Long Range Technology Plan
2018 - 2024

Table of Contents

Executive Summary

The Antioch School District's 2017 - 2023 Technology Plan will serve as a six-year road map that informs the District's decisions of present and future technology acquisitions, implementations, and support strategies. The District recognizes the importance of utilizing technology effectively in the 21st century world. This plan also includes an analysis of the District's professional development strategies that have enabled faculty and staff to use technology as a tool to enrich student learning.

The District 34 Technology Committee members worked within various sub-committees to create the 2017 - 2023 Technology Plan. The District's Technology Plan was created through representation of parents, students, administration, board members and staff.

- Communications Sub-Committee: This sub-committee created a communication plan that outlines who we communicate with, the content, and the methods in which we will communicate with our stakeholders.
- Curriculum and Instruction Sub-Committee: This sub-committee worked on what was needed to integrate technology into the existing curriculum.
- Finance Sub-Committee: This sub-committee evaluated and shared the technology budget.
- Professional Development Sub-Committee: This sub-committee worked closely with the Curriculum and Instruction Sub-Committee to recommend professional development that would be needed for the integration of technology for all stakeholders.
- Technology Sub-Committee: This sub-committee evaluated the technology within the district and built a sustainable replacement model. This sub-committee ensured devices were chosen that support the technology scope & sequence.

District 34 Strategic Plan 2015-2020

Mission: To inspire a passion for learning that empowers all students to achieve personal excellence

Vision: Students will achieve personal excellence when everyone demonstrates:
- Commitment to continuous improvement
- High expectations for academic, social, emotional and behavioral growth
- Effective collaboration, communication, critical thinking and creativity
- Ownership, responsibility and accountability for growth and development

Goals:
- Continuous Student Growth & Achievement
- Supportive Learning Environment
- High Quality Workforce
- Family and Community Partnerships
- Efficient and Effective Use of Resources

Core Values/Commitments:
- We believe students learn in different ways and at different rates.
- We believe it is our responsibility to guide students towards self-sufficiency, ownership, responsibility and accountability for their own learning.
- We believe in providing a safe and secure environment in order to foster a community of collaborative learners.
- We value continuous improvement through teamwork, collaboration and shared leadership at all levels.
- We believe a high quality staff is essential to a high-achieving school system.
- We believe that corroborative partnerships and effective communication among the community, home and school accelerates student success.
- We believe the District must be a good steward of community resources.

Technology Committee Vision & Goals

Vision:

Antioch CCSD #34 believes in inspiring and empowering students to achieve personal excellence in today's global society. Understanding that students will take different paths and move at their own pace, our schools will support students as they move towards ownership and accountability for their own learning. Our interdisciplinary and collaborative approach involves authentic, real-world, learning experiences for all stakeholders. We will continue to provide safe and secure environments where students can collaborate and communicate effectively as they continue to grow as responsible digital citizens.

Goals:

- District 34 will provide consistent communication between all stakeholders utilizing district identified platforms.
- District 34 will prepare our students to be contributors to the world while being responsible, safe and respectful digital citizens.
- District 34 will utilize the ISTE Standards for Students as well as the TIM (Technology Integration Model) to meet the curricular needs of all learners by promoting personalized learning through individualization and differentiation.
- District 34 will provide differentiated professional development to support all stakeholders in the understanding and use of technology.
- District 34 values technology that is physically and financially sustainable.

Communications

I. CURRENT RESOURCES, SERVICES, & PRACTICES

District 34 maintains and utilizes several modalities of communications between all stakeholders.

Mass Notification System: District 34 utilizes SwiftK12 Solutions (PowerSchool Plugin) to send emergency phone calls, text messages, and emails to faculty, staff, and parents.

District Email: District 34 hosts an onsite Microsoft Exchange server for all faculty and staff email communications. Parent and community members email addresses are regularly collected and maintained for the purposes of sending general notifications about District-sponsored events.

District Website: District 34 utilizes a hosted web server that is reachable at https://www.antioch34.com/. Website development is managed by the District 34 Technology Department through Blackboard.

Teacher Website: All District 34 certified faculty members maintain a personal web page for students and parents/guardians to visit for information regarding classwork/homework and other course information.

