

Improving/Optimizing SLA Tech

A Capstone Project

A Quick Introduction

My name is Alonso Lai

- Senior Assistant Teacher (SAT) for Several Classes
 - English 1
 - CTE Engineering Technologies 2*
 - App and Game Programming
- Part of the SLA Tech Team
 - Began its work this year
 - “Unofficial Tech Guy”
- Senior within the Class of 2022
- Studying @ Harrisburg University of Science and Technology
 - B.S. Computer and Information Sciences
 - B.S. Information Systems and Informations Technology

SLA Core Values

Inquiry

Research

Collaboration

Presentation

Reflection

How can I improve the way SLA uses technology?

- What are some of the current aspects of SLA's technological infrastructure that can be improved? (SLA General + CTE Engineering + CTE DigVid)
- What are the possible solutions for improving these aspects?
- How do we implement these changes?
- What are the effects of these changes?
- What more needs to be done? (Allowing for future Seniors to tackle the question)

Identifying Areas Of Improvement/Optimizations

Survey within the Advisory Memo

- Student Version
 - ≈500 @ SLA
 - 158 responses
 - 31.6% response rate
- Teacher Version
 - ≈30 @ SLA
 - 6 responses
 - 20% response rate

SLA Tech Improvement/Optimization


PURPOSE OF SURVEY:
Hi, my name is Alonso. I am a Senior from the Class of 2022.
For my capstone project, I wish to improve and optimize the use of technology both in and out of SLA's classrooms. Most of the time, students do not encounter any problem with their laptops, smart phones, wifi, etc. But when problems do occur, they are a real pain to deal with. (Trust me, I know how it feels.) However, before anything can be done, I must identify what are the problems folks at SLA find most frustrating and/or encounter most often.

INSTRUCTIONS FOR ANSWERING SURVEY:
This is where you come into play. Please assist me in this project of improving and optimizing our school's technological infrastructure by letting me know...

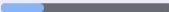
- "WHAT ARE SOME OF THE PROBLEMS YOU FACE WHEN USING TECHNOLOGY AT SLA?"
- "WHAT ARE SOME POSSIBLE AREAS OF IMPROVEMENT?"
- "HOW DO YOU WISH TO SEE TECHNOLOGY BEING USED AT SLA?"

TELL US YOUR PROBLEMS,
BIG AND SMALL!
WE WANT TO HEAR IT ALL!
SO PLEASE HELP US IMPROVE THIS SCHOOL,
BY THIS TIME IN THE FALL!

(Emails are recorded for sending an optional copy of your response, and for documenting student demographics, mainly grade)

alai22@scienceleadership.org [Switch account](#) 

Your email will be recorded when you submit this form

[Next](#)  Page 1 of 4 [Clear form](#)

Identifying Areas Of Improvement/Optimizations

General Problems/Areas of Improvement

- Internet/Networking Problems
- "Slow" Computers
- **Blocked Sites/Firewall**
- Computer Storage
- **General Knowledge On Using Technology**
- Quiet PA System

CTE Engineering Problems/Areas of Improvement

- **Update To Windows 10 Image/Software**
- **General Maintenance Of Computers + Documentation**
- Specialized Documentation For Workshop Machinery

CTE DigVid Problems/Areas of Improvement

- **More Storage For Files**
- General Maintenance Of Computers + Documentation
- Lack Of An Inventory System
- Lack Of Understanding On Using The G-Suite

