



Strategic Technology Plan

2021-2031

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Introduction

Digital technologies are everywhere in 2021. Whether we like it or not, technology has a place in seemingly every human endeavor, a fact the recent shift to, and return from, distance learning has made clear. Preparing students for careers, college, and life in the 21st Century demands careful consideration of the role technology plays in education. Mt. Diablo Unified School District (MDUSD) believes that students deserve regular opportunities to learn in technology-rich learning environments that reflect the technological world outside the classroom. Stated bluntly, we can only expect that our students will thrive as productive citizens beyond high school if they have regular, embedded opportunities to learn through technology during their TK-12 experiences.

This Strategic Technology Plan outlines a bold, achievable vision for learning and teaching with technology in MDUSD. The goals and action steps detailed here are designed to meet three critical imperatives:

1. Empower teachers to provide relevant meaningful instructional opportunities through technology.
2. Provide students with regular, meaningful opportunities to engage with the modern world through technology to become college and career ready.
3. Ensure the District can maintain the necessary technologies and support systems to ensure every student graduates ready to thrive in a technology-rich world.

This is not merely a technology plan; it is a learning plan, supported by and empowered through technology. Implemented with fidelity, this plan will set MDUSD on a path to equitable, student-centered learning. Importantly, the plan builds on important progress already made in MDUSD, and the dedication of our families, our community, our teachers, our Board of Education, our District staff, and most of all our students. For instance,

- in 2018, our community prioritized technology for our schools through a significant Bond initiative, Measure J,
- MDUSD continues implementation of the Common Core State Standards (CCSS) with embedded technology standards,
- teachers across the District increasingly and purposefully use a variety of digital tools to support instructional goals,
- schools have increasingly directed available funding toward the acquisition of technology, especially Chromebooks,
- Technology Integration Leaders (TILs), a cadre of expert technology practitioners, provide instructional support to schools.

It is clear that as a District, we have an excellent platform from which to launch a significant effort to modernize our approach to technology for learning and teaching. The District's Local Control and Accountability Plan (LCAP) focuses our work on outcomes for students. And recently, a Systemic Instructional Review (SIR) conducted by the California Collaborative for Educational Excellence (CCEE)

outlined recommended action steps designed to support systemic instructional improvement within MDUSD.

Plan Development Process

This plan has been drafted in extensive consultation and collaboration with District stakeholders, and represents the collective efforts of students, parents, community members, teachers, administrators, and other District staff. The plan is guided by MDUSD's District Goals, the District Local Control and Accountability Plan (LCAP), and the recently completed Systemic Instructional Review (SIR) report conducted by the California Collaborative for Educational Excellence (CCEE).

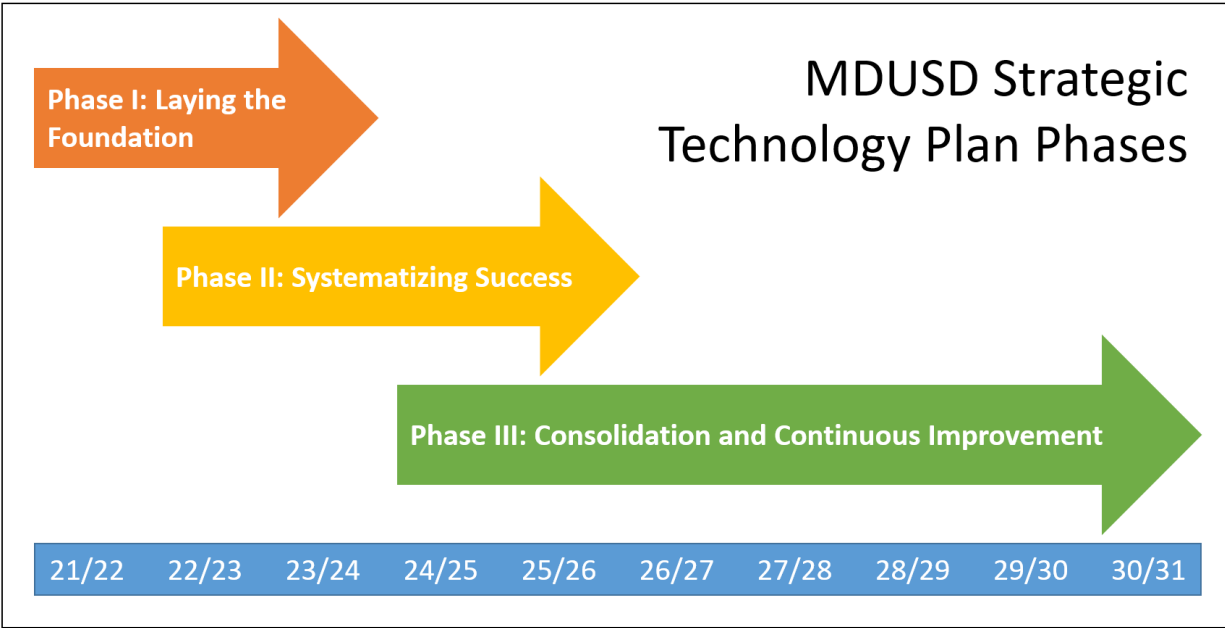
In December, 2020, MDUSD convened a Strategic Technology Planning Task Force. This group met six times from December, 2020 through March, 2021 to discuss the state of technology in MDUSD and identify priorities to inform the completed plan. The Task Force formed four work groups to draft recommendations in the following categories:

