Galway Technology Plan
Two Year Overview

2013-2014

- "Virtualize" Server Infrastructure
- Archive District Email
- Convert from Exchange Email to Gmail
- Convert from Microsoft Office to Google Apps for Education
- Chrome Book expansion
- iPad expansion
- District-wide Wifi + Switch upgrade
- Develop a robust Professional Development Plan for staff
- Improve Communication with Staff, Students, Parents & Community
- Transition from GlobalConnect to SchoolMessenger
- Implement online Help Desk "Ticket" System
- Upgrade every computer in District to Windows 7
- Replace/upgrade computers as needed
- Implement Full Server & Data Backup
- Create a five year technology budget
- Develop BOCES hardware leasing possibilities

2014 - 2015

- Rebuild IP space
- Build a new Domain to replace our current Domain
- Chrome Book expansion
- iPad expansion
- Formalize a Computer/Server Replacement Plan (by leveraging BOCES leasing options)
- Replace the district Phone system with a VOIP system
- Replace the district PA System
- Replace remaining Switching equipment not upgraded in wifi project
- Continue with Server Virtualization

- **Virtualize Server Infrastructure**

Virtualizing Servers is the process of taking one physical server and all of its hardware components and creating them in software form running on another server. This allows us to "host" multiple servers within one physical box yielding numerous configuration benefits while also reducing power consumption, cutting licensing fees and reducing server replacement costs. This is a multi-year project as new servers need to be purchased with the ability to be host servers. Currently we have 3 host servers running 7 virtual servers. We have virtualized 2 of the old Student Management System servers that were end of life and malfunctioning. We have created a new Print Server, a Virtual Management Server, the Maintenance Help Desk Server and a new Infomatic Server that will have our Business software hosted on it allowing us to decommission our current end of life Windows 2003 Server. Virtualization also allows the district to experience an end of life event (hardware failure) and still remain "up" and fully in business.

- **Archive Email**

Federal Law (Freedom of Information Act) requires that all government entities have an archive retaining email and other electronic documents. We have purchased archiving from Gaggle, an online archiving solution that will integrate into Google Apps in Education as we make that transition. The district was previously not in compliance with this requirement.

- **Convert from Exchange Email to Google Apps for Education**

Google Apps in Education is a free service that Google provides to K-12 and Higher Ed schools. Google Apps In EDU includes a domain controlled version of Gmail. This version of Gmail will allow us to remove the current in-house hosted Microsoft Exchange Email System we are using while reducing cost to the District and expanding mailbox storage, improving search capabilities and improving communication. This move will also reduce future licensing cost, improves the update cycle and eliminates a mail server to support and replace.

Along with online email Google Apps for Education provides online storage, online word processing, spreadsheets and presentation slides (e.g. "Powerpoint" capabilities) all of which offer an extremely easy to share interface and unique collaboration tools. These collaboration tools offer many exciting new learning opportunities and far better ways to share documents across staff members.

- **Chrome Book and iPad Expansion**

As staff and students become more familiar with the opportunities Chrome Books offer we will increase the number of devices available for use. Currently the District has 94 Chrome Books. Chrome Book carts are currently available on a shared basis districtwide, but we are already seeing the request for devices exceeding current availability, so are planning a further expansion in the short term. Looking forward, Chrome Books will also be used, along with the current computer labs, for online state and federal testing.

iPads are currently deployed to 3 First Grade teachers and their students 1 to 1, iPads are being used in the GTV program, we have 10 iPads in the Elementary Library and several iPads are being used by the Special Ed Department.

- **District wide Wifi + Switch upgrade**

This is a two year project with the majority of the work and purchasing being done year one. Since the beginning of the 2013 - 2014 school year the District has achieved approximately 90% wifi coverage. There is still some major wiring that needs to be done to complete this first phase of the project. Additionally testing for saturation points and dead spots will be done over the course of this year. The second phase of the project will be to complete the switching upgrade and eliminate all 100mb switches by replacing them with 1000mb (1GB) POE (power over Ethernet) switches, the current standard in computing network speed. A third component to this project would be the rewiring of all network drops replacing the 15 year old cat 5 cable with the current cat 6E cabling required to maximize bandwidth abilities and throughput needs.

- **Develop a robust Professional Development Plan for staff**

Currently, we have established regular 2 day a month after school training sessions available to all staff. We have trained on the Google Apps in EDU, Chrome Books and some high level collaboration functions through Google Apps in EDU. We are exploring the Model Schools Program offered through BOCES for 2014-2015 which could provide the District with 2 full days of training each month. The Model School Trainers specialize in integrating District technology into the classrooms by working directly with teachers and their curriculum.

- **Improve Communication with Staff, Students, Parents & Community**
- **Transition from GlobalConnect to SchoolMessenger**

Regular IT Dept. updates to staff have started in September and will continue approximately monthly. Sharing of training documents has also been ongoing through Google Apps for Education. An online helpdesk system (see below) has also been implemented in order to target assistance. The Technology Committee has also been reestablished and has been instrumental in gauging staff readiness, identifying professional development needs and in serving as liaisons between the IT dept and teachers.

