A Brief History of Collaboration:

From the Constitution to Crestron

By: Joseph Williams, Ph.D.

Analyst, BCStrategies

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A BUSINESS COMMUNICATIONS RESOURCE

Introduction

Effective collaboration is at the heart of every winning organization. From Wall Street to Main Street, enterprises bring people together to innovate and solve problems because "together" results in far better outcomes than "alone." In the modern workplace, we gather together in conference rooms and collaboration spaces. Because some of our collaborators are often remote, there is a need to provide virtual participation in these gatherings.

A Look Back at Collaboration

Everything from drafting the United States' Constitution to engineering a trip to the moon was imagined, planned, and operationalized in a meeting room. Corporate giants and neighborhood clinics convene their people in meetings every day to work out problems and priorities. Elected officials and regulators assemble in open venues to meet with citizens to debate public policy.

Meetings are at the heart of how we get things done.
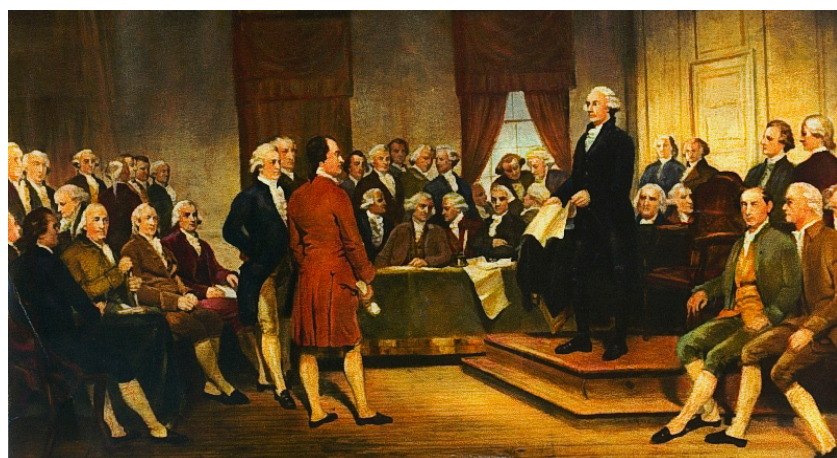
Junius Brutus Stearns. *Washington as Statesman at the Constitutional Convention,* 1856, oil on canvas. Virginia Museum of Fine Arts.

Our analysis shows that:

People struggle to join or rejoin a remote meeting, and enterprises are exasperated with having to manage so many different collaboration platforms. **[Page 3]**

Crestron, for example, has developed a one-touch tabletop experience that instantly joins a room to a pre-scheduled meeting. **[Page 3-4]**

Modern conference room systems, illustrated by Crestron's Flex line, have successfully addressed the need for a dedicated conference room system, such as a Teams Room, while providing the flexibility needed to join that conference room to any other vendor's solution. **[Page 4]**

CIOs want a communication and collaboration platform that works, works well, fits the budget, and can be supported in the normal operating model without a lot of hassle …. **[Page 5]**

Having good conference room technology is key to getting the most out of these spaces … time wasted getting the conference room up and running for a meeting is valuable time lost in unproductive waiting. **[Page 8]**

Although these advances did lower the price point for video-enabled conference rooms they were less effective at reducing its management complexity. **[Page 8]**

Crestron led the charge to affordable, usable, and manageable conference room systems in 2017 with its introduction of its Mercury product line that supported a mix of UC platforms. **[Page 9]**

Crestron's Mercury product also included management tools for rapid deployment, and it had a robust security backplane. **[Page 9]**

The trend of the last decade towards open offices put a lot of pressure on collaboration spaces to be more productive, as did the trend towards distributed campuses and engineering outposts. **[Page 9]**

The 2020 introduction of Crestron's UC-MX150-T system addresses the Teams integration opportunity while flexibly enabling most UC platforms. **[Page 11]**

With the advent of the telephone almost 150 years ago it became possible for someone to attend a meeting remotely in a way that was utterly unprecedented in human history. Suddenly convening did not require everyone to physically assemble in one place, and this drove a reinvention of how businesses could operate. Collaboration from multiple locations at once became possible about 100 years ago, and this enabled the rise of the contemporary global enterprise by improving real time command and control.