- learning and teaching,
- equitable access,
- devices, funding, and technology support, and
- infrastructure and technology operations.

Several key priorities emerged during Task Force meetings. These included ensuring equitable access to technology for students and teachers, the importance of a focus on learning and teaching, the need for coordinated governance of technology decision-making and budgeting, and recognizing that technology priorities cannot be achieved without bolstering technology infrastructure, operations, and support. A draft plan was presented to the Task Force in May, 2021.

Plan Phases

This plan is organized in three defined, achievable phases. The phases necessarily overlap in recognition of the complexity of a District-wide process.



Phase I: Laying the Foundation (2021/22 to 2023/24)

Phase I is designed to 1) create District systems and processes, and create scalable programs, such as 1:1 schools, 2) align resources to support systemic progress, and 3) address several long-standing and critical challenges inhibiting progress, such as the modernization of MDUSD’s technology infrastructure. Under normal circumstances, Phase I would employ a “go slow to go fast” approach to change, laying a foundation for aligning and systematizing efforts across the entire District. However, acknowledging the imperative to maintain equitable access to technology, and with the input of significant one-time resources related to the COVID-19 pandemic, it is critical that Phase I be implemented quickly. Many elements of this plan that are prerequisites for other elements do require time and planning to implement. For instance, MDUSD’s aging network infrastructure cannot be upgraded overnight and must be planned carefully to meet current and future needs. Network improvements require a long-range approach to refresh equipment and services and keep them up to date. At the same time, several critical core infrastructure and connectivity issues must be addressed to the extent possible in the short term.

Phase II: Systematizing Success (2022/23 to 2025/26)

The second phase of this plan focuses on implementation of planned activities in Phase I. For instance, once a network plan is completed, an integrated approach to deployment will be undertaken in conjunction with facilities work at District sites.

Phase III: Consolidation and Continuous Improvement (2024/25 to 2030/31)

During the consolidation phase, with the majority of technology supports in place, schools will be empowered to take full advantage of the systems and structures implemented in earlier phases.

Continuous improvement efforts will be undertaken to elevate practice, building on foundational successes.

Strategic Technology Planning Task Force Members

MDUSD thanks the following individuals who participated in the Strategic Technology Planning Task Force.

Joseph Alvarico, Teacher
Max Benabou, Student
Aurelia Buscemi, Administrator
Ben Campopiano, Administrator
Shannon Cherry, Parent
Robert Santa Maria, Student
Amneris Galarza, Parent
Jeff Garavanta, Information Technology Operations Manager
Megan Gerdts, Technology Teacher on Special Assignment
Lisa Gonzales, Chief Business Officer
Shauna Hawes, Teacher
Brian Lawrence, Former School Board President and Community Member
Jennifer Martin, Administrative Secretary
Suleyma Moss, Administrator
Lindsey Nakashima, Teacher and Technology Integration Leader
Tara O'Keefe, Network Technician II
Shannon Ortland, Director of Accountability, Research, and Evaluation
Chloe Park, Office Manager
Shawna Patterson, Teacher and Technology Integration Leader
Matt Rosso, Network Technician III
Karen Rush, Office Manager
Amayra Samaniego, Parent
Ryan Sheehy, Administrator
Robert Sidford, Director of Technology and Innovation
Amy Sudrla, Special Education Administrator
Greg Taylor, Director of Technology, City of Concord

Goal 1: Modern Learning and Teaching

We believe MDUSD should foster a culture of lifelong learning. Students and staff should learn and use modern strategies and methods of utilizing technology to work effectively and efficiently. Teachers should be empowered to implement strategies for engaging every learner.

