

Hendrick Hudson – A Case Study

By Steven Moskowitz

As the school year opens, I would like to write about one of the districts I have been working closely with: the [Hendrick Hudson Central School District](#). As the project manager assigned to the district from the [Lower Hudson Regional Information Center](#), I have had an opportunity to work with this dynamic district to implement a successful technology program. Hendrick Hudson is a school district located in Montrose, New York, in Northern [Westchester County](#).



Several years ago, the district began a partnership with the LHRIC to develop and implement a long-range technology plan. As the district completes phase IV of their first technology plan, they have a lot to be proud of. The following are some of the highlights of what was accomplished in a four-year period:

- *The creation and implementation of a district wide technology plan.*
- *The installation and use of over six hundred computers in the district.*
- *The installation of instructional and administrative networks district wide*
- *A district wide WAN.*
- *Extensive staff development in every building.*
- *An RS/6000 will be installed shortly in the district office, automating student and financial systems.*
- *The automation of every library in the district, accessible from the libraries and classrooms as well.*
- *Connections to the Internet from every computer in the district.*
- *Computer clusters in classrooms and application labs throughout the district.*
- *District wide WWW server with separate home pages for every school.*

These accomplishments are due to the tenacity of many people involved with this project, including district personnel, students, community members, and BOCES support personnel. The following are some highlights of the past four years and a look into the future.

The Technology Plan

With the help of [Peter Reilly](#), director of the LHRIC, the district created a four-phased technology plan in 1994, which would serve as the blueprint for implementation. The technology planning committee consisted of teachers, administrators, board members, and parents. The committee used several survey instruments to gather various types of information from district personnel pertaining to technology including attitudes towards computers, individual proficiency, goals for instruction, and more. Moreover, the students were surveyed as well to their attitudes towards technology, computer ownership at home, and levels of interest. The results of both surveys were overwhelmingly positive towards the use of technology and the committee felt that both groups would easily adapt to using computers in the classroom if they were available.

Multiple goals were recommended in the plan including some of the following:

- *Every student and teacher will be insured equitable access to all appropriate technology resources.*
- *The school district will work with the community to assist and support the integration of technology into the district and maximizes the benefits for the community.*
- *The district will develop a fiscally responsible plan that fully integrates technology into the district.*
- *A district wide technology committee should be maintained to oversee the implementation on the technology plan.*

In addition, other recommendations were made for ongoing support, assessment, staff development, and implementation strategies.

As a result of a good working plan, the district planning committee was able to determine their technology needs. With the help of the LHRIC, a budget was developed with equipment costs, staff development needs, technical support, and other necessary items. The district passed a technology bond to initially fund the program. A four-phase approach was used to purchase and implement the technology plan.

Implementation

The district began to implement the technology program with an aggressive four-phase approach. With the help of project managers from the LHRIC, the program began in earnest. Computers were purchased for classroom use and local area networks were installed in libraries and secondary labs.



Teachers began receiving training in basic computer use, applications, and curriculum integration. Currently every school has an instructional network, running [Novell](#) 3.12 and the [IBM](#) I-Class management system. Applications include [Microsoft](#) Office, [Netscape](#), E-mail, [Mandarin](#) library automation, and a variety of other instructional applications. Two of the schools have administrative networks, and plans are ongoing to install an [IBM](#) RS/6000 in the district office for [Pentamation](#) student and financial software. Most classrooms in the district have one or more computers installed. As the district completes phase IV of their technology plan, they have opened the technology program to the world via the Internet. Phase IV included cabling every classroom within the district and installing a wide area network including all five schools and the district office. Teachers and students have access to over 600 computers with a wide variety of discipline specific software.

Training/Staff Development

The LHRIC worked with the district to develop a comprehensive and flexible staff development plan. The training was tailored to meet the specific needs and the skill set of the district. Since the needs of the instructional personnel were different from administrative personnel, two training models were developed.

The Instructional Model

The district realized that it was critical that training be ongoing and flexible. Facilitators from the LHRIC were assigned to every building to work with teachers individually and in small groups. The training ranged from basic skills training to curriculum integration. "Teachers have the opportunity to have basic skills training, such as creating a grade book or a register. After the basics, we can go on to work with them integrating technology into the curriculum," says Mary Lynn Collins, a facilitator from the LHRIC. Mary Lynn was one of several facilitators who worked with the district this past year. A training schedule was developed for the school year with measurable goals and objectives. Whole group training sessions were established consisting of groups of four to six teachers. The training sessions included basic skills training such as using and managing files and technology awareness. Teachers were exposed to sample technology projects that could enhance lessons in their classroom. Applications included tool software such as Microsoft Office, Hyperstudio, and CD-ROM reference materials. Teachers were taught to use sound and graphics in their applications.

