BUILDING THE DIGITAL DISTRICT

Preparing Students for the Digital World

San Francisco Unified School District
2014-2019 Technology Plan
The past decade has been transformative for families, communities, and students of the San Francisco Unified School District. Today with the District’s Vision 2025, we are more certain than ever about the changes we must make in our schools and across our organization to ensure students meet the profile of a graduate in 2025 and beyond. Throughout this technology plan, Vision 2025, and the District’s strategic plan Impact Learning, Impact Lives, we remain committed to providing each student with an equal opportunity to succeed and achieve his or her own full potential.

To deliver upon the vision of a world-class education, our District will need to embrace a digital approach to education based in the best of the changing technologies around us. This Digital District plan articulates the role technology will play as a critical enabler to our vision, building on the foresight of both our education professionals and thought leaders within our communities and across the country. From the lunchroom to the classroom, the promise of technology to positively impact the learning and lives of our students is clear. With help and resources from many champions and supporters, we believe we can fulfill that promise through this plan.

The Digital District will serve as a living document, an adaptable guide to the ever-expanding possibilities afforded by technology. We, the District Leadership, believe that this plan, along with Vision 2025, will help our District thoughtfully and deliberately prepare for the future ahead.

We thank you for your commitment and dedication to the students of San Francisco, and we invite you to join us in building the future ahead.

Richard A. Carranza
Superintendent of Schools
Who We Are

Mission

The purpose of the San Francisco Unified School District is to provide each student with an equal opportunity to succeed by promoting intellectual growth, creativity, self-discipline, cultural and linguistic sensitivity, democratic responsibility, economic competence, and physical and mental health so that each student can achieve his or her maximum potential.

Vision

Every student who attends SFUSD schools will graduate from high school ready for college and careers and equipped with the skills, capacities, and dispositions necessary for 21st century success.

Goals

Access and Equity
Make social justice a reality by ensuring every student has access to high quality teaching and learning.

Student Achievement
Create learning environments in all SFUSD schools that foster highly engaged and joyful learners and that support every student reaching his or her potential.

Accountability
Keep district promises to students and families and enlist everyone in the community to join in doing so.

Beliefs

The achievement gap is the greatest civil rights issue facing SFUSD.

It is possible to increase academic achievement of high performing students and accelerate achievement of those currently less academically successful.

Quality schools offer engaging and challenging programs, caring and committed staff, strong and visible leaders and instruction differentiated to meet each child’s needs.

Authentic partnerships are essential to achieving our vision for student success.
Our District

The San Francisco Unified School District (“SFUSD” or the “District”), founded in 1851, educates more than 53,000 of San Francisco’s kindergarten, elementary, middle, and high school age children through a network of 139 PreK-12 schools located throughout the 49 square mile area of City and County of San Francisco.

SFUSD Employees
San Francisco is both a city and a county; therefore, SFUSD’s 8,497 FTEs administer both the School District and the San Francisco County

- 171 (2%) School Site Administrators
- 3,371 (40%) Teachers
- 2,680 (32%) School Support Staff
- 442 (5%) Early Education Services
- 104 (1%) Student Nutrition Services
- 482 (6%) Facilities
- 110 (1%) Central Office Certificated
- 444 (5%) Central Office Classified
- 693 (8%) Central Office/Paraprofessional

SFUSD Schools
San Francisco serves our students at 139 sites throughout San Francisco.

- 12 Early Education Schools
- 8 Transitional Kindergarten Sites
- 71 Elementary & K-8 Schools
- 12 Middle Schools
- 15 High Schools
- 7 County and Court Schools
- 4 Continuation/Alternative Schools
- 10 Administrative Sites
Our Vision

Today’s students are “digital natives”, living and learning in a digital world and strongly influenced by the transformational technologies around them. We at San Francisco Unified School District recognize that the world is changing. As a result, we are fundamentally reimagining what it means to deliver a modern, world-class education that prepares our students for the decade ahead. **Vision 2025** sets a bold course for the District, one in which technology is both a keystone component of the teaching and learning experience, and a critical enabler to fully achieve our vision.

**Vision 2025: Ten Big Shifts from 2014 to 2025**

needs of our students, professionals, families, and communities. Getting there will require a rethinking of the District as a whole, from how our students interact inside and out of the classroom to how we support and run our operations in the Central Office. Finally, we must embrace technology in ways that complement the expertise of our educators today, while setting them up for success tomorrow.