Challenges and Opportunities

Technology-embedded learning opportunities have historically been inequitable and limited in MDUSD, with the use of technology in instruction largely considered optional. The response to the 2020-21 COVID-19 emergency created an urgency to systemically deploy two learning platforms, which are now used across the District: Google Classroom for grades 3-12, and Seesaw for grades K-2. A wide variety of digital tools (apps, software, websites, etc.) are used across the District with no approval process in place for these, leading to potential data privacy and security concerns. There is a desire among District staff for consistency to enable focused support for vetted tools that meet the needs of students and teachers. Professional learning focused on technology has not been consistent, systemic, or equitable.

Training has mostly focused on the needs of participants who “opt in” to learning opportunities. There continue to exist inadequate resources to deliver timely, professional training to teachers and staff. Technology training has, therefore, focused more on technical skills and administrative functions than on technology use in teaching. Thus, technology use continues to appear to be optional in our classrooms. There are no common articulated, grade-level-aligned, and curriculum-aligned expectations, although a scope and sequence was drafted several years ago, but not adopted. As a result, staff expertise is inconsistent in their use of technology.

The return to full in person learning in Fall, 2021 presents an opportunity for MDUSD to build on past work to establish a clear shared vision of the purpose and value of technology for learning and teaching.

Strategies

Strategy 1.1: All students will regularly use technology to engage with curriculum

Action Step 1.1.1: Adopt and implement a framework for learning and teaching with technology that articulates a core set of instructional practices that support student modern learning skills and technology literacy skills as outlined in the Common Core State Standards, International Society for Technology in Education (ISTE) Standards for Students, and California Model School Library Standards.

Action Step 1.1.2: Develop and implement a District-wide Digital Citizenship Curriculum, designed to be embedded within curricular content at all grade levels.

Strategy 1.2: Provide quality, curriculum-aligned digital resources for learning and teaching

Action Step 1.2.1: Maintain a set of core digital platforms, such as Google Classroom, to ensure consistent, reliable access to curricular materials for students across learning modalities.

Action Step 1.2.2: Establish and maintain a list of approved digital tools for learning and teaching that meet MDUSD data privacy and security standards, and create a process for the submission of new tools.

Action Step 1.2.3: Ensure that whenever possible, adopted technologies meet the needs of all students, including those with special needs.

Action Step 1.2.4: Ensure that new curriculum adoptions include a robust digital component to support digital access to content for students and teachers.

Action Step 1.2.5: Establish a District-wide curriculum guide with a clear scope and sequence for technology skills and modern learning skills to ensure consistent high expectations for all students.

Strategy 1.3: Support all teachers and instructional staff with high quality resources and professional learning

Action Step 1.3.1: Create and maintain a schedule of required and suggested training opportunities to ensure staff in all job functions have differentiated, timely access to professional learning. Encourage all educators to complete the Google Educator Level 1 course.

Action Step 1.3.2: Create and maintain a comprehensive digital repository of training and professional learning resources to support instructional use of core digital platforms and applications, digital tools, data privacy and security practices, and other technologies. This site will include documentation, videos, how-to guides, and training schedules.

Action Step 1.3.3: Maintain the District Technology Integration Leader (TIL) program to support schools with expert technology integration leadership.

Action Step 1.3.4: Create a set of supportive resources to foster a common understanding of instructional priorities, including walk through protocols, and examples of strong technology-rich instructional practices.

Action Step 1.3.5: Communicate a list of suggested technology proficiencies for staff in various job roles with aligned supports and training opportunities.

Goal 2: Equitable Access to Technology for Learning and Teaching

We believe that educational, socioeconomic, neurodiverse, and racial equity are best advanced through a centralized plan and clear recursive process for all students to have regular access to technology regardless of school location or access levels at home. Resources should be allocated equitably across levels.

Challenges and Opportunities

The acquisition and deployment of technology across MDUSD has not been conducted with serious consideration for equity. To ensure all students have regular, meaningful opportunities to engage with the world through technology requires a clear intentionality around providing all students with the tools they need. It also requires preparing individuals supporting students in their learning.

To date, each school site, department, or program, has largely made local decisions regarding the funding and acquisition of student and staff technology. This has resulted in a variety of technologies in use, an inability to refresh devices regularly at most sites, and a lack of adequate support for the multitude of technologies in use. There are also difficulties reported in the capacity of individual schools to support assistive technology needs.