Voice participation in meetings was a huge and important advance, but it only whetted the appetite for seeing and being seen in meetings. It took 65 years, but video conferencing productively entered the meeting room towards the end of the twentieth century. At the beginning of the twenty-first century the technology was in place to enable document-sharing and whiteboarding. In the ensuing twenty years the Internet and the transition to digital communication have enabled many new and impressive improvements to how we participate in meetings.

Crestron office in the early 1970s

In spite of all this amazing technology that allows remote collaboration and communication, companies are still not satisfied with the way in which meetings are convened. At trade events from Enterprise Connect to Channel Partners, complaints persist about how long it takes to get a conference call started, jokes are rampant about how

The Advent of the Telephone

"On October 9, 1876, Alexander Graham Bell and Thomas A. Watson talked by telephone to each other over a two-mile wire stretched between Cambridge and Boston. It was the first wire conversation ever held. Yesterday afternoon [on January 25, 1915], the same two men talked by telephone to each other over a 3,400-mile wire between New York and San Francisco. Dr. Bell, the veteran inventor of the telephone, was in New York, and Mr. Watson, his former associate, was on the other side of the continent."

— "Phone to Pacific From the Atlantic". The New York Times. January 26, 1915.

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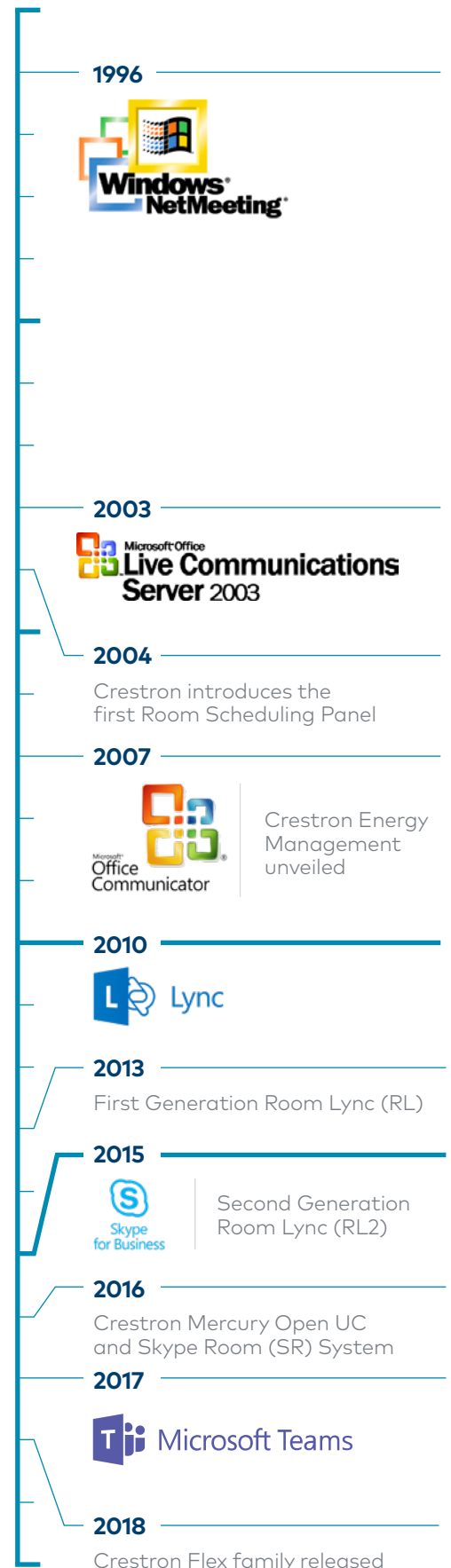
It doesn't have to be this way.

