

Project Closeout Report

Project Name: Zoom Voice @ NDSU and NDSCS

Institution: North Dakota State University and North Dakota State College of Science

Business Unit/Program Area: Information Technology

Project Sponsor: Marc Wallman

Project Manager: Jason Blosser

Objectives		
Project Objectives	Measurements	
	Met/ Not Met	Description
1.1: To provide a new solution that meets the current core telecommunications needs of end users such as incoming/outgoing calls, receiving voice mail, conferencing, and fax capability.	Met	1.1.1: Monitor usage to verify services are being utilized based on the input from departments or groupings identified.
	Met	1.1.2: Gather feedback from staff and faculty by releasing a survey to assess the experience from the first two months of using the new phone system.
	Met	1.1.3: Monitor the number of support tickets generated related to the new phone system to identify common core telephony issues and develop a necessary action plan.
1.2: To provide a new solution that meets the current advanced call functions for end users such as auto attendants, call flows, toll-free service, etc.	Met	1.2.1: Monitor usage to verify services are being utilized based on the input from departments or groupings identified.
	Met	1.2.2: Gather feedback from staff and faculty by releasing a survey to assess the experience from the first two months of using the new phone system.
	Met	1.2.3: Monitor the number of support tickets generated related to the new phone system to identify common advanced call function issues and develop a necessary action plan.
1.3: Integrate systems and applications identified to be in scope.	Met	1.3.1: Integration of Zoom Phone into NDSU's identity management system for automated provisioning and de-provisioning functions.
	Met	1.3.2: Integration of Zoom Phone into NDSU's location services systems to automatically synchronize physical location objects with Zoom for effective e911 identification for on-campus, university network-connected calls.
	TBD*	1.3.3: Integration of Zoom Phone into NDSU's IT billing system to appropriately charge departments for services such as international long-distance calls, setup services, etc.

* became a separate project.

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Schedule Objectives

Met/ Not Met	Original Baseline Schedule (in Months)	Final Baseline Schedule (in Months)	Actual Schedule (in Months)	Variance to Original Baseline	Variance to Final Baseline
Met	12	12	12	4.4% behind	4.4% behind

Budget Objectives

Met/ Not Met	Original Baseline Budget	Final Baseline Budget	Actual Costs	Variance to Original Baseline	Variance to Final Baseline
Met	\$699,620	\$699,620	\$434,771	37.8% under	37.8% under

Major Scope Changes

1. Moved billing system integration to a separate project that is currently in progress.
2. Soft rollout of SMS functionality.
3. Reduction of spare DID phone numbers for operational cost savings.

Lessons Learned

When developing a transition plan, have the vendor provide resources that have worked explicitly with your legacy environment and have them provide references of like customers who have done the exact same strategy successfully.

E911 considerations for cloud providers can be less exacting than what was available in an on-premise system so understanding the differences and potential limitations is important.

Cloud-based voice systems are based primarily on users whereas traditional PBXs are based primarily on stations. This provides a challenge when accommodating departments that may have only had one phone line that was used as a person's individual line and the department's main line depending on context or publication. Also, moves/adds/changes (MACs) are very different in a user-based model.

Analog dial tone using gateway and ATA appliances is not as streamlined or coordinated between gateway appliance vendors and cloud providers. This can require more coordination resources from the customer than anticipated and be frustrating to resolve issues. Even an advanced maintenance package may not fill the gap. Exploring in great detail with both the cloud voice vendor and gateway vendor on implementation, configuration, and support responsibilities and assumptions is crucial.

Bring in desktop engineering and support resources early in the project because fault-isolating voice problems on computers can be more challenging in a cloud environment than a traditional telephone set. Also, nomadic E911 utilizes network protocols and individual computers in ways not experienced with traditional PBX E911 solutions and can require a team of experts made up of folks from voice, network, identity management, security, desktop computing, etc. units.

Success Stories

At its peak, the Telecommunications department had five people for technical operations of the Avaya environment. Over the years that has whittled down to three, but required additional vendor support resources. As we closed the Zoom Voice Project two of our team retired (not due to the project!) and over the last two months we have been able to run NDSU's baseline phone operations with one person. This is not sustainable long-term, but does show the significant improvements in efficiency the new Zoom cloud voice environment has over our traditional Avaya one.

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Multiple NDSU staff have commented on how easy the Zoom app is to use and like how it can be used on personal devices when they want without needing to procure a separate NDSU cell phone.

Many departments have appreciated that Zoom Phone allows them the ability to fine-tune their departmental main line experience (who can pick up voice mail, how many rings before going to voicemail, how calls can route between department colleagues, etc.) without requiring tickets into IT.

We utilize a phased approach based primarily on department migrations as opposed to implementation on a more traditional building or site basis. This allowed us to move entire departments together regardless of geographic distribution.

NDSU provided Zoom with extensive feedback on their nomadic E911 services that led to changes in their app and the implementation of a new reporting tool.

NDSU incorporated the NDSU project team into its project meetings to allow for a high-level of cross-learning and coordination. NDSU also had staff that attended NDSU telephone administrator meetings.

Leveraging NDSU's identity management system, users who have exited NDSU have their services turned off and licenses put back into the pool for more efficient use of licensing.