School Messenger is a mass calling system that far exceeds the capabilities of the district's current mass calling system, Global Connect. Global Connect has been unable to provide the District with auto-attendance calling and has required over 30 hrs of I.T. Dept. time to successfully interface with our school lunch program, NutriKids. SchoolMessenger has exceptional capabilities that include the ability to use social media, email, text messaging, desktop notification and automatic updates the District's website with news, school closings and public announcements.

- **Implement Help Desk System**

To help improve staff's ability to request help we have built and trained staff on a Help Desk Ticketing system that allows staff quickly fill out an online form requesting help on a variety of technology related topics. This system allows us to track who is responding to the request, how the issues are fixed and addressed, response time and statistical data related to all requests and responses. At this time we have had over 900 help desk tickets submitted and currently have 17 tickets open. Average response time to a ticket is less than 3 hours. We have also implemented the same system for the Maintenance staff and have included the Bus Garage staff into the system as well.

- **Upgrade every computer in District to Windows 7**
- **Replace/upgrade computers as needed**

We have had over 80 computers donated to the District by the SUNY Adirondack College that are much newer than the majority of the current PC inventory. We will be replacing the oldest computers in District with these PCs over the coming months and will be upgrading the rest to Windows 7 and Office 2007. The process for doing this has been streamlined using a process known as imaging. This allows you to configure on computer with the all software, updates and configuration needed. The PC is then copied or imaged using a Windows Deployment Server. This process allows us to configure one "image" and push this image to many computers.

- **Implement Full Server & Data Backup**

A new hardware back-up unit will be purchased and deployed allowing for disaster recovery of servers and routine off-site data backups.

- **Create a five year technology budget**
- **Develop BOCES hardware leasing possibilities**

We are currently in the process of developing a full Technology Budget for next year with projections for a total of five years. The WSWHE BOCES lease program will provide us with the opportunity to make larger purchases and pay for them over the course of 3 to 5 years. Any equipment purchased through this process has the added benefit of being aid-able and being supported by BOCES throughout district use. It also gives long term stability to technology budgeting and allows the creation of a five year hardware replacement plan for all end user technology hardware.

- **Build a new Domain replacing current Domain**

A Domain is the form of the network structure that is used to organize all users, computers, printers, and networked devices in a directory. That directory then has policies, or rules, applied to every computer and user in the Domain. Users and computers are placed in logical structures based on groups and locations (e.g. ES, HS, Admin, printers by location or department). The current domain structure has been built "on demand", somewhat like when an urban area expands beyond what was originally planned. Building a new domain is essentially like building the network from scratch, taking into account the current users, user groups and available technology and organizing it systematically. In the end, organization increases efficiency and decreases troubleshooting woes.

- **Chrome Book expansion**
- **iPad expansion**

As Districts approach the deadline for online state testing Chrome Books are a relatively inexpensive solution. Like iPads, Chrome Books also reduce the need for more expensive "PC" units while providing expanded portability into the classroom. As we are already expanding the use of Chrome Books, this will ease the transition to online testing.

iPads are transformative learning tools in education and provide an astonishing array of learning opportunities to effectively engage students. With an unparalleled amount of early learning apps the iPad is an excellent fit for K-6 students. Adding at least two grade level class sets per year realizes a K-6 "one-to-one" program within 6 years.

- **Formalize a Computer/Server Replacement Plan (by leveraging BOCES leasing options)**

Having a regular purchase/replacement plan in place provides a stable and reliable Technology platform and allows for consistent budgeting, while staying constantly "up to date".

- **Rebuild IP space addressing**

A complete restructuring of the IP space addressing currently used will allow us to align device IPs (internet protocol) addressing by device type. Eliminating the 10 year old current structure allows more flexibility and increases data security. This involves upgrading to a current Windows Server base. This removes the ability for a rogue computer to be plugged into the network and infect the infrastructure.

- **Replace the Phone system with a VOIP system**

The current phone system is significantly out-dated and needs replacement. There are no longer replacement parts for the current system and the supplier/manufacturer went out of business in 2011. The current standard for phone systems is a Voice Over the Inter Protocol based system. This is a "high priority" item as there have been system failures and PA

system "cross overs" which could potentially expose the district to acute vulnerability in the event of an actual district wide emergency.

- **Replace the PA System**

The PA system is extremely outdated and needs replacement. The system is unreliable and may result in the inability to properly execute lock down procedures. The system is out dated to the point of non-replaceable parts. The recommendation from Tech Services is to replace the system as soon as possible.

- **Replace remaining Switching equipment not upgraded in wifi project**

Currently there are 6 remaining 10/100mb switches that need to be replaced. These switches do not function to the current 1000mb standard. These switches cause bottlenecks in all computer functions.

- **Continue with Server Virtualization**

The migration to virtual servers will take several years to fully accomplish.