



## Tech Insight: Unified Communications II

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By 2026, the unified communications (UC) market is anticipated to [reach over \\$186 billion](#), with North America being the leading contributor to its global market revenue. With the use of communications technology at the forefront of our communities, amid industry and all levels of Government and education embracing telework and remote employment, UC is an exceptionally important factor to examine in managing information systems in 2019. The need for improved work productivity, streamlined enterprise communications, and a collaborative work environment is at an all-time high. Additionally, the vast dispersion of mobile devices, and the acceptance of a *bring your own device* (BYOD) policy, has increased the need and adoption of UC. In this Tech Insight, we'll revisit a 2015 Tech Insight on UC, discuss an overview, share benefits and examples, and learn how the Department of Veterans Affairs (VA) is currently implementing and benefiting from UC.

### Overview

UC can be [defined](#) as “a framework for integrating various asynchronous and real-time communication tools, with a goal of enhancing business communication, collaboration, and productivity.” Simply put, integrated communications optimize business processes. The components may include instant messaging (IM), voice, mobile features, audio, web and video conferencing, desktop sharing, data sharing, speech recognition, and more. UC is not necessarily a single product, but a set of products that provide a consistent user interface and experience across multiple devices and media.

Accelerating the adoption of UC is the move to cloud solutions and BYOD. While in the past, information technology (IT) leaders wanted onsite solutions and discredited cloud, the need for scalability and efficiency resulted in greater expansion of cloud services. In terms of UC, cloud infrastructure provides service upgrades and growth, and allows for enhanced scalability. [BYOD](#)

allows users to integrate personal devices with their work environment. Due to the increase in UC across businesses, BYOD has proven useful and accessible.

UC benefits the end-user experience within IT, healthcare, retail, education, travel, hospitality, government, and more. In 2017, the IT and telecom segment accounted for [the highest market share in the technology sector](#), owing to the increasing need to improve enterprise communication and productivity. The need for UC has also increased exponentially, due to startup efforts to improve collaboration and reduce costs in this sector. Additionally, adoption of cloud-based UC in this sector is also driving the need.

## Examples of UC

Examples of UC usually fall within cloud-based or mobile-based solutions, with several components included. The most common components of UC include:

- **IM:** Online chatting, with real-time text transmission over the Internet.
- **Mobility:** Ubiquitous connection anytime, anywhere, in a device-independent manner. Mobility means being able to access data across networks (i.e., personal and work domains) from anywhere in the world.
- **Unified Messaging:** Integrating electronic messaging and communications technologies into a single user interface, accessible from various devices. This means that e-mail, IM, voice features (i.e., calling), voicemail, fax, and other communications technologies are accessible from one place, for the user to access at any time.
- **Desktop Sharing:** The two main components for desktop sharing. The first is remote login, in which a user can access his/her own desktop (or another user's) without physically being at the computer. The second component is real-time collaboration. Real-time collaboration allows users to view the same information simultaneously. This is often used in conjunction with other multimedia communications to provide a virtual work or meeting space.
- **Data Sharing:** Sending and receiving data across communication channels or via interactive media (including SMART boards or other collaboration tools).
- **Audio/Video Conferencing:** Connecting two (or more) locations by simultaneous two-way video transmissions.

Firms that excel in UC include [IBM](#), [Microsoft](#), [Cisco](#), [Oracle](#), [Dell](#), [HP](#), and many more.

## Benefits of UC

The benefits of UC fall into several areas including mobility, flexibility, accessibility, scalability, connectivity, and affordability. There are [several reasons](#) why organizations should adopt UC, including:

- **The ability to streamline:** Organizations can implement an affordable and easily managed technology that provides enhanced functionality; the technology is even available to small businesses with limited resources.

- **An enhanced collaborative environment and connection to remote workforce:** With organizations employing more and more remote workers and adopting telework policies, it's even more important to develop a system where teams can collaborate and stay present, and that allows leadership to effectively manage off-site employees. UC allows for an easy connection, whether from a desktop or mobile device. A message can be sent on one medium and the same communication can be received on another medium. For example, you can access a voicemail message through e-mail or a cell phone.
- **It saves money:** One of the greatest benefits of UC is cost savings. Implementing one system, with increased communication across multiple devices and channels, is more cost effective than implementing multiple systems. In addition, dynamic lines, also known as line bursting, allows organizations to purchase the typical number of lines they need, but move to dynamic bursting when more calls than usual come in at one time. Shared lines can be used among several locations, or line pooling, so that there is no need to purchase more lines than necessary.
- **It provides better customer experience:** While UC helps improve communication internally, UC also lends itself to providing an improved customer experience. Many available features are specifically designed to maximize customer service. For example, in addition to unified messaging, direct call routing and forwarding ensures that customers will always be able to reach you. A single phone number can be given out that is programmed to use direct call routing and forwarding to several destinations and messages can be transferred to voicemail that ends up in the unified messaging location.
- **It's functional and accessible:** When pushing major data uploads to the cloud, available features allow access to tools that support development and updates.
- **It's more secure than using multiple systems:** UC means your organization is using one vendor, which in turn, means your data is more secure. Be sure to check data center certifications and credentials for guidelines and key governmental regulations.
- **It supports BYOD:** The UC capabilities that align with BYOD are an important consideration for the current and future work culture, as most employees prefer a BYOD environment.

