

*Seamless – Faultless – Sound – Cutting-Edge – Amazing – Awesome!*

### *Technological Advances for Hardin County Schools*

It is truly fascinating! Hardin County Schools have a plethora of technology which is working behind the scenes- so to speak- each day, delivering a variety of technological services that enhance the abilities of educators to provide an equitable and excellence-driven education for the children of our community. With the recent renovation and new construction projects, the opportunities to enhance and advance the existing technological services in Hardin County Schools were evident. To begin, a district-wide, centrally managed Wi-Fi network was installed. With this new network, all Wi-Fi in all HCS are managed from one simple web interface, and all access points (APs) are powered across the network, eliminating the need for power outlets and cables and reducing overall energy usage. Also a more robust security protocol was launched that allows only authorized users to connect. This network is practically seamless and provides a reliable tool that is as versatile as the teachers, support staff, and students it serves. Along with a centrally managed network, Hardin County Schools (HCS) now have a centrally managed synchronized clock system. Every clock is synchronized to a central time server (every clock shows exactly the same time). Clocks communicate via the Wi-Fi network, making the entire system completely wireless. Clocks synchronize every night, so they always have the correct time. The system automatically adjusts for Daylight Savings Time changes. Plus, with the 7.2V lithium batteries installed, the clocks should run for about seven years before there is a need to start replacing batteries! Currently, only the two new schools have these clocks, the plan is to bring the other schools and offices on to the system as their existing clock systems need replacing. Making every minute count during the school day is easier with a faultless time-keeping system.

What additional sound technology enhances the productivity of the school day? The answer is a “Unified VOIP Phone System.” The magic of this technology can be experienced as all internal (inside a school or one school to another) calls use the data network, leaving the phone lines available for external calls. To further ensure the availability of phone service, in the event of a data network outage, all calls are automatically routed across external lines. All schools and school offices are connected by the VOIP phone system, enabling all users to just dial the extension to reach any phone in HCS. Every phone extension has voicemail service, and calls can be sent to a teacher’s voicemail without disturbing his/her class. Also communication inside the schools is enhanced as the phone system also controls building-wide intercom and paging events. To guarantee phone usage is accessible even during power outages and other similar issues, power protection to prevent system damage due to power surges/brownouts, battery backup provides power in event of utility outage. Communication, one of the keys to the involvement of the community and schools together, is enabling all to provide opportunities for excellence in education.

HCS are on the cutting edge of technology that has reached a goal of “Hardware Standardization” across Hardin County Schools (HCS). This equity has only positive implications and applications across the district. With the same phone system, network system, clock system, power protection system, the use of the same replacement parts district-wide is more easily monitored and implemented, allowing for faster, more efficient maintenance while reducing down-time, resulting in a reduced total cost of ownership (TCO) for the system and fewer parts to stock. Overall this simplifies training for both users and tech support throughout the district. A support technician is in every building **at least 3 days** per week providing help and expertise to enable a more efficient use of technological services. This equitability across the district allows more focus on the goals and missions of HCS to be pursued with confidence.

Matt Colburn, district-wide Technology System Engineer, Riley Patterson and John Mildender, Computer Technicians, under the leadership of Mr. Stephen Johnson, Director of Technology, bring to Hardin County Schools an advanced level of expertise and skills set that enable swift and sure responses to requests and problem-solving opportunities. While the Director and the computer technicians came onboard recently, Matt has worked for HCS for five years. From the beginning, Matt Colburn was the “go to guy” for the technological needs of HCS. From the inception of the construction and renovation projects, Matt has been instrumental in engineering and designing the HCS network.

Matt Colburn is based at East Hardin Elementary School. East and Northside were designed to house a centrally managed network through a Centralized Telecommunications Management Room. From this room he can manage and monitor all of the following in both new schools:

1. Data Network
2. Phone System
3. Advanced Fire Alarm System
4. Security and Video Surveillance System
5. Synchronized Clock System
6. Power Protection – Generator

When asked, “Matt, what role did you play in all of this?” He explains, *“I did the primary conception and design of the data and telecommunications infrastructure upgrades in all of Hardin County's Schools and the data/telecom networks in the two new facilities. I was invited to be a part of the team that worked with the architects and construction companies throughout the building process. My primary responsibility there was to make sure that both our new and our renovated facilities were wired to support our existing systems as well as the systems that we planned to deploy in the new schools.”*

“So, Matt, did you do all this by yourself?”

*“Goodness, no! We were blessed to have many quality people assisting us throughout the process, from conceptual designs on paper all the way to powering everything up and testing it.*

*Our Sales and Support Team at CDW-G, directed by Mr. Phil Oberholtzer, provided us (at no charge) hours of essential design and engineering assistance. Their help allowed us to take all of our data*

*network needs and our telephone network needs and combine them into one reliable, robust, secure, and expandable system that will meet all of our voice and data needs throughout the foreseeable future.*

*Charlie and Paul Weaver, and certainly everyone else at Weaver Telephone Service, were instrumental in assisting us with the design and implementation of our consolidated district-wide phone system, insuring that our intra-school and inter-school communications systems are fast, dependable, and up-to-date.*

*In the installation and configuration of our data/telecom systems, we received the services of Mr. Rom Jadotte and Mr. Garth Smith, of Automated Systems Consulting. Their long hours and skilled handiwork, as well as those of Weaver Telephone Service, made sure that we were operating at 100% on the first day of school, despite the extremely short time we had to get the job done."*

**Amazing!** While all these technological marvels are in place, the classroom is the beneficiary. Even though 95% of classroom technology transferred from closed schools, each of the new schools' classrooms is equipped with amazing classroom technology. For each classroom there are the following technology tools: A Multimedia Projection System that includes a Digital Projector, a 96" diagonal Projection Screen, a 60 watt Stereo Sound System, a Document Camera (brand named ELMO) and a DVD/VHS player combo. Then the Data Network reaches each classroom through 550 network ports and a secured Wi-Fi coverage. The possibilities are endless for the enrichment and reinforcement of students' skills, achievement, and productivity.

Renovated schools include all the other schools. The VOIP phone system is present in all these schools, with the exception of West Hardin, but West Hardin will very soon be installed with the system.

The classroom technology in these schools has been steadily deploying over last few years. The main source of funds generating this deployment has been the Economic Stimulus Funds for Hardin County High School and Hardin County Middle School. Both these schools have "in-house" Technology Coordinators, Levin Edwards, HCHS, and Alaina Clayton, HCMS. The role of these tech coordinators include but is not limited to overseeing those data networks as well as assisting teachers in best practices of integrating technology.

Title 1 funds have outfitted West Hardin, Pickwick Southside, and Parris South, along with other sources, such as the strength of Parent-Teacher Organizations and councils, clubs and organizations providing fundraiser activities. The impact of fundraisers for technology equipment in HCS cannot be proclaimed too much. The involvement of all the community stakeholders and parents is monumental in providing opportunities for HCS through effective and **awesome** fundraising events.

It is truly fascinating, particularly when considering what technological advances in HCS are in the near future. Stay connected, and it will be revealed!