1	Timestamp	Email Address	What are some of the prc	Description of your prob	How often does this prob	How important is this for	Is there anything you wish for me (Alonso) or the school (Teachers and Staff)
14	1/27/2022 17:48:45		End User Knowledge (ie. I haven't had too much tr	Not Very Often		3	
15	1/27/2022 18:54:23		Networking (ie. Can't con My chrome book is just r	Often		4	
16	1/28/2022 12:13:46		Software (ie. Chrome doi WiFi can be super bad a	Often		7	N/A
17	1/28/2022 12:14:16		Software (ie. Chrome doi Somethings just either d	Not Very Often		8	I will always do anything for you(to Alonso)
18	1/28/2022 12:14:44		Networking (ie. Can't con frequently the wifi just d	Often		9	none I can think of
19	1/28/2022 12:14:57		Networking (ie. Can't con The wifi in this building is	Very Often		5	
20	1/28/2022 12:15:29		Networking (ie. Can't con The wifi is bad in many p	Often		3	
21	1/28/2022 12:17:43		N/A	I do not have a problem	N/A	0	My emails are slow when they have been sent
22	1/28/2022 12:19:32		Networking (ie. Can't con Bad wifi so sometimes m	Often		8	no
23	1/28/2022 12:21:37		Hardware (ie. the Screen Problem's that I have w	Rarely		1	nope
24	1/28/2022 12:23:24		Data Storage (ie. not beli I need storage to downlo	All The Time		10	Besides my storage problem on my chromebook there is nothing else.
25	1/28/2022 12:55:47		Networking (ie. Can't con the wifi barely works in th	All The Time		4	You are very well dressed!
26	1/28/2022 13:22:45		Networking (ie. Can't con Troubles connecting to w	Not Very Often		6	
27	1/28/2022 16:43:57		Networking (ie. Can't con N/A	Not Very Often		7	-
28	1/29/2022 12:14:24		Hardware (ie. the Screen My keyboard often has r	More Often		3	You're doing great Alonso
29	1/30/2022 9:29:39		Networking (ie. Can't con Sometimes my computer	Often		1	Nope
30	1/31/2022 8:21:17		Hardware (ie. the Screen Things not loading, not b	Not Very Often		6	
31	1/31/2022 8:21:24		Hardware (ie. the Screen I just never know what tr	All The Time		3	No but thank you!
32	1/31/2022 8:21:58		n/a	N/A		0	N/A
33	1/31/2022 8:23:41		Certain websites are bloc	N/A		0	What is the project?
34	1/31/2022 8:23:51		Software (ie. Chrome doi When trying to get on the	All The Time		8	
35	1/31/2022 8:24:29		Software (ie. Chrome doi Sometimes, the WiFi isn'	Not Very Often		3	N/A
36	1/31/2022 8:25:18		Networking (ie. Can't con Sometimes I just random	Not Very Often		5	No Not really
37	1/31/2022 8:25:20		Hardware (ie. the Screen I often have trouble with	Often		4	The decision to force you into a group for a project that accounts for more th
38	1/31/2022 8:33:07		Software (ie. Chrome doi n/a	N/A		10	n/a
39	1/31/2022 8:33:27		Networking (ie. Can't con a lot of applications/prog	Not Very Often		1	
40	1/31/2022 11:43:27		Hardware (ie. the Screen school wifi not working, s	Not Very Often		3	
41	1/31/2022 11:43:29		Networking (ie. Can't con WiFi is just a little slow, th	Not Very Often		3	No
42	1/31/2022 11:44:03		None	None		0	No
43	1/31/2022 11:44:45		N/A	No problems	N/A	0	N/A
44	1/31/2022 11:44:56		N/A	N/A	N/A	0	N/A
45	1/31/2022 11:44:57		Networking (ie. Can't con The wifi network is poor	(More Often		9	
46	1/31/2022 11:45:11		Hardware (ie. the Screen N/A	Rarely		5	NAH
47	1/31/2022 11:45:15		N/A	N/A	N/A	0	
48	1/31/2022 11:45:27		N/A	N/A	N/A	0	No.
49	1/31/2022 11:45:27		Data Storage (ie. not beli Downloading pdfs is takin	Not Very Often		2	N/A
50	1/31/2022 11:45:41		N/A	N/A	N/A	0	No.)
51	1/31/2022 11:45:48		N/A	N/A	N/A	0	Hello suit guy
52	1/31/2022 11:45:52		Networking (ie. Can't con Sometimes the wifi is sup	Rarely		1	
53	1/31/2022 11:46:34		Software (ie. Chrome doi The PhilaSD wifi is anno	Very Often		7	
54	1/31/2022 11:47:20		n/a	n/a	N/A	0	nope
55	1/31/2022 11:47:28		N/A	N/A	N/A	0	No, there is nothing I wish for you or the school teachers and staff to know.
56	1/31/2022 11:47:55		Networking (ie. Can't con It's nothing too difficult, b	Often		6	n/a
57	1/31/2022 11:48:18		Software (ie. Chrome doi Sometimes in the middi	Often		8	I'm not sure
58	1/31/2022 11:48:24		N/A	N/A	N/A	1	Nope
59	1/31/2022 11:48:55		Software (ie. Chrome doi N/A	Rarely		0	Nope
60	1/31/2022 11:49:26		Software (ie. Chrome doi the chrome os sucks and	Very Often		7	chromebook and chrome os suck

General Problems/Areas of Improvement

- ***Blocked Sites/Firewall***
- ***General Knowledge On Using Technology***

Brought these and multiple concerns to the attention of folks at the District.

