

# IS FEDERATION LYNC'S SECRET WEAPON?



## INTRODUCTION

Microsoft Lync, Microsoft's contribution to the enterprise Unified Communications market, has undergone a meteoric rise in the last few years, gaining widespread adoption among companies of all sizes and forcing the incumbents to change strategies to respond. In evaluating or evangelizing Lync, people often focus on the usability of the Lync client; the integration of different communication modes like voice, video, instant messaging, and screen sharing; the new mobile and tablet clients, which make for excellent demos; and potentially cost-saving capabilities like web conferencing. These analyses often overlook or give little attention to two of Lync's most distinctive capabilities: extensibility and federation.

In the short term, organizations naturally focus on filling existing needs, such as better web conferencing or more seamless communication with traveling employees, when deciding whether to deploy Lync, but in the long term, once Lync is deployed, these other capabilities can be more transformative and more powerful. The communication habits that federation encourages, furthermore, may well be an important factor in cementing Lync's place in the Unified Communications industry.

This white paper explains federation, its role and importance in the Lync product, and outlines some of the ways in which it transforms communication with other businesses and with consumers.

## WHAT IS FEDERATION?

Federation, at its most basic level, is an arrangement that allows users on different communication platforms to interact. Depending on the context, the federation relationship may involve multiple vendors' products, or two separate instances of a single product.

In Lync, federation occurs between organizations that have deployed Lync, allowing Lync users in one domain to communicate seamlessly with Lync users in the other domain, with all of the same capabilities that they have available with internal users.

In understanding the importance of federation, it is instructive to consider precedents in other types of communication. Some of these are so ingrained in how these tools function that it is easy and common to forget that they exist.

For instance, it is taken for granted today that mail can be delivered to any country with one's own country's stamps, but at one time this was not the case. It was originally necessary, when sending mail across international borders, to include the stamps of every country the piece of mail would be passing through. Moreover, only some countries had postal agreements in place, so some countries were only reachable by using third countries as intermediaries. Arranging international mail delivery could therefore be quite a complex endeavor, involving working out the route the mail would need to take, calculating the price for each leg, and acquiring the correct stamps in the correct amounts for each country.

This complexity was eliminated with the advent of the Universal Postal Union in the mid-nineteenth century. The UPU, essentially a standards body for international mail agreements which is now part of the United Nations, stipulated that all member nations would deliver mail originating in any other member nation without requiring stamps or separate payment of their own.

Traditional telephony also involves a good deal of interoperation. On a long-distance telephone call in the United States, for instance, the first leg of the call is handled by a local exchange carrier (LEC), which delivers the call to a long-distance or inter-exchange carrier (IXC), which hands the call back over to another LEC for the final leg to the destination. Imagine the difficulty and inefficiency if you could only call people who subscribed to "compatible" carriers, or if you had to



**Figure 1: Flag of the Universal Postal Union**

have several accounts with various carriers in order to communicate with everyone. Or imagine you had to manually route your call to its destination, figuring out the appropriate carriers and selecting them using a series of numeric codes.

Thankfully, the design of the public switched telephone network allows essentially every telephone subscriber in the world to call any other without any special arrangements to permit interoperation. This sort of “federation” is integral to modern telephony and is largely taken for granted by end users of the telephone network.

Email also relies on a sort of “federation.” Although there are numerous mail transfer agents (the services that perform the delivery of email messages) in existence, they can all communicate with each other successfully using the Simple Mail Transfer Protocol, better known as SMTP, which has been around since the 1980s. In addition, mail transfer agents can easily (and without special configuration) deliver emails from one domain to another, allowing people to communicate across corporate or organizational boundaries. Without this cross-domain communication – if you could only email someone within your own company, using the same mail server product – email would be significantly less useful.

Although this capability in mail transfer agents is not usually described as “federation,” it is in many ways conceptually similar and, like federation in real-time communication platforms, relies on the use of standardized protocols.

The purpose of these examples is to illustrate that, although far from universal in Unified Communications software products, the concept of federation is natural and intuitive in many other modes of communication.