**How to Get There**

In the near term, we define two priorities in our strategic plan - **Impact Learning, Impact Lives** - that will be supported by the Digital District. The first is the shift from teacher-led to student-centered Learning Environments, the second, our adoption of a rigorous Common Core State Standards aligned curriculum. Our teachers will need to transition from a “sage on the stage” teaching style focused on preparing for state mandated tests and a prescribed curriculum to a “guide on the side” teaching style that enables students to learn much more rigorous material driven by student interests. Here, we will continue to invest in the right professional development for teachers and leaders on the theory and practice of technology-enabled learning.
Inherent in this shift is our strong commitment to supporting every student in achieving his or her maximum potential. The District must be culturally and linguistically responsive to students’ identities and backgrounds. Technology is critical to enabling educators to understand the unique learning needs of each student and design a lesson plan that meets the needs of every student in class. Technology allows teachers to frequently check for understanding and provide instantaneous and continuous feedback to students.

What will the Digital District look like over the long term? Three overarching imperatives stand out:

First, it will completely redefine the learning experience, delivering rich digital content to students tailored to their unique needs, abilities, and interests in a 1:1 device environment supported by the curriculum, pedagogy, and flexible spaces needed to succeed.

Second, it will develop the critical tools and systems that our educators, school leaders, and Central Office staff need to become more effective in their work, facilitating collaboration and providing line-of-sight into the comprehensive needs of students.

And third, it build a resilient infrastructure, ensuring that learning is “always-on” by building capacity and redundancy as we grow into a fully digital operating environment.

**Teaching & Learning at the Core**

We recognize that effective technology use requires effective instruction. As we continue to adapt and refine our instructional strategies to effectively deliver the Common Core State Standards, we will closely examine where technology will play a central role. To-date, we have identified a set of curriculum objectives for technology, which we will continue to develop as new technologies and possibilities emerge.
Our Instructional Technology Roadmap

Over the next 5 years, we will be integrating digital technologies into the areas where we have the greatest degree of instructional clarity. In the near-term, we will focus on refining and scaling up digital practices in our Early, Middle, and High Schools through a variety of existing initiatives. In parallel, we will introduce a set of digital practices to all grades bands, such as establishing and expanding the computer science curriculum.

Chart: Instructional Technology Roadmap

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<td><strong>6-8</strong></td>
<td><strong>Technology Infusion into all Curricular Areas across all grades:</strong></td>
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<td>• Math Common Core</td>
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<td>• Next Generation Science Standards</td>
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<td>• Computer Science Curriculum &amp; Coursework</td>
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<td><strong>9-12</strong></td>
<td><strong>Notably, the Digital District will serve as the catalyst for a broader shift towards greater personalization in the District, beginning with pilots in our Middle and High Schools. Personalized learning is a key design element of Vision 2025 and the tailored learning environment and pedagogical methods enabled by the Digital District are key elements. As technologies and student needs evolve over time, we will make deliberate choices around where, when, why, and how personalization occurs in our schools.</strong></td>
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SFUSD Shift to Personalization

- **Individualized**
- **Blended**
- **Tailored Pedagogy**
- **Tailored Learning Environment**
- **Tailored Curriculum**
Professional Development

Successful technology implementations require high-quality, differentiated professional development and follow-up coaching. Research suggests that teacher professional development is crucial in the effective use of technology to redefine the student’s learning experience (Greaves et al. 2012, Hanover Research Council, 2013). This plan calls for the development of a technology savvy teacher capable of first tier self-support of technology in the classroom. The professional development plan is designed to develop the following capacities of SFUSD teachers:

1. Use the technology to engage students in learning and transform the classroom from a teacher-centered instructional environment to a student-centered learning environment.
2. Practice safe and ethical use of the internet. Model these practices for their students and intervene when unethical use of the technology by students is witnessed by the teacher.
3. Troubleshoot common issues with technology; assist students in troubleshooting issues with their technology. Develop the ability to learn new technology and skills and increase the comfort level of the teacher in adapting to rapidly changing technology.
4. Use technology to transform lesson plans, thus enabling students to learn concepts at a deeper level.
5. Use standard technology tools of the District including online collaboration tools, posting assignments online, online attendance entry, communication with parents, reviewing and interpreting student achievement data, and requesting service from the IT Help Desk.