Board of Education Website: The District 34 maintains a Board of Education web page. This web page includes Meeting Agendas and Minutes, Meeting Schedule, Policy Manual, District Strategic Plan, and Facility Plan.

Parent Portal: District 34's SMS (PowerSchool) offers a secure portal login for parents for the purposes of tracking a student information.

Social Media: Posting on the official District 34 Facebook page and official Twitter account.

II. ASSESSMENTS, RECOMMENDATIONS, & GOALS

It is recommended that District 34 begin an annual procedure of communicating the state of technology integration to parents and students. The communications should be distinguishing as the following subjects:

Parent Orientation/Updates:
- A presentation/Q&A on the basics of the technology available to students and parents in the Fall of 2018 to support parents.

- This program may also serve to update existing students and parents of the technology for recent changes in procedure, policy, resources, and expectations of use.

Technology Usage/Safety Tips: A presentation/Q&A for both students and parents on the basic Technology usage and safety will be delivered at both the Elementary Schools and Middle School. Includes cost of replacement and/or repair.

Website Resources: The technology section on the District 34 website will be built out to incorporate and expand upon the existing online resources for the District's technology integration program. Additional information regarding the district's instructional iPad support services and other free resources will also be included.

Network Infrastructure

I. CURRENT RESOURCES, SERVICES, & PRACTICES

Locations
- The network core of the Antioch 34 CCSD is located at the administration building. Each school has a direct dedicated fiber connection in the Network Core operating at 1GBs. The Administration Building acrs as the network core and also hosts the primary virtual server system, the fully redundant virtual standby server system is located at AUGS.

Wide Area Network
- The District has a dedicated 250MB/s fiber pipe to the outside world located at the administration building.

Demilitarized Zone
- The District has a physical Demilitarized Zone (DMZ) hosted on the LAN that hosts the BYOD Wi-Fi network and also the security camera VLAN.

Local Area Network
- The District's Local Area Network (LAN) switching infrastructure is an all Cisco based network capable of 100 MBPS to 10 GBPS connectivity depending on the needs and location. All the buildings MDFs are connected to the Administration network core on a dedicated fiber operating at 1GBPS. All IDF closets are connected via multi-mode fiber to each building's MDF operating at 1GBPS. All District facilities are internally wired with Cat-5, Cat-5e, or Cat-6 network cabling. All classrooms, offices, and shared workspaces have at least 1 network connection per computer. Each building's network is a segmented into it own VLAN.

Wireless Local Area Network
- The District's Wireless Local Area Network (WLAN) is distributed across all buildings. Two Cisco Wireless Controllers (a primary controller and fully redundant or hot standby controller) support approximately 270 Wireless Access Points capable of 802.11n transfer speeds and can support up to 500 Access Points. All classrooms, offices, and shared workspaces have a strong Wi-Fi signal, every classroom in the district has its own access point to make sure there is no chance of interference or drop of signal.

The WLAN is divided into three segments:
- **Antioch34:** This network is only for district owned devices and those devices have access to the fileserver, email, and internet. No one outside the tech department knows the password to this network.
- **Antioch 34 Staff:** This network is for staff owned devices and those devices have access to E-Mail and internet. The authentication for this network is through Active-Directory.
- **BYOD:** This network only connects to the Internet, and does not allow for access to internal LAN assets. It uses a shared username/password authentication. It is designed for visitors/students who bring personal technology into the District and require Internet access.

Internet Service Provider
- We have 1 Dedicated Fiber ISP offering a maximum speed of 250Mbps for all Internet capable devices in the District.

Virtual Server System
- The District maintains a virtual server system, all virtualized servers are hosted on a VMWare VSphere cluster, which is physically maintained on 3 physical servers with a fiber connected Storage Array Network (SAN). The secondary or redundant virtual server system is located at AUGS and is maintained by 2 physical servers with a 4 GBPS copper connected Storage Array Network (SAN). The 2 server cluster sync between each other hourly.

Power Redundancy
- The District's Core, MDFs, and IDFs are all supported by a series of Uninterruptible Power Supplies (UPS) that provide fault tolerance for power spikes, dips, and outages. Additionally, the Administration Building Network Core is supported by a dedicated electrical generator that is capable of powering all IT equipment. Also since the districts phones which are VOiP are powered through the network using POE the MDF and IDFs power UPS also supplies power to the phone system in an outage.