Supporting families' technology needs has been challenging during distance learning. Many families do not have the means to purchase WiFi or devices at home. During distance learning, MDUSD provided hotspots for up to 1600 families, but this is not sustainable.

Although many challenges exist to providing equitable access to technology for students, families, and teachers, a comprehensive approach provides many possibilities.

Strategies

Strategy 2.1: Ensure all students and staff have access to modern technologies necessary for modern learning and teaching

Action Step 2.1.1: Continue and expand the increased access to devices begun under Distance Learning by supporting and sustaining 1:1 take-home programs at all secondary schools beginning in the 2021/22 school year. Redistribute devices as possible to support a 1:1 ratio (non-take-home) at elementary schools. Explore 1:1 take-home programs at elementary schools through the 2021/22 school year.

Action Step 2.1.2: Refresh teacher laptops at 1:1 schools in 2021/22 and at non-1:1 schools in 2022/23 through 2023/24, by providing a supported District standard laptop device.

Action Step 2.1.3: Establish a District-wide technology refresh plan to centralize technology purchasing on a three-to-four year cycle and ensure student and teacher/administrator devices are up-to-date and capable of supporting daily tasks.

Action Step 2.1.4: Create and maintain a centralized asset management system (currently Destiny Resource Manager) to serve all District sites as a single repository for mobile device inventory.

Action Step 2.1.5: Manage District mobile technology assets in 1:1 programs through centralized support for warranty repairs, break-fix, and device deployment coordinated collaboratively through the Technology and Information Services and Purchasing and Warehouse Departments.

Action Step 2.1.6: In collaboration with stakeholders, maintain and regularly update a comprehensive list of standard devices, peripherals, assistive technologies, and other equipment to ensure equitable support can be provided for technology in schools. Ensure that purchases made by school sites conform to established standards.

Strategy 2.2: Support home device, connectivity, and technical support needs to the extent possible

Action Step 2.2.1: Maximize opportunities for students and families to access the District network while at school outside of regular school hours by providing external WiFi coverage in common areas and facilitating access at school programs.

Action Step 2.2.2: Regularly maintain and communicate lists of resources for families with low-cost options for Internet service. Collaborate as possible with industry partners to provide information and access to programs. Provide information to schools to assist families in accessing these options.

Action Step 2.2.3: Provide resources to schools to assist site staff to support families' questions.

Goal 3: Professional and Timely Support

We believe that all students, staff, and families should be expertly and professionally supported in their effective use of technology within learning communities to maximize student achievement and build modern learning skills.

Challenges and Opportunities

Effective technology support has been undertaken by a dedicated team of technicians with insufficient resources to support the needs of students and staff. Historically, sites have been assigned a central Network Technician on a part time basis, determined by school level (elementary, middle, high). Technicians have served as point people for technology troubleshooting and project planning at sites. Smaller elementary schools (enrollment under 500) have received roughly 6 hours per week, larger elementary schools (enrollment over 500) roughly 8 hours per week, middle schools roughly 2 days per week, and high schools roughly 3 days per week. This model has resulted in sites, especially elementary schools, not receiving timely support for important issues. Additionally, the lack of technicians has resulted in sites having to wait to have larger technology projects completed.

A central Technology Help Desk provides support to staff to address immediate hardware and software issues and to report when technology at sites is not operational. Help Desk requests are received via email and phone, and are thus not readily trackable. Email mailboxes monitored by Help Desk staff support each major system, with staff reporting varying success in getting timely responses. An online ticketing system, Web Help Desk, has been available to sites to enter support tickets. However, the system has only been partially deployed.

District-wide and site level professional development and training for technology integration is inconsistent across sites and no central plan for technology professional learning exists. Each school has identified a District-funded Technology Integration Leader (TIL) allowed 6 hours per month to assist site staff with technology-related curriculum and hardware support. These staff attend periodic meetings to coordinate support. In-house classes are created by the Technology and Information Services department on a variety of topics.

The Assistive Technology Department supports students with special needs through the provision of assistive technology devices.

Significant opportunities exist to better organize and enhance available technology support resources, represented in the following goals.

Strategies

Strategy 3.1: Establish an enterprise model of technology support to best meet the needs of a modern, technology rich organization.