To conclude, UC is necessary for businesses who are embracing the future and growth. Through creating a more collaborative environment for individual employees, your entire organization will benefit and improve. Businesses will also save money in the long-run and can free up budgets for other investments.

## UC at VA

VA continues to provide a variety of electronic communication outlets to enhance interaction with VA stakeholders. Currently, VA users can adopt channels such as [Voice over Internet Protocol](#) (VoIP), data networking, video communication, video content sharing, Skype for Business online meeting features or IM, and more. VA users can select one form of communication or adopt all forms. All are necessary for VA to conduct its daily operations and

fulfill the Department's mission. Currently, [VA's UC capabilities](#) are those that securely provide voice, video, and data service over a common network infrastructure. However, further adoption of UC at VA can provide great efficiency, cost savings, and new capabilities for some business functions. VOIP is excluded from TIC 2.2 requirements, but other network data is not

VA uses several forms of communications technology, such as:

- Software-based solutions that rely on Skype for Business for chat/instant messaging functionality, desktop sharing, and voice/video capability;
- Telecommunications infrastructure for hard phones, soft phones, and wireless phones
- Print centers for document sharing and fax service;
- A Veteran Relationship Management (VRM) program that uses a Customer Relationship Management (CRM) Unified Desktop;
- Large-scale video teleconferencing systems, including hardware and software-based endpoints, gatekeepers, gateways, content recorders, and multipoint conferencing systems. Many of these technologies are UC elements that VA provides over a data packet-switched network.

While VA is currently implementing UC technologies, there are currently several targeted areas identified for improvement in the use of communications devices and services, such as interoperability and integration. VA facilities and programs do not have universal agreement on standardization, architecture, and policy to support deployment and integration of communications services. The [UC Enterprise Design Pattern \(EDP\)](#) promotes the current implementation of VoIP Session Initiation Protocol (SIP) systems and other best practices at VA facilities, without the need for an official VA policy directive. The [Trusted Internet Connection \(TIC\) Initiative](#), as outlined in [OMB Memorandum M-08-05](#), optimizes and standardizes the security of individual external network connections currently in use by the Federal Government, to include connections to the internet, but it excludes VOIP from its TIC 2.2 requirements. Other network data is not excluded. The initiative is expected to improve the Federal Government's security posture and incident response capability through the reduction and consolidation of external connections and provide enhanced monitoring and situational awareness of external network connections.

In addition, business continuity needs to be based on VA service needs. Cloud-based solutions are prioritized, but solutions must consider quality of service (QoS) and disaster recovery (DR) needs. As a necessity to operations across VA facilities, communications services must be accessible to stakeholders. Yet communications services face challenges, including availability across the mix of legacy and newer technologies, limited support for mobile devices, and insufficient infrastructure to support high volume Skype sessions.

Finally, security is a growing concern. Some forms of VA communications (e.g., voicemail, fax, etc.) do not have contemporary security controls or standardized architecture in place.

There are several technology and solution gaps that VA will need to address to resolve the business problems stated above. To learn more about these solutions, benefits, and

implementation of UC at VA, read our [EDP on UC](#). This EDP document helps modernize the VA communications infrastructure, provides guidance on achieving new capabilities, and provides approaches that can lead to efficiencies and cost savings.

## Conclusion

With life moving faster in the digital age, UC will continue to become instrumental in the successful operation and growth of business across the globe. In many cases, users are already using their own forms of UC. You can make phone calls through a watch and on your computer and you can use your phones to control your thermostats or lights. Users are only becoming better at using technology and figuring out how to implement UC for their personal use, so it's understandable that they would expect the same in their workplace.

Businesses must work to embrace UC solutions now more than ever. In thinking about all the moving parts of business communication, from a hefty inbox and constant stream of emails, to IMs, a large collection of files, to voicemails, meeting reminders, and more, keeping tabs on all these different parts can be a major challenge. UC can help organize or unify these parts and manage your data for you. The bottom line is, UC is essential in streamlining your processes, reducing friction, reducing costs, impressing your customers, and enhancing and promoting collaboration.

### The Tech Insight Series

The monthly Tech Insight series aims to help readers make better decisions and be more informed customers of OIT products and services by providing them with high-level overviews of technologies that impact or will impact VA's IT environment. Tech Insights introduce topics in an easily digestible fashion by presenting background information on the topic, clearly explaining its importance within VA, and providing recommendations for success from OIT. All Tech Insights are available [here](#).

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