## FEDERATION AND LYNC

Although it is not by any means the only Unified Communications platform to offer federation as a feature, Microsoft Lync is arguably on the forefront when it comes to the real-world implementation and use of federation in a business context. There are likely a number of reasons for this, but a couple of noteworthy ones are the relative ease of setup and discoverability.

One of the server-side components of Lync Server, the Edge Server role, enables access to Lync capabilities for corporate users outside of the corporate network, and is therefore deployed by the majority of organizations using Lync Server; without the Edge Server, all users connecting from outside the corporate network (at home, at a hotel, etc.) must use a VPN. The Edge Server also handles federation, and so once external user access is enabled, unless corporate policy prevents it, it is extremely simple to allow federation as well.

Federation in Lync can be configured in one of two modes: explicit federation, in which only specific organizations are enabled as federation partners; or open federation, in which messages can be exchanged with any other organization with properly configured open federation. With open federation, safeguards are applied to reduce the risk of malicious behavior.

Open federation, when enabled, makes it very easy to discover potential opportunities to use federated Lync communication rather than picking up a landline phone or sending an email. As more and more organizations deploy Lync and enable open federation, it is becoming proportionately more common for users to habitually add new contacts outside the enterprise to their Lync contact lists and attempt to contact them via Lync before resorting to other communication methods. As Lync features like presence and high-quality voice codecs offer some very desirable conveniences for business communication, users already familiar with Lync tend to prefer using it as their primary communication tool when possible.

Integration with other Office applications like Outlook further enhance the discoverability of potential federated Lync contacts. Many Lync users also use Outlook as their primary email program, and Outlook by default displays Lync presence of email contacts when the user is logged into the

Lync client. As a result, users may discover that a contact can be reached through Lync federation by seeing his or her presence indicator displayed on an email.

In combination, these factors contribute to Lync's leadership in real-world applications of federation.

## FEDERATION AND USER BEHAVIOR

Federation influences user behavior and business workflows in a number of important ways. Perhaps the simplest way to look at it is that it allows users to experience all of the capabilities of Lync, such as presence, multiple communication modalities, easy conferencing and content sharing, secure, high quality voice and video, and so forth, not only with other users within the organization but also with external users as well. It allows those capabilities to be applied more broadly. This is particularly meaningful for frequent users of Lync, who have become reliant on these capabilities in their work.

In addition to this, though, the availability of federation can substantially change how business-to-business (a.k.a. B2B) communication is conducted. Simple questions can be offloaded from email or phone calls to instant messages based on the Lync presence state of the contact, allowing them to be resolved in real time without causing a complete interruption as a phone call would.

In general, federation can reduce the inertia involved in communicating with people outside the organization, engendering a greater feeling of closeness with customer, vendor, or supplier employees.

At the same time, because it eliminates so many barriers to communication, widespread use of federation can lead to a need to more closely manage and control incoming federated communications, so that key staff are not overwhelmed by a new stream of constant personal requests from people outside the company.

## FEDERATION AND APPLICATIONS

Besides changing communication behavior between users, federation can also allow Lync application-based services such as auto-attendants, IM bots, and helpdesk or contact center services to be delivered to contacts outside the company, without any reliance on the PSTN. Providing these services via federation can play an important role in the problem of managing incoming federated communications as described above.

Broadly speaking, there are two categories of federation-delivered services. The first consists of traditional communication workflows, such as interactive voice response (IVR) menus or contact centers, that are simply reengineered to use Lync federation as a delivery channel rather than the PSTN. The most basic and quantifiable benefit of this approach is cost savings: telecommunications costs such as toll-free number charges can be avoided if calls connect via the Internet using Lync federation.

The second category consists of scenarios that are simply not possible with traditional communications channels. An example of this is a callback request feature that uses Lync presence to identify when the person who has requested the callback is available to receive it, reaches out via IM when the appropriate person is available to take the call, and escalates to audio only when the requestor accepts the callback by replying to the IM.

*In a world where customer service is increasingly commoditized . . . federation and federation-delivered services can be a powerful tool for differentiating a brand. . . .*

In a world where customer service is increasingly commoditized, and where a few companies have found enormous success in distinguishing themselves with better customer care experiences, federation and federation-delivered services can be a powerful tool for differentiating a brand, allowing organizations to craft new methods of interacting with and caring for customers that were previously not only unfamiliar, but impossible.

