



# CASE STUDY PHOENIX ELEMENTARY SCHOOL DISTRICT

*Investing in a state-of-the-art Voice-over-IP system proved more economical and efficient than continuing to upgrade the existing PBX phone system.*

## the challenge

Phoenix Elementary School District sought to put a phone in every classroom to meet safety, security, and productivity needs for its teachers, as well as comply with state recommendations for E-911. There was a concern for the lack of safety and inadequate communication for the teachers and students. This included the inability to dial 911 from a classroom and have the room number displayed to an emergency operator. Other common problems included bottlenecks at peak calling periods and no voice mail with the exception of a few locations.

Maintaining a phone system for PESD's 18 schools had also become quite expensive. The district had an assortment of systems and hybrid PBXs purchased over time from different vendors. The aging equipment resulted in a need to outsource expensive specialized technical support. High monthly phone bills were the norm due to recurring costs for voice mail, Centrex maintenance, excess line charges, as well as charges from other basic calling features purchased from the local phone company.

NIC's challenge was to determine whether it was a better investment for PESD to continue to upgrade the existing equipment, or convert to newer Voice-over-IP technology.

## the nic solution

NIC approaches each job from a Total Solution perspective. Looking at the Total Solution positively influences the total cost of the job, support, maintenance, long-term planning, and future growth requirements. This approach lowers your total cost of ownership and produces a more favorable ROI.

As part of the initial design consulting process, NIC's consultants performed a Return On Investment analysis comparing an upgrade of the current PBX-based system versus installing a new



## THE ONLY SOLUTION IS A TOTAL SOLUTION™



*The VoIP system lowered the district's annual operating cost and provided an ROI in 37 weeks.*

Voice-over-IP system throughout the district. A new Voice-over-IP system required slightly higher initial investment, but produced a much lower annual operating cost. VoIP also provides more calling features, functionality and management control. ROI payback for the VoIP system was 37 weeks.

### VoIP system features

The new system is comprised of 1,028 Cisco Voice-over-IP phones, including one phone in each classroom. The new VoIP system is programmed to provide the following features at no additional monthly cost:

- Voice mail boxes to each extension
- Direct dial capabilities for each phone
- 4-digit dialing among employees or across the district
- Enhanced 911 call-out and identification features

In addition, Caller ID was provided through the local phone company on 69 lines.

VoIP also offers convenience and portability. Teachers often change classrooms between school years. With the new VoIP system, a teacher simply carries his or her phone to the new classroom and plugs it in. Their personal phone number remains the same and reprogramming is not necessary.

The new system provides relief from call routing bottlenecks, busy signals, and clogged outside lines. The network effectively provides additional phone line capacity throughout the district without purchasing additional phone lines from the local phone company.

### training

Training is critical to the success of any major, complex IT program. NIC extensively trained users, administrators, and IT personnel. The training provided was key to creating a positive experience for users of the new VoIP technology, high user acceptance, and maximum user productivity from the system.

In addition, while the system was being installed and personnel were being trained, existing phone users had both old and new phones on their desks through the transition period. This provided continuity of service, minimum disruption of work for employees, and an easier technology transition.

### reduced costs

The system is now managed by district IT personnel. This is in contrast to the previous PBX systems that were complicated to maintain and required expensive, specialized outside technicians to handle even simple service requests.

Because the district previously had wired each classroom for computers, it was not necessary to drop additional phone cabling to each classroom and add backbone cabling, conduit, and raceways.



*NIC delivered the project within budget on an accelerated schedule of 6 months. The bulk of work was done around school hours to minimize disruption of classes.*

Calls were handled over the classroom's existing data lines. Essentially, VoIP technology enabled NIC to provide phones to nearly a thousand teachers who did not have phones in their classrooms—without having to rewire the classrooms.

### an integrated plan

A characteristic of VoIP telephony is that voice and data can be carried over the same ethernet cabling. However, the district's existing data network was installed several years prior in support of a minimal five computers in each classroom. It is a T1 star network based on a frame relay cloud configuration. As such, it is not suitable for the traffic created by VoIP system, nor was it designed for the ruggedness and reliability necessary for phone transmission. The scope of NIC's RFP contract allowed for the installation of a T1 point-to-point voice network that stands along side the existing data network. This provides the district with an upgradeable platform for future voice/data integration, especially as more computers are added to each classroom as education trends predict. In addition, the VoIP infrastructure provides a rugged backup network for the district's existing data network in case of emergency.

### project schedule

The solution was delivered at an accelerated pace—within 6 months. It was on schedule and on budget. Furthermore, it was delivered during the school year, with the bulk of on-site work taking place evenings and weekends to minimize disruption of teachers and classes.

The ability to stay on schedule, often in the presence of difficult working conditions, is a hallmark of NIC. Our track record of honoring contract commitments is facilitated by:

- Sophisticated project management software and processes developed specifically for managing large, complex projects
- Web access to all team players
- Unique structure of the team, providing depth of specialists and high involvement by project management, lead engineer, specialized technicians, voice mail specialists, and trainers
- Complete in-house capabilities to design, implement, and support integrated voice/data/security/video network systems

### summary

NIC provided Phoenix Elementary with a Total Solution for immediate and long-term objectives. This approach required a broad understanding of an organization's entire network system. NIC took into account Phoenix Elementary's existing technology capabilities, not just its phone system, and how the system could be integrated with VoIP Telephony. NIC considered the cost of a new system



*NIC provided Phoenix Elementary with a Total Solution for VoIP that can be integrated with its existing technology system.*



*(left to right) Terry Pohlsander, Integration Service Manager, NIC; Kirk Brown, Chief Information Officer, Phoenix Elementary School District; Phil Crippen, Sr. Network Engineer, NIC; Brent Graves, Account Manager, NIC*

*THE ONLY SOLUTION  
IS A TOTAL SOLUTION™*

and its ROI, as well as other issues such as ease of use, employee training, maintenance, and the ability to efficiently upgrade the network as necessary.

The project met or exceeded all RFP contract requirements including an on time, on budget delivery. High recurring phone costs have been shaved from annual budgets. Staff, students and parents can communicate better, and they have peace of mind that emergency situations can be quickly relayed to the proper authorities.

This was the first major program NIC handled for this client. This program resulted in continuing business and an ongoing relationship with Phoenix Elementary School District.

### **about nic**

Network Infrastructure Corporation is a single-source provider for all elements of a complex technology infrastructure program. Consulting offered through NIC's Professional Services Group includes technology master planning, design and space planning, technical site assessment, and bid management. Infrastructure services include data, voice, video, security, wireless, sound reinforcement, paging, web services, building systems control, and structured cabling. Support services include training, maintenance, network administration, and warranty service.

The corporation is located in Arizona and California. National divisions include NIC Professional Services Group and NIC Wireless Group. Niche markets are education; state and local governments; health care; hotels and casinos; and mid-sized private businesses.

