

Taking a Byte of Telephony Costs: UAA Migrates to VoIP

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EXECUTIVE SUMMARY

In 2006, the University of Alaska Anchorage (UAA) upgraded the telephone system at its main campus in Anchorage from a traditional private branch exchange (PBX) architecture to a Voice over Internet Protocol (VoIP) system. This case describes the organizational decisions that led to the change; the scope and the process of upgrading; and the current status of the new VoIP system. The actual migration to VoIP was completed less than a year after the start of the project. The transition process went smoothly. User satisfaction with the performance of the VoIP system is very high. Based on extensive interviews with decision makers and the technical personnel involved, this case also describes financial considerations (including “creative” ways to stretch a limited budget), outsourcing considerations, training related issues, as well as lessons learned.

Keywords: Computer Systems Implementation, Conversion, Outsourcing of IS, Systems Implementation, Voice Messaging, Voice/Data Sharing, Voice Over Internet Protocol,

ORGANIZATIONAL BACKGROUND

The University of Alaska Anchorage (UAA) is one of the three universities within the University of Alaska system. A public university granting undergraduate and master’s degrees, UAA just celebrated its 50th anniversary in 2004. Founded originally as the Anchorage Community College, the institution developed a broad curriculum, involving close to two hundred programs of study, including certificates, two year programs, four year programs and graduate (masters) programs. UAA is already offering Ph.D. degrees in collaboration with other institutions, and is working on developing its own doctoral programs as well. Although the university operates as part of the University of Alaska system, most organizational decisions are made locally. UAA’s 1,200 faculty and 1,200 staff serve 20,000 students at a main campus in Anchorage and four community campuses throughout southcentral Alaska (Kenai Peninsula College, Matanuska-Susitna College, Prince William Sound College and Kodiak College – on Kodiak Island, in the Gulf of Alaska). The community campuses and their satellite locations serve around 1,500 students each.

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Information technology (IT) support is provided by a centralized group in Anchorage with distributed IT personnel at each community campus. ERP and designated wide-area network services are provided to UAA by the University of Alaska system office in Fairbanks. The University of Alaska system licenses the SCT SunGard Banner ERP product suite. The following application modules are presently in use: Student, Financial Aid, Finance, and Human Resources. The UA System Office operates a centralized deployment of this ERP configuration to each of the three member universities. All other enterprise services and technology infrastructure are supported locally.

UAA prides itself for being at the cutting edge of educational technology, as part of its mission to serve students over the large and relatively sparsely populated area of the state. The campus faculty make extensive use of Blackboard™, Elluminate-Live!™ and other instructional technologies. Many courses are taught electronically, with a growing number being offered entirely as distance-delivered courses. The history of distance education at UAA goes back to the days of the correspondence courses (some of which still survive today in the same format). Nowadays, many distance-delivered courses are taught on the web and via video-conference. Audio-conference and mail (both electronic and US Mail) are also used due to the technology limitations in some of the remote communities in the state (Hoanca and Mock, 2007). One infrastructure component that was in major need of upgrading at the turn of the century was UAA's campus telephone system, which was based on PBX equipment that was approaching obsolescence. The case describes the transition from the PBX to VoIP-based technology.

SETTING THE STAGE

VoIP is a technology that allows the transmission of voice communications over data networks. The technology is considered part of digital convergence and unified communications, a communications revolution that brings to users low prices, increased flexibility and added functionality. Digital convergence refers to the melding of voice, video and data. Unified communications seeks to consolidate all forms of electronic communications within a single platform. Even into the early 2000's, voice, video and data used to be delivered and billed differently, over different types of communications channels, in different systems sold by different vendors. Introduced at different times in the history of technology and evolving independently and at different paces, voice, video and data naturally converged when voice and video moved to digital formats.

VoIP is the technology of transmitting voice over digital data networks, typically using the Internet Protocol (IP). The low cost and flat rates are familiar features to users of online VoIP services (for example, as provided by Skype or Vonage), contrasting to the traditionally higher and metered (per call) charges for regular long distance phone calls. The challenge in transmitting voice over data networks is to ensure that the delay of the voice packets is small enough to avoid degrading the transmitted voice signal. This small delay is measured by the so called Quality of Service (QoS) of a network.

VoIP cost savings arise mainly because data connections are billed differently from voice connections. While traditional long distance voice connections are charged according to the distance between end points, the call duration, and sometimes even the time of day, data connections are only charged a flat rate for a given bandwidth (transmission rate in bits per second). Although some data connections are charged for the amount of data transferred, VoIP requires such a small amount of data that such metered charges are essentially zero. Additionally, traditional voice calls over the telephone network are subject to several federal, state and local taxes and fees, while data connections have yet to be charged such taxes and fees. Interestingly enough, taxes

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