To develop these capacities, the District will develop an assessment method to determine the Professional Development necessary for educators. The assessment method will take into account mandatory training, current teacher capacity, and the needs of the District. The assessment method seeks to categorize educators in a 2x2 quadrant identifying their technical savviness and experience. With this assessment, professional development will be differentiated to meet the needs of educators.

Professional development will be offered in multiple modalities including online, in-person group, and 1:1 coaching. Four series of courses will be developed, with components of each course available online for those educators who only need to focus on one area of the course, or refresher courses after the primary training. The course sequence will be:

Module A: Basic Technology Tools and District Supported Programs
Module B: Applied Pedagogy
Module C: Using the Internet and Digital Literacy
Module D: Participant Portfolios/Classroom Website
Redefine the Learning Experience

Students

Current State

- < 3% devices issued to students for use in instruction
- 60% of devices are more than 4 years old
- 1:5 student to device ratio

Less than 3% of SFUSD students are issued personal technology devices for use in instruction, and those devices are often not used throughout the day. Instead, technology-enabled instruction often occurs in computer labs requiring students to leave their daily classroom environment.

Challenge

Personal devices are at the heart of the technology revolution in the last twenty years. It is unrealistic to expect our students to be ready for college and career unless they have been continuously instructed on how to use technology effectively during their PreK-12 education. Students who lack continuous exposure to technology will be behind their peers from other school districts in college and career.

- Students lack access to Digital Resources
- Students are unable to develop Digital Literacy
- Students cannot practice the safe and ethical use of the Internet
What is Needed

Every student needs to be issued a device that will be used in his or her education. The type of device will vary based on student need.

At the beginning of their academic journey, students generally consume more information than they produce. Tablets are intuitive and powerful devices for accessing information and producing simple artifacts. For this reason, tablets will be the most commonly used device in grades PreK-5, supplemented by the use of laptops in situations where they are a better fit for the instructional purpose.

As they progress in their PreK-12 journey, students need to have the ability to produce increasingly complex multi-media artifacts to demonstrate their understanding of the Common Core State Standards. By the sixth grade, students are producing sufficiently complex artifacts that require the use of a laptop computer, reducing the prevalence of tablets. By the ninth grade, students have achieved sufficient mastery of maintaining their own technology that they can choose to bring their own technology to the classroom and take it home for use outside of the classroom. However, since not all students will bring their own device, any student who does not bring a device from home will be issued the standard device that is also issued to SFUSD teachers.
Redefine the Learning Experience

Educators

Current State

- No District issued Laptops to Educators
- 15% of Educators report no computer in classroom
- 1/3 of teachers bring a personal device to work

Educators are not currently issued laptops by the District. School sites may choose to issue laptops to their educators, leading to an inconsistent distribution of laptops to educators across the District. Approximately 15% of educators report having no computers in their classroom, while close to half of the educators have computers that are past their useful life. A third of the District’s approximately 4,300 educators report using their personal devices for work.

Challenges

Since laptop distribution to educators is inconsistent, the District cannot mandate any District-wide use of technology (such as School Loop) to communicate with parents and students about their classwork. Systemic integration of technology into the curriculum is also difficult given the wide range of technology in use at the District. We are asking educators to lead the use of technology in classrooms and in many cases they have less experience with personal computing devices than their students. Lastly, to build better management systems district-wide we need educators to use laptops to access websites and software, yet we do not give them the tools to do the work that is asked of them.

- Inability for district-wide initiatives with technology
- Teachers need to leave classroom to find technology
- Some teachers less experienced with technology than students
What is Needed

Each educator needs to receive a device as part of their employment. Educators will have a choice of devices that best meet their needs. Educators at the lower grades may receive a tablet and a laptop on the platform of their choice. Educators in upper grades will receive a laptop on the platform of their choice. These devices will be leased to ensure they are regularly upgraded.