Disaster Recovery/Backup Systems
- All servers have 3 different backup systems. The 1 level of backup is a full system and data backup server located at ASC which is managed by Appassure. The 2nd level of backup is a standby VMWare server cluster that is a direct mirror of the primary server cluster located at AUGS. The 3rd level is a 2nd Backup Server located at AUGS ran by Appassure. The reason for 3 different backups is so that in a worst case scenario that if ASC has a fire or a tornado takes out the building we have 2 different backups at AUGS of everything that was at ASC. Also if the VMWare system at ASC is compromised in any way there is a chance that the Back VMWare cluster could be affected that we have 2 different backups (Appassure) to refer to for a backup.

Network Security
- The district using a multi tiered approach to network security.

- The 1st level is the Palo Alto appliance which is our Virtual router, Firewall, Web Security and VPN system. This device is the heart of the network system.
- Our 2nd level system is a another web security appliance which handles web content filtering and keyword filtering. This 2nd device is because the Palo Alto acts has a broadsword but does not have the ability to handle the fine security issues.
- Our 3rd level is the email Barracuda system which filters all email traffic in the district.
- Our last level is the VLAN configuration which handles the traffic throughout the district based on the user's credentials and needs.

II. ASSESSMENTS, RECOMMENDATIONS, & GOALS

Increasing ISP Bandwidth
- The district's existing ISP is currently a 250 MBPS connection but with minimal hard costs can be increased to 1 GPBS (1,000 MBPS) and besides the hard cost the monthly costs of the fiber and bandwidth would increase as well. The district hosts a lot of its own services in house on its own servers to help keep a smaller need on the internet thus lowering the overall bandwidth needs and costs. The belief is that the LAN traffic is free to use whereas the WAN traffic isn't so we try to get the most out of the LAN as much as possible. To date during the district's heaviest WAN usage which is during PARCC testing we were still only peaking at around 55% WAN Utilization and 20% of our LAN Utilization. It has been looked into the ability of adding a 2nd ISP for redundancy reasons but in the last 2 years there has only ever been 2 ISP outages, so at this time we do not see the need to spend the money around which is $1,500 a month on a redundant ISP plus about $25,000 in equipment costs.

Increasing Network Switch IDF/MDF Capacity
- As we install more POE devices we have been running out of the network switches ability. We handle this on a per device basis which at that time we simply add another POE switch to the Cisco switch stack thus giving us more capacity. The new switches that are installed have 2X the POE capacity of the original switches 720W vs 360W. At the same time Dan has been cleaning up and reorganizing the network closets one at a time because as Desktops and other devices are removed there is no longer a need for so many connections. So as some switches are removed the network closets because smaller in the amount of equipment in each room thus easier to maintain.

Increasing the Direct LAN Fiber connection between each building.
- Each building currently has a 1 GBPS dedicated fiber connection and it is thought in the 5-7-year projection that will need to be increased to the 3-5 GBPS range. This would require a hard investment in the MDF equipment and fiber reconfiguring but with the projection 5-7 years out the costs for the equipment needed should become much more affordable. When the network core was rebuilt 3 years it was designed to handle up to a 10 GBPS fiber connection to each building.

IT Department

I. CURRENT RESOURCES, SERVICES, & PRACTICES

1 FTE Network Administrator
- ❏ Network Security & Management
- ❏ Server Management & Redundant Backup Server Systems (Disaster Recovery Plan)
- ❏ Technology Department Budget
- ❏ District Wireless Infrastructure (WiFi)
- ❏ Device Management
- ❏ District IT Professional Development & Professional Development for Technology Staff
- ❏ District Security & Door Entry System
- ❏ District Phone System
- ❏ Master Facility Technology Infrastructure & Integration Planning
- ❏ Internet Web Security
- ❏ District Printing System & D34 Printshop
- ❏ Virtual Private Network Management (VPN)
- ❏ Timeclock System
- ❏ Assists is Building Automation Systems with Building and Maintenance Department