The underlying software technology for collaboration has undergone a dramatic upgrade in recent years. To illustrate using Microsoft, their solution set started with the 1996 release of NetMeeting, which provided VoIP and multi-point videoconferencing for consumer collaboration. Its product offerings then evolved, adding more features, more management controls, and more security, through Live Communications Server (2003), Office Communicator (2007), Lync® (2010), Skype® for Business (2015), and now Teams (2017). Microsoft Teams provides a click-to-join experience from PCs and mobile devices that entirely simplifies how a person joins a meeting. The software also enables meeting organizers to add people to a meeting, either by invitation or by calling them.

A Step Forward

Similar advances have taken place in the conference room because the software needed to be implemented in hardware. **Crestron, for example, has developed a one-touch tabletop experience that instantly joins a room to**

Microsoft and Crestron

1996

2003

2004
Crestron introduces the first Room Scheduling Panel

2007

Crestron Energy Management unveiled

2010

2013
First Generation Room Lync (RL)

2015

Second Generation Room Lync (RL2)

2016
Crestron Mercury Open UC and Skype Room (SR) System

**2017**

2018
Crestron Flex family released

a pre-scheduled meeting. It also allows people in a room to schedule an impromptu meeting and invite participants on the fly. The integration of software and hardware is what made the in-person meeting work smoothly with remote participants.

Conference rooms have been the place where multi-platform Unified Communications systems have felt the most pain. Most of the early video conference rooms were dedicated to a single proprietary solution, which worked reasonably well internally when compatible systems existed but were entirely dysfunctional when trying to connect people who were not on that same proprietary platform. Eventually proprietary conference room systems allowed other people to join their meeting via a web or client interface, but that was still a fail when trying to join that conference room to some other vendor's proprietary system.

Modern conference room systems, illustrated by Crestron's Flex line, have successfully addressed the need for a dedicated conference room system, such as a Teams Room, while providing the flexibility needed to join that conference room to any other vendor's solution. This has been an important advance, as valuable meeting room space no longer has to sit idle because it doesn't have the right conferencing software on the table.

It may have taken decades, but no longer is it necessary to waste the first ten minutes of every meeting trying to get the conference call correct. Scheduling and execution of meetings has become easy. Sharing documents, whiteboards, desktops, and applications have become standard. Software enhancements have also enabled breakout rooms, communication channels, virtual backgrounds, and a host of other features that have made virtual meetings engaging and more productive while improving the in-room experience for the analog participants.
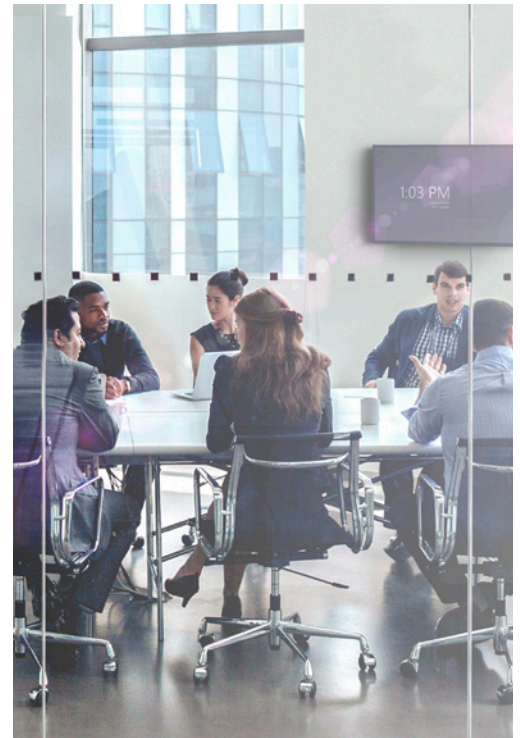
Meetings are easier

Sharing documents, whiteboards, desktops, and applications are standard

New software features: breakout rooms, communication channels, virtual backgrounds

## Crestron's Partnership with Microsoft

There are dozens of communication and collaboration platforms out there – so how did your enterprise land on Microsoft Teams? Part of the answer is because Microsoft Teams meets the requirements for a modern conferencing solution articulated above. But the rest of the answer is below the sea line.