Educators need differentiated professional development to redefine the learning experience for the students. Professional development will be tiered to match the capability of the educator to help take them to the next level. After initial professional development, educators will have access to online professional development for follow up learning. They will also have access to an onsite coach to assist them in redefining their lessons enabled by the use of technology.
Develop Critical Tools and Systems

Classrooms

Current State

- 27% of classrooms with sufficient wireless coverage
- 50% of classrooms with projector
- 7% of classrooms with enhanced audio

Few of the District’s classrooms have basic education technology, including projectors and document cameras. Many classrooms have 24 year old telephony that may fail at any time and adequate wireless internet connectivity is rare. 65% of classrooms lack wireless coverage. Overall, only 27% of classrooms have sufficient wireless coverage to meet the needs of a technology-enabled learning environment. Through QTEA funds, the District has increased its overall bandwidth to meet learning standards. However, the District network has many single points of failure that have taken schools and classrooms offline for days.

Challenges

Very few SFUSD classrooms have the technology that educators need to effectively present information and use information online. Systemic integration of technology district-wide is difficult given the wide range of technical capacity in each classroom. Single network connections result in the lack of internet access, creating a barrier to enabling instruction using online resources.

- Inability to use devices where they need to be used
- Information cannot be presented to entire class
- Students with hearing issues unable to hear teacher
What is Needed

Each SFUSD classrooms needs:
- Projector, screen, and document camera
- Printer and modern phone
- Audio equipment to amplify the teacher’s voice and provide support for children with hearing difficulties
- Technology that allows content on any student’s device to be displayed on the projector

Each classroom should have wireless access capable of supporting up to 40 devices streaming High Definition (HD) videos. A network owned and managed by the District with two connections to every school site is needed to increase the reliability of the network and minimize long term costs for maintenance of the network.
Develop Critical Tools and Systems

Central Office

Current State

- No Central repository for Curriculum
- Employee System only supports basic transactions
- Telephony system 24 years old

The SFUSD Central Office does not have adequate technology to manage a large enterprise efficiently and effectively. The District’s Employee Information System has not been updated in over 10 years. Employees have no access to online kiosks to update their information; instead, almost everything is done on paper. The data on paper is then manually entered into a system by another employee. Many critical records are maintained on spreadsheets, decision support resources are limited and asset management is a challenge. The District’s telephony system was last updated district-wide in 1990 and many sites risk failure of their telephone systems.

Challenges

Since school districts understandably tend to focus as many resources as possible on the classroom, it is common to see underinvestment in technology systems that could increase efficiency. However, if SFUSD is going to manage personalized education and track meaningful results then we need the same systems that large companies use to manage staff, budgeting, facilities, and training.

- Educators have no central place for vetted curricular materials and content
- Inability to develop talent and leadership
- Safety risk for students with phone systems about to fail
What is Needed

SFUSD needs several critical software systems to manage the current scale and scope of the District. These systems include:

- A content repository for teachers to access curriculum materials
- A learning management system to allow students to manage their learning
- A professional development system for educators
- HR, budgeting, asset management and facilities management systems
- Data warehouse to support data-driven decision making

SFUSD should also pioneer the use of Customer Relationship Management Software and other capabilities designed to foster community and parent engagement and involvement in schools. The district telephony infrastructure needs to be upgraded to enable modern collaboration between teachers, parents, and administration and ensure the safety of our students in the event of a crisis.
Develop Critical Tools and Systems
Learning Spaces

Current State

57% of students who qualify for free and reduced meals participate in school lunch

98% of Libraries have technology available for student and staff use

After school programs lack a centralized enrollment and payment system

Student learning does not occur only in the classroom. Student learning continues in libraries, after school programs, on the sports field, and in the lunchroom.

Through collaboration with IDEO, SFUSD has developed a comprehensive vision for the school dining experience, called the \textit{Future Dining Experience} to increase participation in school meals while achieving operational and financial efficiencies supported by technology.

Almost every library in the District has technology. The library often serves as the primary source of technology for students and staff at a school site. However, that technology is often outdated.

After school programs provide a rich learning opportunity for San Francisco students. However, only 60.5% of students take advantage of after school programs.

Challenges

The \textit{Future Dining Experience} is a dramatic reinvention of the current school lunch experience, yet no current dining areas are outfitted with the required technology. Libraries need to have updated technology to support student learning outside of a classroom. A major barrier to after school program enrollment is the complexity of determining which subsidy a student may be eligible for after school programs. A centralized enrollment system would enable the District to provide after school programs to all students in the city regardless of their eligibility for subsidies as the system would handle the complexity of local, state, and federal reporting.

Insufficient lunchroom technology that helps increase student lunch participation

Insufficient and outdated technology in libraries prevents students from maximizing the benefits of technology to further their learning.