Skype connectivity, introduced in 2013, allows these same advantages to be carried over to business-to-consumer (B2C) communication. With Skype essentially a household name, nearly any organization will find that a significant portion of its consumers have Skype accounts. If companies can offer a better experience or other advantages to its customers using Skype to make contact, they can both save on telecommunications costs and shift a part of their B2C communications over to a technology that allows for a much greater breadth of innovation.

## FEDERATION AND THE CLOUD

The increasing prevalence of cloud services brings another element into the analysis of Lync federation and federation-delivered services. Just as organizations can use federation to open up their own communication channels to outside contacts, organizations using Lync can benefit from specialized services provided by application vendors in the cloud and delivered via Lync federation.

Deploying and maintaining a server-side application can be complex and time-consuming, and organizations that have put significant effort into building a reliable network and server infrastructure for Lync Server may not have the appetite for introducing a new and potentially disruptive application to that environment. Cloud services delivered via federation offer a happy medium, providing all of the security, voice quality, and multi-modality benefits of Lync without the complexity of on-premises deployment.

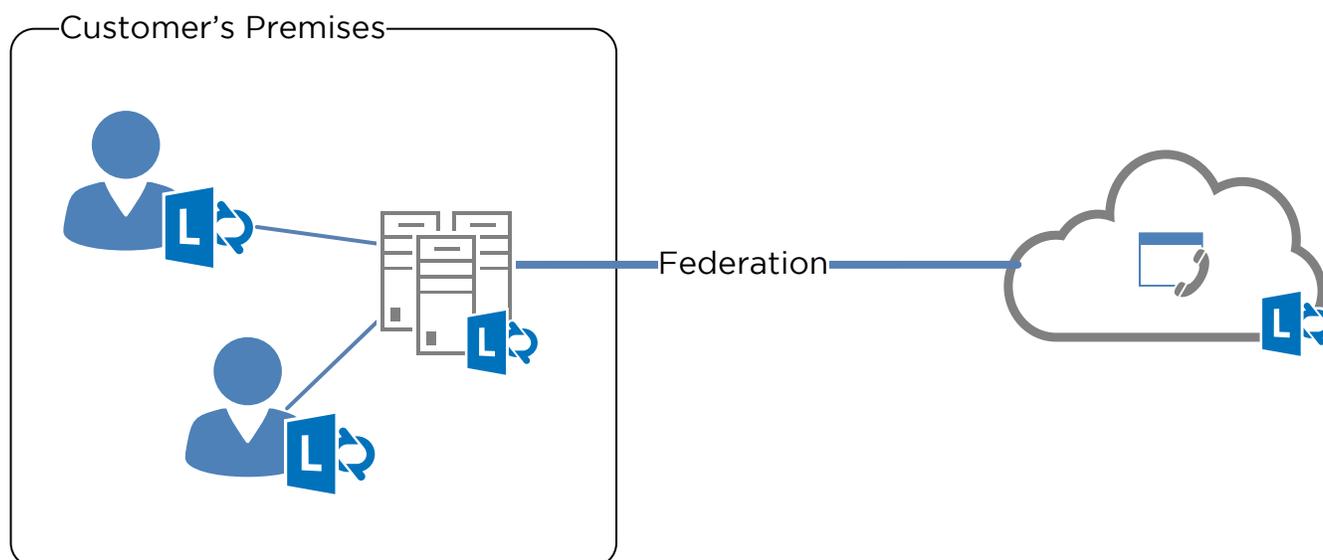


Figure 2: Lync application delivered through federation

## CONCLUSION

With the addition of Skype connectivity in 2013, federation is more than ever a key differentiator for Microsoft Lync. Thanks to the way federation is implemented in Lync, the Lync product is a leader in making federation viable and valuable for day to day use, and for many companies it has already made a significant impact on both user behavior and the delivery of communication services.

In considering Lync's long-term prospects as a Unified Communications platform, federation should not be overlooked as an important factor. Although economic considerations, ease of use, and an array of productivity-enhancing features may get Lync in the door, federation and the application scenarios it enables may well be Lync's secret weapon when it comes to a long-term transformation of the industry.