents on the same communication platform as other employees. This will simplify your IT and help you create a more collaborative customer service.

Contact center extensions add extras to Teams necessary to turn it into a fully functional contact center solution:

- Granular routing options, such as based on expertise, skill level, and responsibility
- Real-time, custom dashboards with KPIs
- In-depth historic reporting
- Integrations with CRM and ticketing tools to provide 360° customer view
- Automations to support agents and increase efficiency

Conclusion

Companies that connect Teams to the public telephone network and use third-party applications to extend the software's functionality can use the platform to steer all business interactions and customer touchpoints.

There are different methods to set up Teams as an experience hub. The solution an organization chooses will depend on its individual needs. Telco and Microsoft Partners can help get the setup right.

To ensure a seamless migration, assess all your calling touchpoints to ensure employees have access to the necessary tools. For some scenarios, the Teams built-in functionality is limited or non-existent. In such cases, third-party solution providers can help close the gap.

Once you have enriched Teams with enhanced voice capabilities and closed all the feature gaps with third-party solutions, you can use Teams to steer your entire business.