Insufficient after school program enrollment due to complexity of local, state, and federal funding reporting requirements.
What is Needed

SFUSD school dining areas:
- Smart Meal technology, accompanied by mobile tablets and PIN pads to track student meals
- Vending machine data points and wireless access points
- Digital menu displays
- iPads for distributed Point of Sale systems to support a communal dining experience where students sit at a table and serve themselves from common dishes.

School libraries:
- Library management and resource inventory systems
- Collaboration hardware and software

After-school programs:
- Centralized enrollment and billing system

Fitness programs
- Fitness and exercise monitoring hardware and software
- Attendance software for team sports and activities
Build Resilient Infrastructure
The District Network

Current State

Through the use of funds from the QTEA parcel tax and subsidized with federal E-Rate funds, the SFUSD has built a high-speed network connecting all K-12 classrooms with at least 1 GB bandwidth. While the bandwidth is sufficient, if there is a network problem, school sites have gone days without connectivity while Central Office staff work to bring the connection back online. The downtime is a result of having only one connection per school site, with the exception of 3 school sites. E-Rate does not fund redundant connections, so it is cost prohibitive for the District to build a resilient network under the current funding structure.

Challenge

Without a reliable network, educators will be resistant to use technology in instruction. Students may lose access to the network during critical times such as statewide standardized online testing. The phone system may become unavailable due to a network outage, preventing staff from reaching emergency services.

- Resistance of Educators to use technology if it consistently fails
- Students unable to access online resources during critical times
- Staff access to emergency resources may not be available at critical times
What is Needed

SFUSD needs an infrastructure with built in redundancy so any single failure in the network will not stop instruction for a school site or even the entire District. The District network must be built with the same philosophy used to build an airplane. An airplane has multiple paths of connectivity throughout the aircraft so it can be operable even if a portion of the aircraft is damaged. Each site must have redundant connections to different parts of the school site and the internal network must operate on a loop so the network signal can travel in either direction if the main connection is no longer available.

The District has designed some redundancy in its network by connecting 3 school sites and the District office in a ring. Every other school site connects to the District office through one of the ring school sites. If a ring school site loses one connection, the network traffic will automatically move in the direction with the good connection. The internet is currently connected to the District office. An additional internet connection must be added to one of the school sites on the ring.

To reduce operating costs, SFUSD needs to lease dark fiber to connect the school sites to the District and the internet. Instead of the monthly service fee paid to a data provider, the District can lower costs by maintaining its own lines.
Project Summary
Implementation Structure

The District has the leadership structure in place to provide the necessary supports to successfully implement this plan. There will be close coordination between the Technology, Curriculum & Instruction, Research Planning & Accountability and Special Education teams in building the Digital District. The implementation of the plan will be governed by the Digital District Steering Committee consisting of members from the Executive Leadership team, and leaders from Technology, Curriculum & Instruction, Research Planning & Accountability, and Special Education.

PRELIMINARY IMPLEMENTATION TIMELINE

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Security

To ensure the devices are available for instructional use and minimize loss to the District, the devices must be properly secured at the school site. The SFUSD Central Office is developing a security plan template that addresses chief considerations in securing devices including a locked room for the carts, a bolt in the room to secure the cart, a key management system, and procedures educators must follow to ensure all devices are accounted for at the end of class. The template is a resource for principals to use when developing a security plan. However, due to the disparity between school sites, SFUSD cannot develop a “one size fits all” security plan. Principals will be required to submit a security plan annually to the Central Office where it will be reviewed and approved. The District will conduct periodic audits of randomly selected sites to verify the security plans are being followed at school sites.

Measuring Our Impact

We strongly believe that purposeful technology, rooted firmly in the best instructional practices and executed with fidelity, will help our District accelerate the progress made to-date against the goals outlined in our strategic plan: Impact Learning, Impact Lives. As such, the goals of our technology plan are the same goals of our strategic plan. Because of the comprehensive vision for our plan and our students, we believe progress will be expressed across all of our identified metrics, with specific focus on the following subset:

College and Career Readiness Milestones
- Increase the percentage of 4th grade students meeting standards in English Language Arts
- Increase the percentage of 8th grades students meeting standards in Algebra 1
- Increase the percentage of 10th graders passing CAHSEE in English Language Arts