The whole group sessions were supplemented by individual training sessions where teachers could get a wide variety of assistance on projects. Some samples from Mary Lynn's training log were as follows:

- *"Using Grolier's multimedia, we captured images and text, placing them in Power Point for a slide show on the countries we are sending e-mail to."*
- *"Demonstrated how to use Easy Books to both classes. Taught Mary how to setup a table in Word for creating rubrics."*
- *"Showed Joe various Math software and discussed how to manage it in his classroom."*
- *"Recognize how to use Student Writing Center with the class for a poetry unit."*
- *"Showed the teacher Access and discussed setting up a database where the entire school could use it for a reading record for portfolios."*

The goals for this year will consist of training every elementary teacher on the application and use of the network system, curriculum integration, and other discipline related topics such as Internet for secondary mathematics. The district is also working with both the [New York State Learning Standards](#) and local standards in addition to performance assessment, integrating technology into both.

Administrative Model

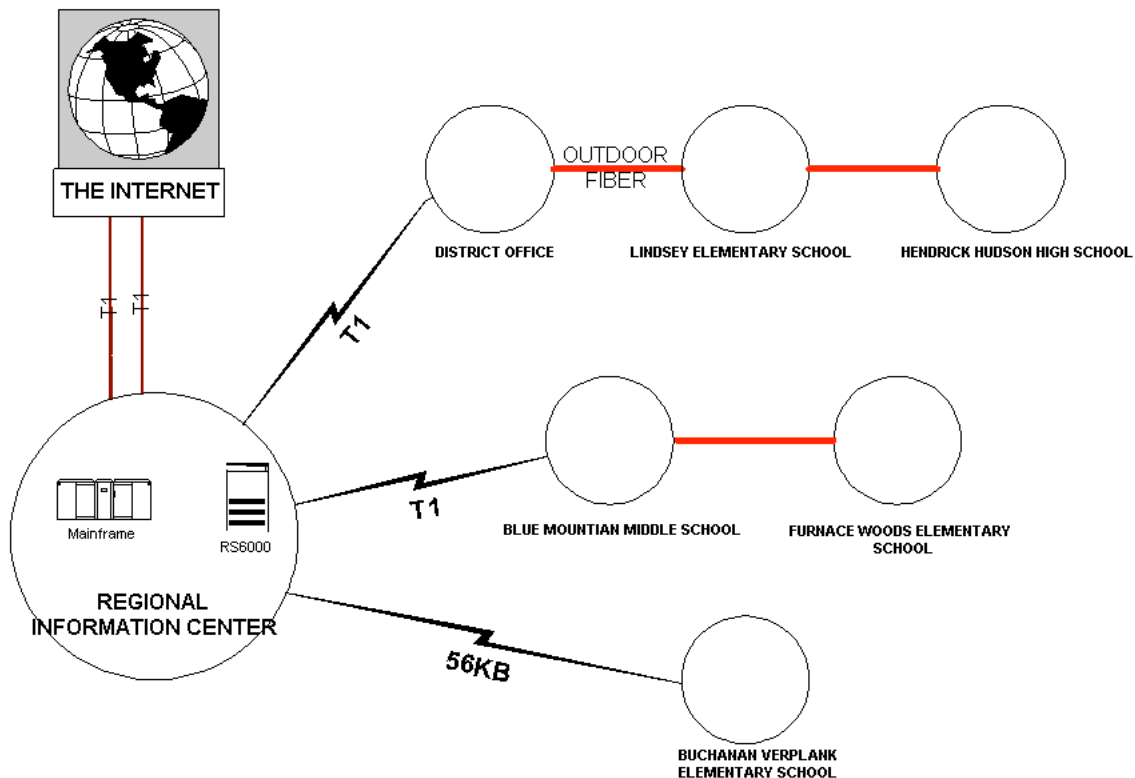
"I am excited about the wide area network, how it will be able to help our students. We now have the tools to prepare our students for the next millennium," says Nancy Bocassi, Assistant Superintendent for business. Ms. Bocassi was instrumental in facilitating the project. On the administrative level, the district has chosen to work with the Pentamation system for student and financial systems. A local area network was installed in the district office automating many functions. The district is currently running the Pentamation software from an [IBM RS/6000](#) located at the Regional Information Center. Shortly, the district will have their own RS/6000 installed in the district office, connected to every school office. With all of this new technology, training was an issue and needed to be as inclusive as the instructional model for classified personnel. Staff members from the LHRIC held training classes on and off site in computer basics and applications. Telephone support is available to classified personnel as well.