Several meetings discussing:

- How School Network works (specifically SLA/BFHS)
- Firewall Discussion
- Student participation within IT
- Technology Focused Professional Development
- Institutionalized Knowledge & Processes
- District Laptops vs. SLA Laptops



Chief Information Officer
Melanie S. Harris



Executive Director, IT Security
Andrew Speese



Executive Director, IT Architecture
Stephanie Sullivan



Executive Director, IT Operations
Rich Bateman

(WIP) Creating Opportunities in IT @ PhilaSD

- Open to the idea
- Currently communicating and working through logistics
- Possibilities include;
 - Basic Chromebook repair
 - Internships in IT departments @ 440
 - SLA Tech Team?
 - More ideas, bring them up!

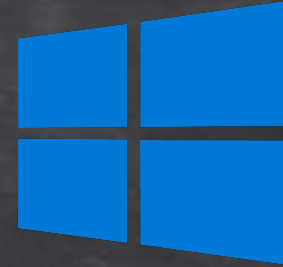


CTE Engineering Problems/Areas of Improvement

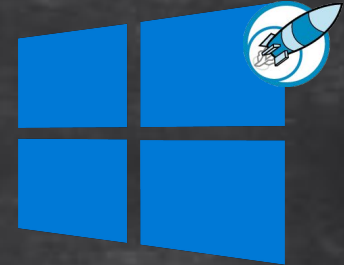
- ***Update To Windows 10 Image/Software***
- ***General Maintenance Of Computers + Documentation***

Key points:

- Get replacements for Old Engineering Laptops
- Create a custom and up to date version of Windows 10 for Engineers to use
- Begin extensive documentation of computers and events on a Spreadsheet



Windows 10
v. 1909



Windows 10
v. 21H2

CTE DigVid Problems/Areas of Improvement

- ***More Storage For Files***

Key points:

- Footage, Files, etc. are scattered all over the place
- File are not easily shared across editing stations
- Lack of Footage Archive
- Not enough storage for a years worth of footage



CTE DigVid Problems/Areas of Improvement

- ***More Storage For Files***

BUILD A SERVER

- Repurposed an old server
- Generous donation from folks at PhilaSD
- Apple Xserve Servers (x3)
- Promise VTrak E-Class 16x SAS RAID Subsystem (x1)
- **Dell PowerVault NX3100 (x1)**

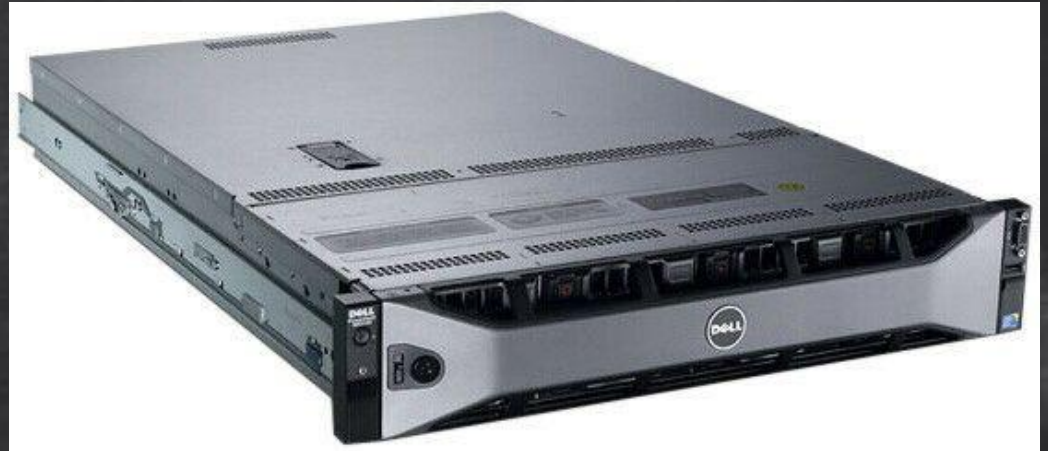


CTE DigVid Problems/Areas of Improvement

- ***More Storage For Files***

Dell PowerVault NX3100 (x1)

- 12 Drive Bays
 - 1TB Hard Drives
- 12TB of Hard Drive Space
- Hardware RAID 5
 - Prevent Data Loss
- 10TB in Usable Storage
- Running OpenMediaVault (OMV)
 - Build off of Debian 11 Linux
- [Web-based Administration over the Server](#)



Shout-outs

These amazing people are a great help with this project for...



Mr. Lehmann

Handling building logistics and guiding me through administrative policies



Mr. Kamal

Being extremely supportive and also being a fellow mind to bounce ideas around



Mr. Henkel

Graciously volunteering as my mentor as well as sparking the idea for this project



Ms. Ustaris

Allowing me access to the DigVid lab and being very patient with me as I get the server online



Jeremy

Continuing the work of arranging opportunities in IT @ 440



Torian

For allowing me to house the server in his office