Action Step 3.1.1: Deploy and support an equitable District-wide work order system allowing user submission and resolution of technology support requests that allows clear prioritization of tasks to best meet the needs of users. Ensure all staff can enter work orders. Minimize the use of alternative channels for requesting technical support, such as email and shared support mailboxes.

Action Step 3.1.2: Transition to an equitable zone system of deploying field technicians, prioritizing need rather than “time on site,” and fostering collaborative support among technicians.

Action Step 3.1.3: Maximize the capacity of all Technology and Information Systems staff to use remote support software to address user needs quickly, including deployment, troubleshooting, and technical support.

Action Step 3.1.4: Strengthen collaborative efforts between Technology and Information Systems staff and site Technology Integration Leaders (TILs) through resources and training and by allowing access for TILs to the work order system.

Action Step 3.1.5: Refresh and regularly update the Technology and Information Systems web page enabling users to more readily access resources for self-help and include commonly requested support and training resources.

Action Step 3.1.6: Identify additional innovative ways to increase technical support capacity, such as through technical support electives for students, internships, etc.

Action Step 3.1.7: Establish clear, ongoing, and job-embedded training options for Technology and Information Services staff that empower technicians to perform their important functions expertly and efficiently, and provide opportunities for all staff to improve their skills and advance to more senior positions as they become available within the District.

Strategy 3.2: Standardize device management, deployment, and removal from service, to ensure efficient, timely support.

Action Step 3.2.1: Support all schools to utilize the District asset management system for mobile devices for all check-in / check-out of devices, ewaste, and invoicing.

Action Step 3.2.2: Ensure all District devices are managed centrally through systems that allow efficient deployment of hardware and software and allow remote support.

Action Step 3.2.3: Ensure all devices approaching end of life are removed from the District inventory and eWasted in a timely manner to increase compatibility, reliability, and functionality of devices in service.

Action Step 3.2.4: Detail and communicate tiered support levels for all District-standard technologies to clearly outline what support users can expect, and identify end-of-life dates.

Goal 4: Robust Network Infrastructure and Technology Operations

We believe that a student-focused, results-oriented organization must provide secure, reliable, and effective technology services to enable a first-rate learning environment where students, staff, and families can achieve their collaborative and individual goals.

Challenges and Opportunities

The District's increasing reliance on data, information, and technology services in recent years has significantly elevated the need for MDUSD to deploy modern, updated, and supported technologies. Unfortunately, available resources have not kept pace with demands as a greater number of new and more complex systems are desired by users. This results in reduced functionality of the District's network infrastructure and technology operations. For instance, WiFi and network functionality varies from site to site. In many cases, sites have been left to fund their own critical repairs to certain site infrastructure, or simply accept the lack of functionality. Sites have been asked to fund their own site server repairs and replacement, which would more appropriately be covered by District funds.

An update to sites' WiFi systems began approximately eight years ago and remains incomplete. Several schools are still using generations-old WiFi technology, and coverage at some sites does not meet the needs of users. The age and condition of cabling varies widely, and installations have lacked any meaningful standardization, causing network instability. No documented refresh plan for WiFi, or the wired networks that support it, exists.

Currently, District Internet is limited to 3.5 Gbps of throughput, with many schools further limited to 500 Mbps WAN connections. This is unlikely to meet the increased demand for Internet access that will likely accompany a return from Distance Learning.

The District-wide phone system is currently an archaic PBX system, with a few schools using end of life VoIP routers. Expertise in managing this system is in place, but there is no failover, creating significant risk to the District in the event of staff turnover.

With regard to data systems, a lack of coordination and integration among systems has resulted from departments and schools acquiring systems without a centralized plan. Users are largely dissatisfied with the functionality and reliability of the District's Enterprise Resource Planning (ERP) system. Multiple disparate systems have been deployed to solve similar business problems, such as document management, which is currently undertaken through a combination of an end-of-support document management system, site and department share folders, cloud storage through Google, and various third-party tools. This results in an inability to effectively manage the District's data, establish retention policies, and create data access and use policies.

Systems have been acquired and deployed without full recognition that such deployments should meaningfully address staffing needs to ensure desired system performance. To support core systems, the Technology and Information Systems Department has, out of necessity, reduced capacity for technical support to sites to ensure support exists centrally for these systems. Consequently, the organizational structure of the Technology and Information Systems Department no longer reflects the demands of a highly technical field supporting a large, enterprise network. Job descriptions do not address the complexity of modern networking and systems and include outdated functions, such as, “Knowledge of DOS,” and, “Maintain tape and disc library.”