1 FTE Database Support Manager
- ❏ Administer Power School Database
- ❏ Mobile Device Management & Support (JAMF)
- ❏ Active Directory Management
- ❏ District Assessment Setup
- ❏ Website Support
- ❏ Hardware Support
- ❏ State Reporting
- ❏ Database Management (Achieve 3000, AimsWeb, NWEA, Versatrans, Destiny, Nutrikids, Matrix, Fitnessgram, Acorn, InfoSnap)
- ❏ Manage and complete tickets in trouble ticket system
- ❏ Supervise Hardware Technology Specialists

2 FTE Hardware Technology Specialists (shared within 5 buildings)
- ❏ Provide support to all district staff with regard to software and hardware concerns
- ❏ Perform installation, maintain, and support software on all district machines
- ❏ Maintain and support all district hardware
- ❏ Assist with the installation and maintenance of the district's technology infrastructure
- ❏ Deliver and prepare for student and staff use all technology
- ❏ Ensure that all staff is properly trained on relevant hardware and software

- ❏ Help facilitate the district's efforts to prevent viruses and or other malicious actions/events from disrupting district technology
- ❏ Assist, as needed, with phone programming
- ❏ Support and maintain mobile technology assets such as laptop carts and mobile devices
- ❏ Support day-to-day technology operations throughout the school year and summer projects

II. ASSESSMENTS, RECOMMENDATIONS, & GOALS

2018-2019:
The recommendation is to hire 2 FTE Instructional Technology Specialists to service all of the school buildings.
- ● 1 FTE: AUGS/Petty
- ● 1 FTE: Oakland/Hillcrest/AES

Summary of Functions of Instructional Technology Specialists:
- ● Provides leadership and direction in developing and maintaining technology that optimizes teacher utilization and student access to technology while working with his/her immediate supervisors to assist in the effective operation of the district.
- ● The role of the Instructional Technology Specialist involves increasing staff knowledge of current technologies, coaching school staff on the use of technology in the curriculum, and increasing student access to and knowledge of technology.
- ● The Instructional Technology Specialist provides support to staff as they utilize data and incorporate technology to improve practice and refine differentiated and personalized instruction for students.
- ● The Instructional Technology Specialist provides individual and group professional development in implementing the use of technology to differentiate and personalize instruction and promote student growth.

Client Hardware

Assigned: Technology Subcommittee

I. CURRENT RESOURCES, SERVICES, & PRACTICES
- Staff iPads - 258 devices
    - Certified staff originally were all assigned an iPad, but many were given back due to lack of use. Those devices were then repurposed either with students or paraprofessionals.
- Staff Laptops - 270
    - Certified staff were all provided a Macbook Pro or Samsung at the beginning of the 2017-2018 school year.
- Student iPads - 1,542
    - Currently iPads are arranged in classroom sets of 16 based on either classroom location or teacher preference
    - Several buildings have iPads either in a cart or a wall unit, ranging from 8-24 devices.
- Student Laptops - 1,498
    - Currently Laptops are arranged in classroom sets of 15-30, depending on the device and the classroom
- Student Desktops- 411

II. ASSESSMENTS, RECOMMENDATIONS, & GOAL

Grade	February 2018 Discussion	April 2018 Proposal
Grades K-2	iPad	2018-2019 - use newer iPads that district currently owns and backfill as needed to ensure 100% of students have devices. These will not be take home devices at this time, but will remain in the classroom. 2019-2020 New Purchased iPad w/Logitech Crayon
Grades 3-5	iPad w/Keyboard	2018-2019 New Purchased iPad w/Logitech Crayon
Grades 6-8	MacBook Air	2018-2019 New Purchased iPad w/Logitech Crayon

Cost Savings:
- The change in device recommendation will not only give our students more capability & creativity, but also will cost approximately $380,000 less (or about 27%) than the February 2018 discussion of devices.

- Additionally, having 1:1 at AUGS was not an option based on the cost of the iPad Pro (suggested model) in the February 2018 discussion. With the new iPad being released by Apple, it has become a viable (more desirable and affordable) option.
- View Article - [Missouri school touts success with iPad Pro curriculum, saves nearly $600K annually on hardware](#)

Roll Out Plan:
- Begin with devices staying at school in 2018-2019 and work towards take home for the 2019-2020 school year. We would introduce 1:1 (devices remain at school), but allow time for students and staff to get accustomed to them and begin teacher professional development. Evaluation will occur to investigate if take-home can be done earlier, including the financial impact.
- Desktops in classrooms will be removed as the devices are beyond the end of their use. Desktops will not be replaced as all staff and students will have 1:1 devices.
- Newer student laptops which are 3 years or less will be repurposed and put into laptop carts in the buildings Library Media Centers and be available for checkout when a laptop device is needed or desired.
- *Note- all devices that will be removed will be sold back for some value or recycled.