Enterprise IT is slammed today, trying to move digital transformation forward while defending against hackers and other mayhem. Enterprise IT is also trying to light up new corporate initiatives around artificial intelligence, Internet of things, 5G, and data analytics. And it is dealing with regulatory compliance around everything from GDPR and data privacy to data breach notifications and potential oversight on technologies ranging from facial recognition to contact tracing. With new initiatives around work from home and secure supply chains, there just aren't a lot of spare investment dollars available for experimenting with new collaboration platforms.

CIOs want a communication and collaboration platform that works, works well, fits the budget and can be supported in the normal operating model without a lot of hassle so they can focus on the other projects.

Microsoft Teams and its predecessors have been recognized as the quadrant leader for years by Gartner, and Teams is rated as a top category performer by virtually all other reviewers. In the last year its number of users have quintupled, now over 75 million and rising. The product is rock solid. While competitors have struggled with privacy and security failings, Microsoft's long history with trustworthy computing has helped it to plan around these problems. Your CIO made a solid bet when she picked Microsoft Teams.

Over 75 million people use Microsoft Teams
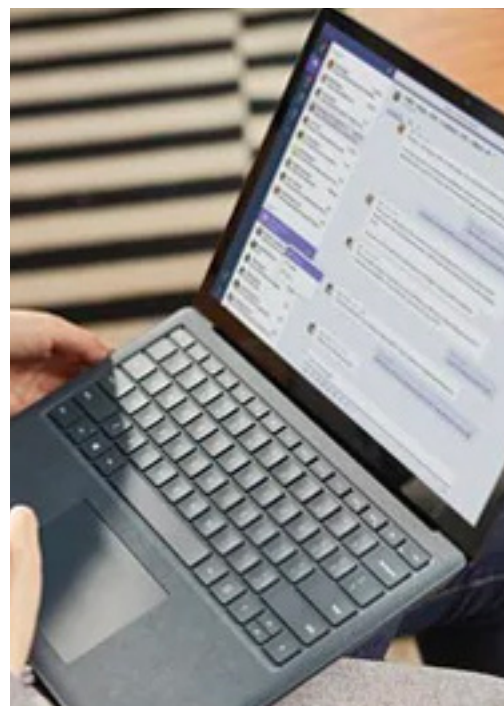
Microsoft Teams is also the centerpiece of your enterprise's Office 365 strategy. Each "Team" that is created in Microsoft Teams also spins up a SharePoint document management site, a OneNote digital notebook, and an Office 365 group membership on the backend. Teams is tightly integrated with Outlook's calendaring function and integration with email threads. Your VP for Applications loved what Teams does for their cohesive platform strategy.

The cost of Teams? Probably zero – the product is bundled into most types of Office 365 Enterprise Agreements your enterprise has signed with Microsoft. There are some training costs for new users to Teams, but those are fairly low given the plethora of training videos and instructional modules available on YouTube, LinkedIn, and on Microsoft's website. Network capacity planning would be comparable to what other products would require. And the application, like all Office 365 products, runs in Microsoft's cloud, so there is are no on-premise costs to absorb. Your CFO liked that she didn't get a new invoice to pay when Teams was adopted.

The management tools and security backplane would be familiar to any Microsoft product administrator. Teams is supportable by the existing Office help desk processes and staff. End-point products such as headsets, speakerphones, and video cameras are subject to Microsoft's certification processes for those devices, which reduces compatibility headaches. Teams runs on PCs, Macs, and Linux devices, as well on the major mobile platforms (iOS and Android), which simplifies worries about availability. Your help desk manager was happy to see Teams as the standard he would be supporting.