Technology systems acquisition and deployment is not informed by common understanding of classroom needs that would often be collaboratively established through the community creation of an educational specification (Ed Sped) process.

The technology industry’s move to public, private, and hybrid cloud solutions have reduced the District’s capacity to ensure system and data availability and provide for disaster recovery and business continuity. No comprehensive business continuity or disaster recovery plan exists.

While many challenges exist, there are many opportunities for improvement in District technology systems.

Strategies

<p>Strategy 4.1: Provide adequate connectivity for learning, teaching, and business operations through a reliable future-proofed modern network.</p>
<p>Action Step 4.1.1: Increase Internet and WAN throughput, utilizing the federal E-Rate program where possible, to ensure user needs are met, and bandwidth is scalable. In future planning, consider the recommendations outlined by the State Educational Technology Directors Association (SEDTA) for peak utilization capacity for digital learning.</p>
<p>Action Step 4.1.2: Complete a thorough network discovery process to assess the current state of District infrastructure.</p>
<p>Action Step 4.1.3: Create thorough, detailed standards for network infrastructure at all District sites to support anticipated needs and a 40 Gbps backbone, including wired and wireless networks, structured cabling, fiber optic and ethernet cabling, routing and switching, MPoE/MDFs/IDFs.</p>
<p>Action Step 4.1.4: Create a complete network design, including designs for each site, informed by assessments, educational specifications, and standards.</p>
<p>Action Step 4.1.5: Coordinate the implementation of a managed project in prioritized phases - initially prioritizing 1:1 schools and schools with known critical connectivity issues - to efficiently and responsibly utilize available funding sources, such as Measure J, E-Rate, the California Assembly Bill</p>

No. 86 (A.B. 86) COVID-19 Relief Package, and the Elementary and Secondary School Emergency Relief Fund (ESSER I, ESSER II, and ESSER III) in modernizing the network at all District sites.

Action Step 4.1.5: Concurrent with the network modernization project, create an infrastructure refresh plan to ensure the cyclical replacement of network infrastructure components, including an annual budget.

Strategy 4.2: Modernize and sustain core business and academic systems

Action Step 4.2.1: Evaluate the functionality and interoperability of core business and academic systems to determine current and future needs and inform potential changes or acquisitions of new business and academic systems.

Action Step 4.2.2: Explore cloud hosted options for critical business systems, such as our Enterprise Resource Planning (ERP) system, and Student Information System (SIS), to improve reliability, sustainability, and disaster recovery.

Action Step 4.2.3: Evaluate existing business systems to consider current and future needs and determine if a transition to new systems is warranted and feasible.

Action Step 4.2.4: Evaluate the viability of deploying a District-wide document management system to meet the document storage and retrieval needs of District departments.

Action Step 4.2.7: Consider transitioning from the current outdated Private Branch Exchange (PBX) phone system to a modern VoIP system as part of the network refresh program.

Action Step 4.2.8: Define standards and a long-range plan for site security cameras, including purpose, standard locations, and refresh cycle.

Strategy 4.3: Ensure continued, reliable information technology operations by aligning available resources to technology needs.

Action Step 4.3.1: Align staffing and funding resources to adequately support existing and future district technology systems. Consider the need for failover for critical services to avoid knowledge loss in the event of staff turnover by establishing training and pathways for junior technicians to support core systems.

Action Step 4.3.2: Work alongside union partners to modernize job descriptions in accordance with the technology needs of a large district.

Action Step 4.3.3: Provide technicians with dedicated and job-embedded training aligned to District systems, including time within the contract day for training.

Strategy 4.4: Establish modern business continuity and disaster recovery practices and deploy needed systems to ensure the continued, reliable operation of critical business systems.

Action Step 4.4.1: Streamline and improve reliability of data center operations through a modern Hyperconverged Infrastructure (HCI) model.

Action Step 4.4.2: Modernize backup strategies to apply industry standard practices to protect critical District data from disasters and security incidents, and provide for timely recovery.

Action Step 4.4.3: In collaboration with all District departments, conduct a thorough business impact analysis and prepare a business continuity / disaster recovery plan. Ensure that MDUSD department “business owners” are designated for all critical business systems to inform desired service levels.

Action Step 4.4.4: Develop a clear cloud strategy for core services to ensure adequate backups and disaster recovery and meet business continuity needs as appropriate. Explore options for cloud hosting of business and academic systems, such as our Student Information System (SIS) and Enterprise Resource Planning (ERP) system, to determine feasibility.