Access and Equity
- Increase the number of schools meeting API goals for African American, Latino, and English Learner students
- Increase the percentage of English Language Learner students who gain at least one proficiency level (and meet State target by 2015)
- Increase overall four-year graduation rate

Accountability
- Increase the number of students who agree and strongly agree that their teachers and school staff prepare them well for college and career
- Increase the number of parents who agree and strongly agree that families are informed, included, and involved as partners and decision makers in the education of our children
Project Financials

SFUSD has engaged Bellwether Education Partners to assist in the development of a financial plan for the implementation of the Digital District. While there is no doubt that the Digital District will require a large investment, SFUSD believes that it is possible through the combination of District budget commitments, public funding sources, and private philanthropy. To the extent that the needed resources do not materialize, elements of the plan will need to be called back accordingly.

Our analysis of the investment needed includes:
1) The one time and upfront costs associated with upgrading the infrastructure.
2) The ongoing cost of leasing and maintaining the District’s investment in personal computing devices.
3) The staff and leadership that will be needed to implement this large-scale project and support educators in learning how to use technology to transformation education.
4) The technology staff to ensure software and hardware is up-to-date and resolve the issues that arise when technology does not work as expected.
5) The licensing and maintenance of software and hardware.

Preliminary 5-Year Cost Estimate

_Millions USD_

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<tr>
<td>6. Learning &amp; Curr. Systems</td>
<td>$2.6</td>
<td>$2.5</td>
<td>$2.6</td>
<td>$1.9</td>
<td>$1.9</td>
<td>$11.6</td>
<td>$7.8</td>
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<td>7. Learning Spaces</td>
<td>$1.3</td>
<td>$0.7</td>
<td>$0.3</td>
<td>$0.1</td>
<td>$0.1</td>
<td>$2.4</td>
<td>$2.3</td>
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<td>8. District Management Systems</td>
<td>$0.1</td>
<td>$3.6</td>
<td>$5.4</td>
<td>$2.9</td>
<td>$0.5</td>
<td>$12.5</td>
<td>$9.1</td>
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<tr>
<td>Critical Tools &amp; Systems</td>
<td>$5.6</td>
<td>$9.2</td>
<td>$9.8</td>
<td>$6.3</td>
<td>$3.9</td>
<td>$34.8</td>
<td>$24.6</td>
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<td>9. Connectivity Fundamentals</td>
<td>$1.8</td>
<td>$16.4</td>
<td>$9.3</td>
<td>$0.2</td>
<td>$0.2</td>
<td>$27.9</td>
<td>$27.6</td>
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<tr>
<td>10. Technology Resilience</td>
<td>$0.0</td>
<td>$20.3</td>
<td>$20.3</td>
<td>$0.3</td>
<td>$0.3</td>
<td>$41.1</td>
<td>$40.5</td>
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<td>Resilient Infrastructure Sub-Total</td>
<td>$1.8</td>
<td>$36.7</td>
<td>$29.6</td>
<td>$0.4</td>
<td>$0.5</td>
<td>$69.0</td>
<td>$68.1</td>
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<tr>
<td>Total 5-Year Investment</td>
<td>$18.9</td>
<td>$64.2</td>
<td>$61.0</td>
<td>$26.7</td>
<td>$24.8</td>
<td>$195.6</td>
<td>$144.1</td>
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</table>
Funding Considerations

Long-term financial sustainability is a critical imperative of digital transformation in school Districts and a key success factor for SFUSD. In order to develop a financially sustainable plan, we are exploring the various funding options available to the District over the course of the Digital District initiative, as well as identifying and examining the impact of near-term and long-term fiscal trends on potential funding sources. This plan reflects current estimates of SFUSD’s technology needs and assumes the necessary financial investments will be made from multiple sources. Should actual available funding fall short of the costs, elements of the plan will need to be scaled back.

We anticipate that the Digital District will be primarily funded from three main sources: (1) self (District), (2) public, and (3) private sources.

Key elements of self-funding sources include:

1. **Budget reallocations from realized cost savings.** Components of the Digital District will result in the replacement or upgrade of existing, outdated and analog systems and infrastructure, creating realizable savings in on-going maintenance and support costs.
2. **Cost avoidance.** We anticipate some reductions to public funding for ongoing expenses (such as E-Rate funding for telecommunications services) that will result in significant increases in cost to the District as funding is phased out. Anticipating and changing infrastructure ahead of these funding reductions will help us avoid on-going costs in the future.
3. **Planned expenditures.** Finally, some aspects of the Digital District are currently funded or will be funded through future budgets.