Microsoft Teams enforces two-factor authentication and uses Active Directory's single sign-on technology, which enables only authorized and verified users to access the system. Data stored in the backend of Teams (Sharepoint and OneNote) are encrypted. Data in-flight (between

Teams is supportable by the existing Office help desk processes and staff.

communicating parties) are also encrypted. Microsoft's Advanced Threat Protection can be applied to Teams, which enhances security for attachments and will soon validate embedded links ("safe links"). Desktop and mobile clients can also be authenticated via Microsoft Azure's Active Directory Authentication Library. Your CISO already understands Microsoft's security paradigm, and she had no problems signing off on Teams as an acceptable communication and collaboration platform.

If you are not currently a Microsoft Teams user but are in a Microsoft shop, then you are probably using Skype for Business or some 3rd party product. Skype for Business is being retired in favor of Teams on July 31, 2021, so that transition is coming. If you are in a Microsoft shop using a 3rd party product there is probably a lot of pressure, per all the advantages mentioned above, on why Teams may still be coming soon.
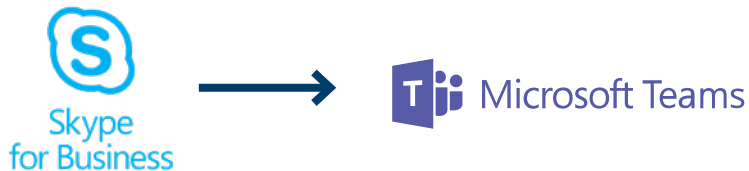
Microsoft Secured

Two-Step Identification

Active Directory's Single Sign-on

Backend and In-flight Data Encryption

Microsoft Advanced Threat Protection

Microsoft Azure's Active Directory Authentication Library

From Expensive to Affordable

Now consider the conference room itself. It is an expensive piece of office real estate that enterprises need to use productively in order to justify their cost. **Having good conference room technology is key to getting the most out of these spaces.**

In the intense work environment that characterizes most enterprises today, **time wasted getting the conference room up and running for a meeting is valuable time lost in unproductive waiting.** No one wants to lose time setting up the audio/video equipment for PowerPoint, and remote people waiting to be joined to the meeting are not thrilled to be parked on hold until the conference room(s) show up.

High-end video conference rooms, typically described at TelePresence rooms, cost as much as $500,000 to construct and outfit just 15 years ago (so-called Board Room systems could run into the millions). Even so, operation of these rooms was bothersome at best, and highly trained support staff often had to be available to make them run. Mid-range systems that didn't involve highly customized rooms were more affordable but still difficult to operate and manage.

Videoconferencing for all didn't really become an affordable reality until this last decade, when tabletop video devices, video hubs, inexpensive broadband, and low-cost and high-quality video cameras and audio endpoints converged. **Although these advances did lower the price-point for video-enabled conference rooms they were less effective at reducing its management complexity.** Video-equipped conference rooms still stood empty or underutilized because they lacked the features or functionality needed to support high-quality meetings – and far too often management didn't even know! It was common at the time for people to just ignore the in-room equipment


Having good conference room technology is key to getting the most out of these spaces.

and use their mobile phones or laptops to include remote participants, which was a rather poor outcome for IT's investment in room systems.

Crestron led the charge to affordable, usable, and manageable conference room systems in 2017 with its introduction of its Mercury product line that supported a mix of UC platforms. There were a lot of business problems being effectively addressed with this product that are worth noting. For an enterprise using Microsoft Office, it enabled scheduling of the conference rooms via Outlook and Exchange. It provided high-quality audio and connected to the room's video system. And the user could easily plug in their laptop and fire-up a virtual meeting using any of the mainstream conferencing or messaging platforms (which would have been Skype for Business, WebEx, GotoMeeting, or Slack). It also included an occupancy sensor that could be used to allow facilities management to measure and evaluation conference room usage. **Crestron's Mercury product also included management tools for rapid deployment, and it had a robust security backplane.**

The features in Mercury checked a lot of boxes for CIOs and facilities management. **The trend of the last decade towards open offices put a lot of pressure on collaboration spaces to be more productive, as did the trend towards distributed campuses and engineering outposts.** The conference room had grown up as the place to convene local and remote populations. **Conference room devices like Crestron's Mercury were making that easy and convenient.** As the Internet of Things became real, the Mercury was already a managed IoT device.