Action Step 4.4.5: Assess the feasibility and desirability of establishing a secondary data center to provide additional failover and disaster recovery capacity, and the potential addition of a second Internet Service Provider.

Goal 5: Comprehensive Cyber Security and Data Privacy

We believe that effective technology use by students, staff, and families requires safe and secure tools and an environment in which all technology users value privacy and security and are prepared with skills and knowledge to interact appropriately with technology.

Challenges and Opportunities

Protecting a large, complex computer network and its users requires a comprehensive approach to information security and cybersecurity. MDUSD currently operates without a clear plan for this work. Until recently, no vulnerability assessment had been conducted to assess District protections against cybersecurity incidents. District data privacy procedures and policies have been inconsistently documented, and user awareness initiatives have been sporadic.

There is an opportunity for MDUSD to strategically address cybersecurity through the development and implementation of a comprehensive information and cyber security plan.

Strategies

Strategy 5.1: Improve, sustain, and test the District’s cybersecurity posture
Action Step 5.1.1: Create and implement a comprehensive District Information and Cyber Security Plan.
Action Step 5.1.2: Sustain updated systems to protect District users, technologies, and data, including firewall, antivirus, network access control, authentication and user access management,
Action Step 5.1.3: Develop an incident response plan to ensure an effective, timely response to a variety of possible technology and security incidents.
Action Step 5.1.4: Conduct regular security vulnerability assessments and penetration tests to verify and improve security protections.
Action Step 5.1.5: Assess, manage, and mitigate security risk by maintaining an up to date risk register discussed regularly by District leadership.
Strategy 5.2: Establish a clear and comprehensive culture of data stewardship, data privacy, and data security.
Action Step 5.2.1: Establish and implement data privacy and security standards and practices as

outlined in the Consortium for School Networking's (CoSN) Trusted Learning Environment (TLE) framework (trustedlearning.org), and strive to earn the TLE Seal.

Action Step 5.2.2: Consolidate and reduce options for user, department, and school data storage to provide ready access to needed data while minimizing the potential for unintended exposure of sensitive and personal data.

Action Step 5.2.3: Incorporate data privacy and cyber security awareness into training for all staff.

Goal 6: Sustainability

We believe that ensuring students, staff, and families have regular access to essential technologies demands that technology be acquired purposefully and sustainably.

Challenges and Opportunities

The acquisition of technologies in MDUSD has frequently been undertaken without consideration for the need to sustain these technologies into the future. Classroom technologies have often been viewed as optional, and frequently transient funding opportunities have resulted in no clear plan for refreshing devices once purchased. As a result, for example, approximately 40 percent of the existing MDUSD fleet of Chromebooks reaches end-of-life prior to Fall, 2021, and must be e-wasted. Schools have been asked to identify site funding when various infrastructure components, such as fiber-optic cabling, servers, or universal power supplies, fail. In sum, the lack of a clear focus on sustainability of technology resources has resulted in a broad range of aging classroom technologies and a patchwork network susceptible to failure.

One-time funding opportunities have not always been strategically deployed. While technology acquisitions with one-time, targeted, or grant funding may have had significant impact where deployed, the District has not always necessarily used these opportunities to “learn” promising uses of technology with potential for scaling.

Inefficiencies exist in the technology acquisition process, with significant staff time devoted to managing bid processes. An overreliance on bidding out work has a ripple effect as lack of standardized deployments impacts oversight of work quality.

Strategies

Strategy 6.1: Identify efficiencies and cost-savings created by technology acquisitions and clearly articulate funding sources when acquiring technology.
Action Step 6.1.1: Develop and clearly communicate a technology refresh plan outlining which technologies are provided centrally to all sites and which are the responsibility of individual sites.
Action Step 6.1.2: Leverage one-time COVID-19-related funding sources to deploy technologies with the potential to create ongoing efficiencies, such as 1:1 programs and data center / core infrastructure modernization.
Action Step 6.1.3: Create a 1:1 technology sustainability plan to ensure program continuation and to identify potential cost savings and efficiencies created. Include the acquisition of tools to monitor 1:1 technology use and impact, digital tools use and impact, and overall program cost. Develop and communicate expectations for cost saving efforts, including reduced use of paper and increased use of

digital communication for students and families.

