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CORDOVA SCHOOL DISTRICT

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Keith Zamudio
Director of Technology Board Report
March 12, 2019

2017-2018 GOALS FOR THE TECHNOLOGY DEPARTMENT

- Continue to investigate CSD's data link services between Mt. Eccles Elementary School and Cordova Jr./Sr. High School as allowed by E-Rate's Second Modernization Order.
- Continue to investigate CSD's bandwidth needs to accommodate our digital learning environment.
- Continue to expand the Cordova City Consortium for E-Rate subsidies.

Network Services

I continue to work with Plan IT Consulting of Palmer, AK. The discovery portion of the network survey has been completed. We are conducting meetings preparing our report and recommendations. Our report will be a framework that identifies the current state of our network infrastructure and related resources, and provide a road map to build capacity that is capable of meeting the future resource requirements of CSD's digital learning environment.

The network survey coincides with our E-Rate application for 2019. As noted, we are looking to leverage Category 2 E-Rate funds to help us with upgrading network infrastructure components including network switches and related wireless access points (WAP). Along with Internet services, our network infrastructure supports wireless access, telephony, and file sharing. The core of this infrastructure are the switches that route and pass traffic efficiently.

The work completed by the discovery portion of the network survey provided the information to confirm and verify compatibility, reliability and predictability of services including the integration of new network equipment. Below is a summary of recommendations that need our consideration.

CCSD Summary – PlanIT Consulting

Your switching environment and your facility cabling are the most critical pieces of your computing infrastructure. Modern switching environments provide client (cabled) access; PoE for phones, WAPs, and cameras; management via loop detection, cabling faults, and Quality of Service (QoS); security (data segregation via vlan assignment) and access control for the entire network; plus switching has the primary routing responsibility (for making the traffic flow decisions on your network.)

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A robust switching design lays the groundwork which all of your other technology relies upon. The existing switching environment should be re-engineered to provide years of trouble-free, predictable performance. This may require some additional cabling for uplinks and building interconnects.

Essentially, the roadmap for your technology choices should include solutions that are cloud-managed and monitored; select a single-vendor solution for each core component to ease management tasks, and provide enough capacity to handle hardware failures without downtime.

Switching/Routing:
The switching infrastructure you're using now is working, but it's not optimized, and much of it won't work easily when you add new wireless devices. Most of your switching devices won't provide enough power to drive a new WIFI environment without some significant workarounds.

Wireless:
Your wireless gear is ready to be retired. Modern wireless systems provide wonderful performance, easy maintenance, and reliable security options that weren't invented yet when your current gear was being installed. Every new phone or device on your network would benefit from the added throughput and security, and you will be able to manage these devices with little fuss.

Phones:
Outsource this if possible. Phones require expertise, hardware, AND urgency. Generally speaking, we don't ask for anything new or exciting from our phone systems in education—but they have to work, every time. Your existing systems are adequate for your needs, but your real challenge will be maintaining the hardware moving forward. Voice is classified as a life/safety requirement, so you don't have the option of ignoring this one.

Firewall/security:
Outsource this if possible, test it often, and keep paying attention. Maintaining appropriate safeguards in this changing landscape generally requires expertise, AND urgency. A single crypto-virus attack could cripple the operation of your organization instantly, as we've seen in multiple spots across Alaska over the last year. Proper security is a frame of mind as much as a product. Modern security solutions tie together your firewall and antivirus products, along with implementing robust

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operational safeguards on the management side. Due diligence here really requires a separate inquiry.

Servers:
Reduce and simplify wherever possible. Cloud hosting is all the rage, but the best operational value comes from choosing applications that do the job, and don't leave a large maintenance footprint on your campus. If you're going to keep servers in-house, make sure your hardware support contracts stay current, and keep systems with spare capacity readily available.

Plan of Attack:

Re-engineer and replace wired switching infrastructure. Provide consistent, reliable performance and robust PoE capability across your campus. Completely replace all switching components, to provide the core backbone required for all of your other technology investments. Good switching will simplify management and maintenance of your network for years to come. A switching rollout will require a properly engineered plan to fix the most glaring performance and configuration issues you have today.

Roll out updated wireless, and rely upon the same engineered solution you apply to your switches. A properly engineered infrastructure plan will provide inclusive solutions for all of your technology updates.

Analyze your staffing and technical support options, and upgrade where you have to. New switches and wireless should set CCSD up for many years of reliable operation. Outsource voice and security services if possible. Contract with a 3rd party to enforce the proper security posture for your organization, including disaster-recovery components. Keep security and DR in your annual IT budget.

As we review the proposals that have been submitted in response to our E-Rate application's request for proposals, we will continue to work closely with PlanIT Consulting to ensure compatibility.

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The Cordova City Consortium for E-Rate subsidies has successfully filed their Form 470 for Funding Year 2019. We are currently working on our Form 471 application. The Form 471 is where our consortium applies for actual subsidies. We will submit our requests with documentation that confirms our expenses for services.

The Cordova City Consortium is working closely with Advanced Data Services (ADS) to meet application deadlines. We are currently drafting our requests while confirming our fiscal commitments. Our Form 471application will include the following:

- An identified and approved bid to upgrade our wireless infrastructure leveraging E-Rate subsidies.
- The Cordova City Consortium will seek a new ISP contract for Internet services. We are seeking a one-year contract with the option of 4, one-year extensions.