Charging
- Each classroom will be equipped with a charging block capable of charging up to 30 devices. Devices will be expected to be plugged in and charged each night. Buildings and classrooms will be responsible for carrying out their own charging procedure.

iPad Cases & Keyboards
- Cases will be purchased with screen protection and a transparent back in order for staff to see the identification tags.
- Several sets of keyboards will be purchased and placed in buildings for checkout and use.

Administrative Software & Services

I. CURRENT RESOURCES, SERVICES, & PRACTICES
- Phone System
  - Avaya Voice Over Internet Protocol (VOIP)
- Mobile Device Management (MDM)
  - Dell KACE for PCs
  - Casper Suite "JAMF" - Mac and iPads
- Student Information Systems
  - Antioch School District 34 maintains several discreet databases for student information
    - PowerSchool: All district and non-district student records are maintained in PowerSchool. Information includes grades, enrollments, schedules, attendance, demographics, medical, and other miscellaneous data.
    - eSped: Students that receive Special Education services are tracked in eSped. The data that are tracked includes details of the student's learning disability, services being received, and other IEP specifics.
    - Brecht 504: Students that receive services through a 504 plan are tracked in Brecht 504 database. The data that are tracked includes details of the student's 504 plan, services being received, and other 504 specifics.
  - Financial System
    - The district uses Specialized Data Systems (SDS) to manage its financial information. The SDS server is hosted off-site and access is managed by the Business Office.
    - Access to SDS is also extended to a self-service portal for faculty and staff.
    - The district has installed time clocks in each building for the purpose of digitally collecting employee punch-ins/punch-outs.
  - Human Resources System
    - The district uses Frontline to manage its human resource information.

II. ASSESSMENTS, RECOMMENDATIONS, & GOALS
- Phone System
  - Expand the capabilities by forwarding voicemails to client inboxes
- Expand upon our current systems - both systems are capable of managing more devices.
- Training Staff on District Systems
  - Continue to train staff on use of PowerSchool as it evolves, including investigating the use of its Standards Based Gradebook.

Curriculum and Instruction

I. ISTE Standards
For Students
For Educators
Antioch District 34 ISTE Standard Descriptors
Antioch School District 34 ISTE Standard Learning Targets and Alignment

II. Scope and Sequence
Antioch School District 34 Technology ISTE Standards Scope and Sequence
Antioch School District 34 Technology Skills Scope and Sequence

Internet Safety Board Policy 6:60
> In grades kindergarten through 12, age-appropriate Internet safety must be taught, the scope of which shall be determined by the Superintendent or designee. The curriculum must incorporate policy 6:235, Access to Electronic Networks and, at a minimum, include: (a) education about appropriate online behavior, (b) interacting with other individuals on social networking websites and in chat rooms, and (c) cyberbullying awareness and response.

III. The Technology Integration Matrix: TIMS

IV. ASSESSMENTS, RECOMMENDATIONS, & GOALS

Learning Management System
- Learning Management System (Grades K-2)
  - SeeSaw
  - The team will be completing the necessary steps to secure SeeSaw as our solution for grades K-2, including the proposal to the Curriculum Oversight Committee.
- Learning Management System (Grades 3-8)
  - The committee has narrowed the selection to *Schoology* and *OTUS*
  - 2018-2019 first semester (advanced study and pilot):
    - A pilot group will be selected and use Schoology for 8 weeks and OTUS for 8 weeks, followed by an evaluation using a rubric combined with feedback from parents and students.
    - A selection will then be made by the pilot group and presented to the Curriculum Oversight Committee.
  - 2018-2019 second semester (decision made and moving forward)
    - Professional Development for staff on the selected LMS so all 3-8 staff are ready for full implementation in the 2019-20 school year.
    - Host a variety of parent nights on the new LMS and the anticipated 1:1 "take home" device roll out in 2019-2020 school year.

