**VoIP Across a Multi-University Consortium**

**Many institutions and early adopters of Voice over IP technologies have reaped the benefits of cost-savings and greater flexibility associated with this communications technology. The challenges and benefits of expanding this technology across a consortium of independent Universities however are just now being realized. Three years into the post-Centrex world, the unique social and technology needs as well as benefits of aligning with other institutions are explored.**

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The physical and logical management of a multi-university VoIP network poses numerous challenges. These challenges are enhanced when each university runs under its own autonomous IT units, with the only common ties being members of the Georgia Public University System. Each university functions under separate budgets, separate personnel allocations, and separate physical infrastructures. Adding to the complexity of sharing a technology system of this nature is that each university contains its own physical network, as well as rules and regulations on IT policies, best practices, and management strategies. With so many different segregated traits, this presentation will explore the challenges of pulling each unique network and social environment together in attempts to integrate each university into a shared technology communications system. With each university having its own stake on the project, suggestions on how to integrate each university's staff into the project are explored. Additionally, issues such as technical and financial responsibilities and the sharing of personnel resources are also discussed. In the end, the biggest challenge was to design and deploy a system that would substantially cut operating costs for Telecommunications at each university.

In late 2007, five universities with 7 separate campuses embarked on a collaborative effort to implement a shared, multi-university Voice over IP system. Studies were conducted to examine the fiscal feasibility of such a collaboration, as well as examination of each university's networking and telecommunications layout to explore if such a project would succeed. Experts in the VoIP field were brought in to explore what major changes, if any, would need to take place in order to implement a non-Centrex voice platform. Representatives from the five universities in the University of Georgia system were involved in planning the fiscal sharing as well as determining the physical layout of where to place the technology equipment housed on each campus. A system where each campus would still be able to operate in the event that another campus' network went down was essential. The determination to house the core equipment at Armstrong Atlantic State University, and have the other campuses house the secondary equipment required for backup redundancy was chosen as the best way to save on costs, and ensure that all parties were represented equally with the same amount of resiliency. Of equal importance, AASU was chosen as the core site due to its central proximate to most of the universities in participation. AASU also has the most robust networking architecture due to its moderate size, as well as key inputs from the University System of Georgia provided Peachnet fiber backbone that would serve as the core for needed VoIP traffic. Each university worked with the VoIP project architects to ensure that the individual campus interests were protected, and that the system would be stable across the board. Additionally, voice-mail concerns had to be addressed, such as how large did the system need to be, who would manage it, and how would updates be handled for all aspects of the system.

Eventually, due to the scope of the project, a dedicated VoIP manger was hired that would be the central contact for all campus to interact with on a day to day basis, as well as head up any billing charges, and represent the institutions when contact to the vendor needed to take place. On the financial front, CBO's and presidents from each participating university discussed the details as far as the capital loan needed for such a substantial project, and how future charging and infrastructure costs would be split among the institutions. After an agreement by all parties, it was decided that again, the main housing institution, Armstrong Atlantic State University, would be the dissemination point for all charge backs on the accounts. Weekly meetings were held with the IT management staff during the project implementation that took approximately three months to complete at all seven locations. Conference calls with all universities continued for the first year on a weekly basis after launch day to ensure adequate representation of issues was being fulfilled. Currently, monthly calls are scheduled on an as-needed basis.

In terms of university benefits, three years into the project has seen a reduction in costs per phone line on the order of 60% at each participating institution. Additionally, the consolidation of telecom responsibilities from multiple entities across each university into just one or a few individuals on each campus has increased the eligibility of staff re-assignments for other needed projects. Numerous features not possible before, such as free inter-campus, inter-university phone calls is now a reality, further cutting the costs on long distance charges. Additional features only available with VoIP are now being deployed at each university, such as expanded conference calling, call trees, emergency paging and cover groups.

In terms of challenges, the pains of trying to integrate one system across five completely autonomous networking environments has been very eye-opening. Any minor weakness in a networking environment is often brought to light very quickly when using a technology that must operate across a very stable networking architecture. The implementation forced each university to uncover their networking weaknesses and resolve or suffer the fate of poor call quality.

Without a doubt, implementation of a shared VoIP and voice-mail system has allowed the expanded functionality of a communications system that is now mature in terms of allowing campus users to communicate with fewer boundaries. The cost-savings are already becoming apparent. The social networking aspects of having 5 unique groups of IT staff working together on a frequent basis has allowed even more ideas and suggestions for IT resolutions to take place. However, it must be pointed out that continued challenges do exist. First, and probably foremost is the difficulty in diagnosing networking issues or infrastructure issues on a campus environment to which you have no formal access. This requires the full cooperation of remote IT staff and a transparency into their networking architecture that is generally not encouraged in day to day operations. Trust in project goals and security principles is essential , and a mutual understanding by all parties on what is expected by each IT group is key. This partnership needs to be outlined early in the project, with a clear understanding of what is to be expected by each member in terms of access needed into their university, and the ability to know that they often will need to be the hands and feet of the central host university.