Strategy 6.2: Maximize the strategic use of available targeted, one-time, and grant funding opportunities

Action Step 6.2.1: Establish a clear review process for technology hardware and software purchases utilizing targeted, one-time, and grant funding to ensure the District can identify best practices and scale as appropriate.

Action Step 6.2.2: Maximize E-Rate reimbursements by incorporating eligible projects into the overall technology infrastructure refresh plan.

Action Step 6.2.3: Create a register of proposed learning technology projects to enable appropriate targeting of grant opportunities informed by District priorities.

Strategy 6.3: Modernize technology purchasing practices to leverage efficiencies

Action Step 6.3.1: To the extent possible, leverage allowable cooperative and piggyback contracts to streamline and standardize purchasing and assure a professional level of service for technology acquisitions. Reduce time-consuming bidding processes to enable staff to focus on vendor partnerships, and establishment of and accountability to District standards.

Action Step 6.3.2: For proposed technology hardware and software acquisitions, require multi-year budgeting be considered prior to approval.

Action Step 6.3.3: For proposed software acquisitions, require vendors complete a District software acquisition checklist in collaboration with sponsoring departments and schools to ensure compatibility, appropriate privacy and security, and to ensure any additional costs or resources required due to the acquisition are minimized.

Action Step 6.3.4: Seek and maintain long-term partnerships with vendors that provide stability, support, professionalism, and commitment to the needs of MDUSD.

Goal 7: Technology Governance, Continuous Improvement, and Communication

We believe that technology oversight, policies, and capacity building exercises should be inclusive, consultative, guided by best practices, and reflect the needs of all stakeholders.

Challenges and Opportunities

Without a previously communicated and supported vision around technology, decision-making has lacked a clear direction in MDUSD. The Technology and Information Systems (TIS) Department has struggled to provide for the increasingly complex needs of District staff and students. Schools have made decisions in isolation from District priorities. While pockets of innovation have emerged, the lack of a District-wide conversation and direction around technology priorities has resulted in a wide variety of efforts that lack coordination, scalability, and support. Schools acquire technologies without adequate support mechanisms in place. And often these technologies pose additional risk to the District without the capacity to easily coordinate security measures.

No policy framework currently exists governing District technology practices, information and cybersecurity priorities, data use, and other critical services. In the absence of policy, decisions are made without clear objectives and rely on immediate purpose rather than forward-looking strategic priorities.

Ensuring the success of this Strategic Technology Plan requires certain key governance activities

Strategies

Strategy 7.1: Align the prioritization, acquisition, management, implementation, and progress monitoring of District technologies with District priorities.
Action Step 7.1.1: Create a comprehensive technology policy framework to ensure vertical and horizontal alignment of District priorities and compliance efforts. This framework should encompass board policy, administrative regulation, administrative procedures, and Department processes.
Action Step 7.1.2: Establish a stakeholder-driven technology standards committee to create, revise, and communicate District technology standards for devices, systems, and software. This committee would also consider emerging technologies to ensure the District can best anticipate future educational needs.
Action Step 7.1.3: Continue governance activities related to the approval of digital tools to effectively

assess educational need, security and privacy implications, and cost considerations for all digital tools used in MDUSD. Ensure the continuation of a clear process for submitting additional digital tools for consideration.

Action Step 7.1.4: Establish a clear process whereby District leadership is empowered as decision-makers regarding information security and cybersecurity, including the identification, assessment, and management of risk.

Action Step 7.1.5: In coordination with the development of District policy regarding data use, management, retention, and access, consider the creation of a formal data governance structure to oversee District data priorities.

Action Step 7.1.6: Annually update the District Strategic Technology Plan to reflect changing needs, incorporate stakeholder input. Establish a process to ensure active, meaningful participation of stakeholder groups in the plan revision process.

Strategy 7.2: Support schools to focus on continuous improvement

Action Step 7.2.1: Require annual submission by all schools of a five-year technology plan based on a simple template to outline and clearly communicate instructional priorities, device acquisition priorities, and professional learning supports.

Action Step 7.2.2: Require all schools to maintain an active technology committee representative of stakeholders, including students, families, and staff.

Strategy 7.3: Communicate progress with stakeholders

Action Step 7.3.1: Regularly communicate progress on the District Strategic Technology Plan through the District website, family communication platforms, and presentations to the Board of Education.

Action Step 7.3.2: Rename the Technology and Information Services (TIS) Department to the Department of Information Technology (IT Department) to better reflect a modern, professional organization supporting a large user base and sizable network.