Once proposals have been submitted and vetted by the IT Department and ADS, the admin team will review and select what we need and what we can afford. Our plan is to have our recommendations, proposals and contracts prepared for our March School Board meeting. As I write this, we are negotiating and reviewing proposals.

The overall goal of the Cordova City Consortium is to increase capacity while reducing costs and improving services for the entire community.

ASTE 2019 - Unplugged

CSD sent a team of educators to ASTE 2019 - Unplugged. Team members included Mt. Eccles staff members Krysta Williams and Lovie Brock, and High School staff Sara Hottinger, Doug Carroll, and Emily Moody. Additionally, School Board Member, Pete Hoepfner attended.

I was excited to have a Cordova school board member in attendance. I wasted no time putting him to work. ☺ To provide Pete with an Alaskan IT Director's overview and perspective, I signed him up for our statewide Technology Directors Summit. Thank you, Pete, for attending ASTE 2019.

Former CHS student, Josie Moffitt, was one of two recipients of the 2019 H.A. 'Red' Boucher Scholarship Award. The other recipient is Natalie Marlowe of Kenia, Alaska. Each recipient received $1000 scholarships. Both recipients are in their Freshman year of college. Reading the essays of scholarship applicants are inspiring and encouraging. Below is the narrative of what I shared with ASTE's membership.

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This year's recipients for the 2019 H.A. Red Boucher Scholarship are Natalie Marlowe and Joscelyn Moffitt.

Natalie Marlowe is a 2018 graduate of Kenai Central High School in Kenia, Alaska. Natalie is currently enrolled at George Fox University in Newberg, Oregon where she is pursuing a Bachelor of Science degree in Mechanical Engineering.

Natalie discovered her passion for technology in high school where she had the opportunity to obtain training in facilitating video conferencing. She observed the power of video technology to provide extended and otherwise unavailable learning opportunities for the students of the Kenai Peninsula. Natalie experienced first-hand the potential of video conferencing. Her participation enabled her to meet students in Ghana, Africa and Ramallah, Palestine, take advanced courses, and participate in a remote internship during her senior year. Natalie leveraged her training by providing younger students virtual field trips.

Natalie identified her degree program's philosophy with a "focus on servant engineering. This component of the curriculum focuses on how to use a degree in engineering to help better the lives of people who are dealing with difficult situations." Natalie further explained that servant engineering is integrated in her degree program. Students partner in teams facilitated by faculty members and work with local organizations to engineer solutions to specific issues or challenges.

For Natalie, servant engineering "speaks of the real purpose behind technology in the first place, and my goal is to learn how I can apply this idea in my future career as I move forward with a technological degree." This philosophical perspective exemplifies the spirit of the H.A. Red Boucher Scholarship and Red's life's work. Natalie identified and articulated attributes of her chosen field of study and how they relate to her personal career interests.

Our second recipient for the H.A. Red Boucher Scholarship is, Joscelyn Moffitt a 2018 graduate of Cordova Jr./Sr. High School and currently enrolled at the University of Idaho seeking a Bachelor of Science degree in Virtual Technology and Design.

Josie explained that Virtual Technology and Design, or VTD, is a unique program offered by the College of Art and Architecture. She explains that it is a relatively new field of study that is constantly modified and re-modified to keep pace with the swiftly-changing industry. Josie is intrigued with VTD's capacity for continual advancement and adaptation. Josie shared that her degree curriculum is structured so students develop a learning skill set to keep pace with VTD's ever changing landscape.

Josie wrote in her scholarship application that her interest in technology was peaked as a seventh grader when she was introduced to computer animation. She described this animation as, "a simple 'move' function that took a rectangle across the screen, I was sold." Josie began

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investigating ways to use animations to spice up her classroom presentations. Using vector art to create her own objects, she began to create short animations and movies. Josie leveraged these tools adding programming and game design to her investigations.

Josie attributed the development of her interests in VTD to the fact that she and all students in Cordova are provided with a laptop for their classes. Josie wrote, "I am extremely grateful for the opportunities these computers brought us students. Along with the immense help it brought us while doing traditional schoolwork, without them, I would have been quite restricted in pursuit of my interests; it's likely I would not have even developed those interests in the first place, nor discovered my amazing technology-based major." Josie concludes her application's Personal Essay with the following quote that embodies the spirit of the H.A. Red Boucher Scholarship.

> *I am blessed to have lived in a community that provides its youth with such powerful opportunities, and hope that someday I will be able to pay it back using the technological know-how it guided me to learn all those years ago.*

Don't our scholarship recipients sound like they are consumers of education and that learning is a lifelong activity? We applaud Natalie's and Josie's spirit, and encourage them to pursue their dreams.

Thank you for your consideration,
Keith Zamudio – Technology Director

CURRENT PROJECTS/CONSIDERATIONS

- Continue to manage CSD's website
- Update student photos in PowerSchool
- Configuring upgraded web filter
- Upgrade and updating CSD's Managed Software Center
- Upgrade and updating CSD's modular system deployment
- Deploying Mobile Device Management server

UPCOMING PROJECTS/CONSIDERATIONS

- Continue work on E-Rate application for 2017, 2018, 2019 and 2020.
- Wi-Fi upgrade utilizing E-Rate subsidies
- Facilitate the survey of our network.