A conundrum arose with ubiquitous devices like the original Mercury, however. They were not natively integrated with the enterprise's communication and collaboration platform. For a Microsoft Office shop, that meant Crestron's original Mercury device was "dumb" to the system. While it
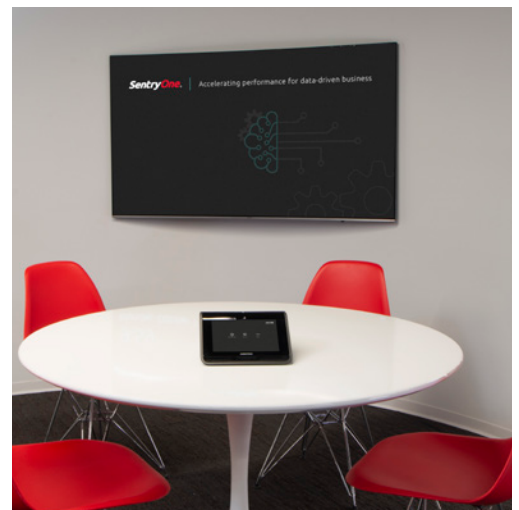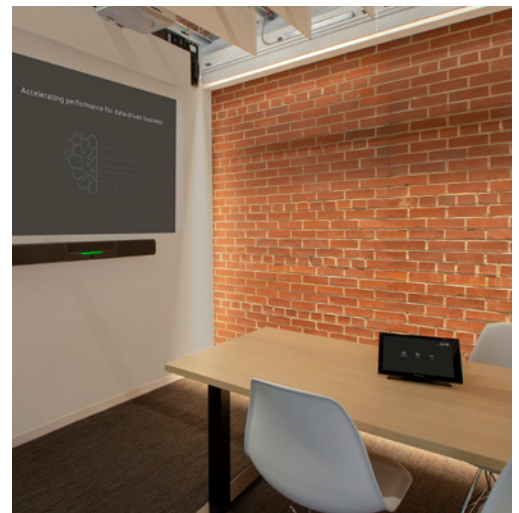
functioned perfectly well as a unified communications hub, the device itself was not aware of Microsoft Teams, nor was Microsoft Teams aware of it.

Working with Microsoft, Crestron introduced a Mercury device that was aware of and integrated with Teams. In an all-Microsoft environment this device met the need for a one touch to join Teams experience, adding to user convenience and manageability of the device and the conference room.

Even in an all-Microsoft environment, however, the flexibility to support any collaboration platform was important to some enterprises. In many businesses, conference room users needed to connect via whatever collaboration platform required to talk to their customers, vendors, or partners. But they also wanted the advantages of a table console that was Teams-aware.

The Resolution

The 2020 introduction of Crestron's UC-MX150-T system addresses the Teams integration opportunity while flexibly enabling most UC platforms. This solution also provides the flexibility to accommodate these new Teams features and functionalities as they are introduced. The tabletop Mercury box enables the one-touch start of a Teams meeting as shown via the schedule displayed in the console. For meetings on a different communications platform, a user connects their laptop to the Crestron Flex system to seamlessly switch to that application. When the laptop is disconnected the UC-MX150-T returns to its native Teams environment.

In terms the CIO would appreciate, the UC-MX150-T works, it works well with Teams, and it is easily supported. Crestron still provides the option to manage and provision the device via its cloud-based IoT services. When Microsoft updates Teams the UC-MX150-T is also updated. And the console still provides a persistent occupancy awareness sensor that can assist enterprises with a better understanding of when its conference rooms are being occupied.

The workplace models that will emerge for this decade will put a lot of pressure on enterprises to make more efficient use of the time available for convening people in person. Consequently, conference rooms will get new scrutiny to show how they enable people to most efficiently meet together. These new workplace models will also need to support ad hoc and remote collaboration. The combination of the Crestron UC-MX150-T and Microsoft Teams is a compelling way to meet all of these goals.