Infrastructure and Cabling

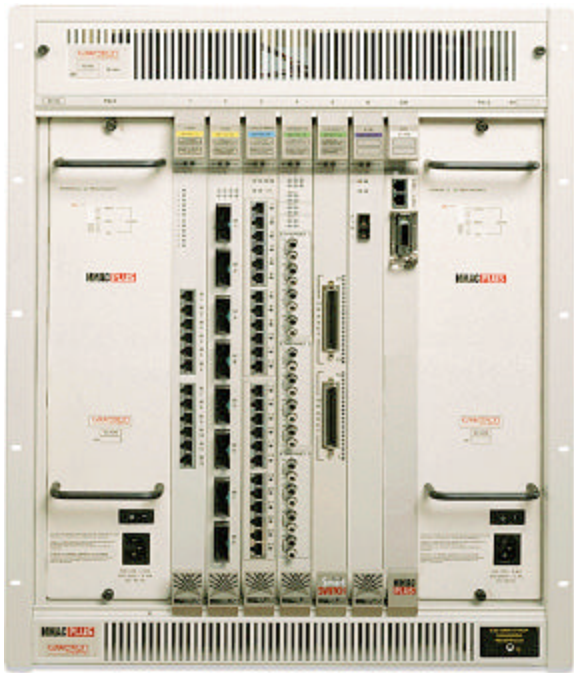
The design of the infrastructure was handled by the LHRIC. In a project of this scope, proper planning was the key. The district is located on three campuses. The first campus contains the Hendrick Hudson high school, Frank G. Lindsey elementary school, and the district

office. The second has the Blue Mountain Middle school, and the Furnace Woods elementary school. The third has the Buchanan-Verplank elementary school. The proximity of the schools' location to one another on each campus was an ideal model for outdoor fiber optic cable. A loose tube, gel filled, outdoor rated 12 strand multimode fiber optic cable would serve as the backbone for the outdoor plant. With fiber cable trenched under the athletic fields, it was possible to link these schools together with one [Cisco](#) router located on each campus. The picture on the right shows the proximity of the district office (rt.) to the Lindsey school.

HENDRICK HUDSON WIDE AREA NETWORK



First, detailed plans were created that contained indoor and outdoor cabling specifications and locations. After these plans were reviewed and approved by local district personnel, BOCES project managers facilitated a public bid on behalf of the district and awarded a contract to a local vender for the indoor and outside cabling work. BOCES oversaw the installation of the cabling assuring it was installed according to specification. This past summer, outdoor and indoor cable was installed. Fiber optic and/or Enhanced category 5 cables were installed to every location in the district. All classrooms received two data cables and an additional category 5 cable for future video applications. In addition to installing cables in classrooms, other areas of the buildings were cabled including auditoriums, administrative areas, gymnasiums, and even boiler rooms (yes, there is even software for school heating systems!)



The network electronics selected for the project were [Cabletron](#) switched Ethernet. A combination of MMAC plus and SmartSwitch 6000 chassis were used. One switched port will be allocated per classroom, to be shared inside the classroom with a multiplexing device such as an MR9-T. The backbone is fast Ethernet, running in full duplex mode at 200 MB. Plans are underway to install network management software, a proxy server, and setup a virtual LAN.

Support

The [Regional Information Center](#) provides technical support and consultation for the entire project. A full time BOCES technician works in the district, handling

support issues as they arise. This person is part of a larger support team that has considerable expertise in these hardware and software platforms. By placing a full time person in the district, the district is entitled to a substantial discount on the LAN support provided by the LHRIC. In addition to technical support, the RIC provides ongoing consultation to the district.

Next Steps

As the district completes their first technology plan, they are already planning for the future. One of the key elements to the success of the project was the commitment of the technology committee. Working together for over four years, they achieved their goals. The district is looking for the next plan to be much more building oriented, with technology committees established in each of the five schools and the district office. "The 97/98 school year closes the door on our first technology plan while opening the door to a second plan which will contain instructional technology that was not even dreamed of in our original plan," says Ms. Joan Thompson, Assistant Superintendent for Instruction and Personnel. "Continuing to add clusters of computers to every classroom, making available digital cameras and tele-conferencing equipment will all be part of our new planning process. Hendrick Hudson began working with the BOCES RIC in 1993 and our partnership has increased our positive use of instructional technology exponentially."