Key elements of public sources include:

1. **Local ballot revenue measures.** Bond issuances, supported by tax payments, to fund infrastructure upgrades and device programs are a significant funding source for some school districts. Local parcel taxes and other ballot measures such as the Quality Teacher Education Act (QTEA) have also contributed to educational funding on an on-going basis. We will examine the financial feasibility and implications of these programs for the Digital District.
2. **State funding sources.** Some state programs such as the Common Core State Standards Implementation Funds provide funding for some technology costs that are directly related to the Digital District including a 1:10 ratio of devices for students and basic elementary school wireless connectivity to support online assessments.
3. **Federal funding sources.** We anticipate that several federal educational funds, such as the E-Rate program, will evolve over time to fund components of the Digital District (such as wireless connectivity and internet infrastructure). We will monitor impending changes to these programs for their relevance to the Digital District and take action when appropriate.

Key elements of private sources include:

1. **Individual and Foundation-based Philanthropy.** There are multiple examples across the country of private philanthropy supporting public school districts, particularly as part of efforts by organizations and businesses to invest in local communities. We will look at common areas
of interest and potential opportunities to partner with philanthropic organizations to partially fund the Digital District.

2. **In-kind donations and partnerships.** In-kind donations and partnerships represent a significant opportunity to work closely with the private sector, bringing to bear the greatest strengths and assets of their organizations. One potentially significant impact would be to reduce the one-time and ongoing capital expenditures required to jumpstart the Digital District through the provision of independent assessments on infrastructure needs and in-kind donations of devices, equipment, and software.

**Our District’s Advocacy Strategy**

Recently, there have been a number of policy initiatives announced at the federal and state level with significant financial implications for our plan. Notably, the FCC approved a plan in July 2014 that commits $2B to fund the installation of broadband and wireless networks in schools through their existing E-Rate program. At face value, these changes suggest an additional funding source that the District may access in support of our infrastructure investments. Yet careful analysis suggests that the changes, as they stand today, will result in a net decrease in funding to the District. As the $2B pledged is designed to be cost neutral, much of the funding will necessarily come from other elements of E-Rate, funding sources which the District currently depends upon. At the same time, the ConnectED initiative has a similar program goal of expanding network connectivity. ConnectED convenes a variety of public and private sector resources to support connectivity, teacher training, and educational technology. While we believe ConnectED should be a significant resource for the District, it is unclear how to best access these resources in a coordinated way. These are simply two examples of significant public funding programs that have the potential to support our District ambitions, but both require a clear understanding of the nuances in policy, eligibility, and impact on our District.

We believe it is our responsibility as a public institution to advocate for these and other programs, understanding the opportunities to increase our access to public resources and making an educated and deliberate effort to increase these opportunities. Political advocacy is not our core priority at SFUSD; our unwavering mission is to provide our students the opportunities they need to achieve their full potential. However, where public policy has an impact on our ability to provide these opportunities, we will make deliberate and educated efforts to advocate for the needs of our students and communities, including:

- Clearly understanding and articulating positions on relevant policy issues
- Identifying new areas of opportunity for the District
- Shaping existing policy issues to support our needs
- Developing and maintaining relationships with key policy-makers at the federal, state, and local level
- Educating the public on the policy needs and issues relevant to public education
- Leading and supporting advocacy efforts on behalf of our families and communities
Research that Informs the Digital District Plan

The Building the Digital District Plan details how technology will be used to implement the District’s Strategic Plan, *Impact Learning, Impact Lives*. The Strategic Plan embraces a set of research-based core principles as the foundation for school transformation. These same core principles inform the Building the Digital District Plan:

- Rich & Affirming Learning Environments
- Empowering Pedagogy
- Challenging & Relevant Curriculum
- High Quality Instructional Resources
- Valid & Comprehensive Assessment
- High Quality Professional Preparation & Support
- Powerful Family/Community Engagement
- Advocacy-Oriented Administrative/Leadership Systems

The Strategic Plan, *Impact Learning, Impact Lives* envisions a culturally and linguistically responsive, multilingual PreK-12 twenty-first century curricular program in which powerful technology is used to engage all students and to foster 21st century learning. The Strategic Plan defines the key concepts for reform:

- **21st Century Skills, Capabilities, and Dispositions**: Research identifies the skills needed for students to succeed in the 21st Century:
  - Academic competencies
  - Multilingual and cross-cultural competencies
  - Technological literacy
  - Communications skills
  - Critical and creative thinking, reasoning, and solution seeking
  - Social environmental and civic responsibility
  - Strength of character

  [http://www.21stcenturyskills.org](http://www.21stcenturyskills.org)
  [http://www.netTrekker.com](http://www.netTrekker.com)
  [http://www.metiri.com](http://www.metiri.com)

- **Core Curriculum and Common Learning Assessments**: All students must have access to rigorous and consistent curriculum that meets the new California and national core standards and promotes 21st century learning for all students. The 21st century core curriculum will be delivered with teachers, school leaders, and students using differentiated instructional strategies that are informed by Common Learning Assessments (CLA). Teachers and instructional staff at all schools continuously refine their approach to using core curriculum, instructional strategies, resources, and assessment tools through active participation in Equity Centered Professional Learning Communities (ECPLCs).

  Common Core State Standards Initiative: Standards-Setting Criteria


- **Culturally and Linguistically Responsive Pedagogy**: A pedagogy that acknowledges, responds to, and celebrates fundamental cultures and languages offers full, equitable access to education for students from all cultures and language groups.

  - http://www.nameorg/resources/defining_multicultural_education.htm
  - http://www.edchange.org/multicultural/
  - http://www.nabe.org/
  - http://rethingingschools.org/special_reports/bilingual/resources.shtml
  - http://www.bilingualeducation.org/
  - http://www.ncela.gwu.edu/

- **College and Career Readiness**: All graduating students will be ready for College and Career by expanding intervention and enrichment programs, developing early college and career awareness, completion of coursework to help fulfill California public university requirements. The adoption of the Common Core Curriculum Standards is one strategy to improve college and career readiness. Career Technical Academies and pathway programs motivate students to think about their personal careers, offer a technology integrated college preparation curriculum with a career theme and have meaningful partnerships with the professions.

The Building the Digital District Plan defines how technology will be used to support these principles and key concepts.

**Technology Integration into the Curriculum:** Research shows that effective integration of technology into an integrated, interdisciplinary curriculum to develop 21st century learning skills and improves students’ performance. Technology is effective when:

- Technology is incorporated as a routine part of the learning environment.
- Technology use includes 21st century skills required for students to thrive in the future.
- Standards-aligned electronic learning resources are utilized that enhance the adopted curriculum appropriate to support student achievement.
- Electronic technologies are used to access and exchange information.
- Technology tools assist students with productivity, research, problem solving, higher-order thinking, and decision-making activities related to learning.
- Students are allowed to choose and use appropriate technology tools to obtain information, analyze, synthesize, and assimilate information, and then present in an acceptable manner.
- Technology is used to engage students in activities that are difficult, if not impossible, to replicate without technology, such as simulations, immediate formative assessments, and global real time collaboration.
- Supports student performance of authentic tasks, which usually involve multiple disciplines and are challenging in their complexity.


*“An Overview of Technology and Education Reform,”* a research project conducted by SRI International and sponsored by the Office of Educational Research and Improvement, US Department of Education.


Professional Development to Integrate Technology into a 21st Century Common Core Curriculum: Professional development must be embedded in a long-term change process and incorporate ongoing, rigorous in-service in content and pedagogy, time for reflection and peer collaboration, coaching and mentoring and ready access to learning resources and expertise. If technology is to be an effective tool for learning, then technology training must be integral to that entire professional development process rather than treated as a stand-alone subject.

Unlike action plans generated from the top down, teachers are invested in the solutions generated from their own collaborative inquiry around student data.

Office of Technology Assessment 1995 (http://www.wws.princeton.org)

Infrastructure to Build the Foundation for 21st Century Learning: The Building the Digital District Plan calls for the upgrade of District infrastructure to provide wireless and resilient broadband connections to every classroom in SFUSD as the first step in laying the foundation for a 21st century classroom “without walls.” The Plan defines the strategies to ensure equitable access to the tools that best engage students in the learning goals, improve operability and functionality, and reduce total costs of ownership. The Plan also calls for the establishment or re-alignment of technology usage policies and standards to integrate technology into the institutional fabric of a District.