- 2019-2020
  - Full rollout of the grades 3-8 LMS with Parent Nights
- Sample Rubric for evaluation of 3-8 Learning Management System -- Actual Rubric will be added as adopted by the Learning Management System Sub-Committee

Professional Development

I. CURRENT RESOURCES, SERVICES, & PRACTICES
- There are professionals within the district that are capable of sharing their knowledge and experience with others to support professional development (formal and informal).
- District 34 can model professional development on successful systems similar to EdCamps or other interest/needs based professional development models.
- There are existing programs for professional development/certification in targeted skills. (ie: Google Educator, Apple Educator, etc.) Several educators have taken advantage of these opportunities on their own time.
- District SLT times can be expanded upon to further support targeted growth for integration of technology professional development based on needs.
- Use existing repositories like Common Sense Education to support technology learning across all levels.
- Staff with technological skills present at all buildings ("gurus" "point people") -- right now they are troubleshooters, not necessarily Instructional Technology

II. ASSESSMENTS, RECOMMENDATIONS, & GOALS
- Educator Showcasing (during specified times or PD)
  - Create a virtual bulletin board or survey to showcase new or relevant resources for integrating technology in the classroom.
  - Allow for teachers to give a short demonstration of something new or exciting they have recently found.
  - Makerspaces
  - Encourage student led PD for all students.
- Professional Development Plan for Staff
  - A professional development plan has been created with the Apple Education PD team advising the district on best practices that they have seen work in other districts to have a successful 1:1 program and to ensure that staff are ready to use the devices to their fullest capability.
    - All staff receive the new iPad with the Crayon so they have the same device as the students.
    - The staff will also keep their laptops.
    - Professional Development provided to Administrators prior to the start of the 2018-2019 school year and before staff return.
    - Professional Development provided during Institute Day where staff will receive basic training on the iPad and how to use them in the classrooms.
    - During the first half of the 2018-2019 school year, the Apple PD team will be coming to each school, each month through December to conduct in classroom workshops with the staff and students to teach the staff the capabilities of the 1:1 program and to also answer questions.

- By the end of the 2018-2019 school year, all staff and administrators will have completed adequate training for full implementation of take-home devices in the 2019-2020 school year.
  - Instructional Technology Specialists
    - Apple Certified Teacher to Provide ongoing professional development to staff
    - Work with staff one-on-one to better integrate technology into their classes and lessons.
    - Meet with SLTs to troubleshoot, answer questions, and provide targeted assistance.
    - Provide guidance to the district on technology changes in education.
    - After School Technology Chat (similar to Math and ELA chats)

Staff Development Needs
1. Focus professional development on instructional strategies using technology in the classroom.
2. Establish train the trainer model to train and assist staff to integrate technology into curriculum and instruction.
3. Establish clear and concise expectations for technology integration.
4. Curriculum writing time for teachers to integrate technology into curriculum and instruction.

Technology Budget

I. CURRENT RESOURCES, SERVICES, & PRACTICES
- **Technology Budget Currently Supports:**
  - District Devices
    - Laptops, iPads, mobile carts, Apple TV, Promethean Boards, etc.
  - Software
    - Trouble Ticket System, PowerSchool, Matrix Database, Academic/Student Related Software, etc.
  - Professional Development
  - Website Support
    - District, School and Teacher Websites
  - Infrastructure
    - Servers, Security, Wifi, Phone, etc.

II. ASSESSMENTS, RECOMMENDATIONS, & GOALS
- **Assessment**
  - Use of technology (hardware and software)
  - Current financial practices in technology
  - Cost of devices and software
  - Staffing
  - Student use of technology
- **Recommendations**
  - Determine budget for technology hardware and software
- **Goals**
  - Financially support all staff with professional development
  - Financially sustain all hardware and software

- **2 FTE instructional tech coaches**
  1: AUGS/Petty
  1: Oakland/Hillcrest/AES

- **Upgrades if needed in the future**
  - AT&T internet pipe upgrade to 1GB - $650 to $2400 monthly (increase of $1750 monthly). Pay Illinois Century Network - $475 to $950 monthly (increase of $475 monthly)