

**Jefferson School District 14J
Technology Strategic Plan**

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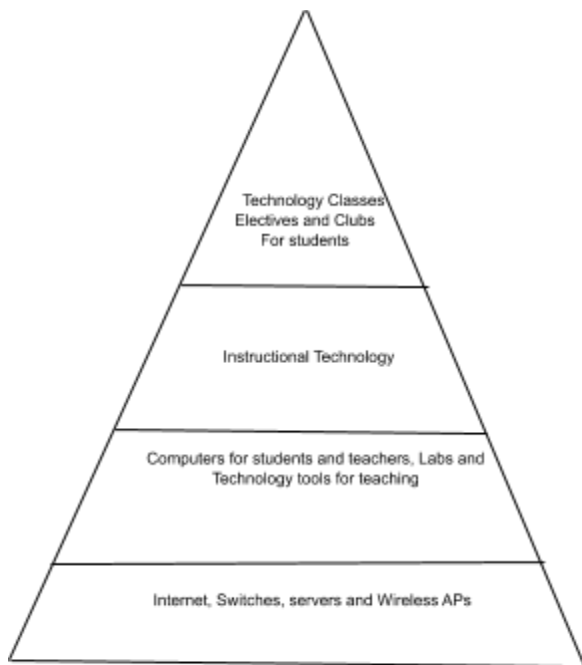
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Vision:

Preparing students to face the challenges in the modern workforce requires equipping students with the skill necessary to work in a collaborative environment where employees may be collaborating with coworkers on projects in different geographic regions. This modern collaborative workforce requires individuals who are not just technically savvy but are comfortable adapting in a world of constantly changing technology. As the graduates of tomorrow enter college and the workforce, they will be expected to have the competencies necessary to work in this environment and without these skill they will be quickly left behind by workers who can meet these demands.

This poses a unique challenge for most schools in the United States especially schools in rural areas with funding challenges. When I walk around Jefferson SD I see teachers, students and the district are working on outdated technology that is ready to be retired and can not meet the demands for preparing students for the future. In order to align with Jeffersons SD strategic plan and help make Jefferson a Destination of Choice in Marion County it is important that we improve the infrastructure and technological opportunities at Jefferson SD so families recognize Jefferson as a school district that prepares kids for the future.

In order to do this we need to build a solid foundation.

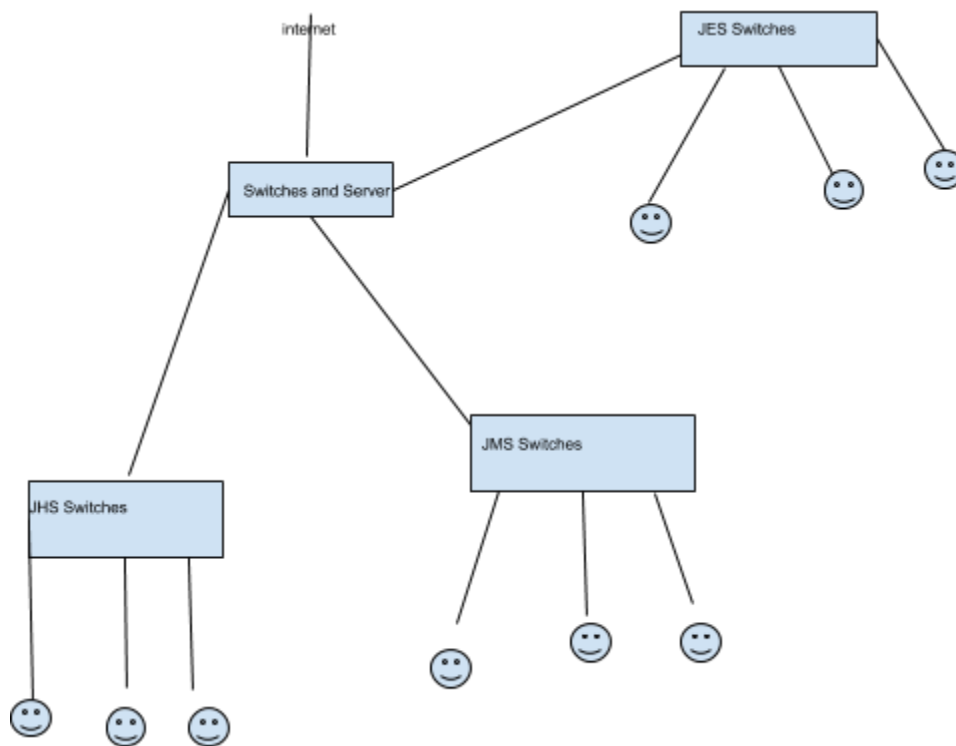


Goals and Objectives

The Base (Internet, Switches, Servers, and wireless AP's)

The most important place to start is with the base. Your network infrastructure is the backbone that will support all of your computers, software and classes. If this infrastructure is not solid then you will experience problems with internet access and how will computer perform and can complete the necessary tasks on the internet.

Here is a brief overview of how a computer network works. There is a Fiber Optic line that comes into the District that brings the internet to all the school. That fiber optic line connect to a switch and there is a whole network of switches that distribute that signal to computers that are either plugged into a network jack or are connected via wireless to a wireless access point. To be able to pass information back and forth there are servers which track every computers address and know that when you send a request to the internet it can tell it how to get to the internet and where the information needs to go so it goes back to the same computer that requested the information.



You want your switches and your cabling to be able to exchange data as fast as possible so that when a lot of users are using the network computers can respond quickly to requests. On your network you have fiber optics that can support a 10 GB backbone which is really good. However your switches in place are old and only support 1 GB. Another problem is there isn't enough lines running back to the switches. So you have labs where instead of each computer having its own 1GB connection back to the switch they ran one cable to the room then plugged in another switch which then creates a bottleneck where several computer share that one connection to the switch thus decreasing the bandwidth. Additionally the school doesn't have enough wireless access points. You should have 1 WAP per classroom so there is plenty of bandwidth for all of the computer trying to access data across the network. I am finding that at best 4 classrooms are trying to share an WAP and the load is causing students to get kicked off from the internet in the middle of use and creates a dismal educational experience. The servers are doing their job well but the hardware they are on is getting old and at some point will need to be replaced.

Recommendations:

- 1.) You have newer switches that support 10GB that need to be installed. I recommend getting them in place so you can take full advantage of your fiber optic network. WESD is under contract to finish this project.
- 2.) You have a lot of small hubs around that not only create bottlenecks but can cause security issues with the network. I recommend running enough connections back to the switches to remove these devices from the network. I can perform this task and cabling is pretty inexpensive.
- 3.) You need to increase your wireless access points to meet your educational demands. My recommendation is modernizing your wireless network and to utilize E-rate funding to help pay for this expense.
- 4.) Long Term you will want to get a new VM server to replace your current server in the next 3-5 years.
- 5.) You still have remnants of an old Novel network lingering out there. I recommend continuing to remove and replace those server components.

Budgeting

1. With E-rate funding the district should invest \$45,000 to update its wireless infrastructure.
2. I would need about \$2,000 to cover the cost of wiring in the district.
3. I would recommend keeping another \$5,000 available for purchase new switches, WAP's or other network related projects.

Second Layer (Computers and Technology)

Once you have a solid base then you want to make sure you have good tools for students and teachers to use. You are making great strides in bringing in Chromebooks and modernizing the computers that students use. However, most of the technology being used by the teacher is old and is running software that is no longer supported by microsoft.

Recommendations:

1. We really need to update the technology that teachers are using. I am recommending moving them to a high end chromebook, with a version of Office 365 so they can use both MS Office and Google applications. I am working on looking for the best accessories that will allow teacher to continue to perform all of the same tasks the currently do plus allow for more collaborative work in the classroom.
2. I would continue with working to replace old lab computers and would recommend at least \$10,000 be allocated each year for the continued replacement and upgrade of computers.

Budgeting

4. A fund of \$10,000 each year for the purchase of new student computers to replace outdated equipment.
5. You have 53 teachers so I would recommend investing 53,000 spread out over the next 2-3 years to update and replace their classroom technology. After that you will want to plan on making a similar investment every 5 years.

Layer 3 (Instructional Technology)

Once we have a solid foundation and teachers have good tools for teaching then I think it is important to develop an Instructional Technology Plan to help teacher utilize that technology in the classroom.

Recommendation

1. Create an instructional Technology plan for training and identify people at each campus who can help bridge the gap between the Technology Department and the teaching environment. I would like to see this get developed and implemented in the next 1-2 years.

Budgeting

6. Funding for training for technology staff as well as people identified at each campus to aid in instructional technology.

Layer 4 (Classes and Extracurricular Activities)

One of the things I have noticed is that Jefferson SD does not have any computer science education being offered in the district. My previous school was in a similar situation but as more graduates from STISD attended college the school started discovering that many of their top graduates felt under prepared for college as they started to run into the expectation of having a basic understanding of programming for upper level math and science classes. This helped create the drive to start developing programs so students received the skills necessary to be successful in college.

Recommendations:

1. Start creating clubs that promote computer science and technology that are accessible to all levels of K-12. Programming clubs, robotics clubs, media clubs etc...
2. Start looking for ways to offer courses for K-12 that gets them introduces to computer science concepts and skills. Code.org offers a free comprehensive computer science curriculum that allowed my previous school to offer computer programming to TAG students at Elementary, create a semester long programming class for middle school and create a CTE track for computer science at the High School level.

We found once these course and clubs were offered there was huge demand for the material from the student body.

Budgeting

7. Funding to support the purchase of equipment for clubs in activities.
8. Future planning for staffing to support growth of computer science related education.