ORANGE COUNTY
BOARD OF EDUCATION

AGENDA ITEM ABSTRACT

Meeting Date: April 22, 2013

AGENDA ITEM No. 13-04-(2)-09

ACTION ITEM: (Y/N) N

SUBJECT: Elementary 1:1 Initiative – Phase III Work Session

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ATTACHMENTS:
1. Infrastructure.
2. Device Information (3 pages).
3. Financials.
4. Proposed Funding Plan.
5. Communication.
6. OCS Elementary Digital Conversion Timeline.

Additions to the *Preparing Orange County Schools for the Digital Classroom* --Elementary 1:1 Digital Conversion document can be viewed on the district's web site at http://www.orange.k12.nc.us/1to1/digital_classroom.html. This document includes information presented at both the April 8 and April 22, 2013 board meetings, and includes complete device specifications.

PURPOSE: The purpose of this agenda item is to provide the Board of Education information concerning Orange County Schools' (OCS) Digital 1:1 Conversion, Phase III; Grades 3-5, Part II.

BACKGROUND: On April 8, 2013 the Board of Education was provided information on the following topics for OCS Elementary Digital 1:1 Conversion:

1. Background Information.
2. Program Planning.
3. Professional Development.
4. Digital Resources.
5. Elementary Digital Conversion Questions and Answers.

During this meeting, presentations were made by five teachers, a student and an administrator, during which they demonstrated some representative current uses of technology in our elementary schools, as well as shared their thoughts on how technology has enhanced the instructional program.

An addendum to the *Preparing Orange County Schools for the Digital Classroom* is attached. This document includes specific information concerning infrastructure upgrade, device information, financial information, communication plans, technical/instructional support needs, policies and procedures and a timeline. Following the processes used in the secondary conversion, this information will be brought back to the board for further consideration.

continued

FINANCIAL IMPACT: The cost for implementation of Phase III includes purchase of the elementary devices, digital resources, batteries for laptops in 3rd grade classrooms and the wireless upgrades for each elementary school. A funding plan is included in the attached report. The superintendent's recommended 2013-2014 budget includes an additional $135,000 for tech support staff.

RECOMMENDATION: The Superintendent recommends the Board of Education receive presentations, discuss the Phase III plan and provide direction to professional staff as needed.

INFRASTRUCTURE

During the summer of 2012, the bandwidth at all elementary school was increased from 10 Mgb to 100 Mgb. The current wireless system was evaluated, and a request for proposal (rfp) was issued to upgrade the current "coverage" wireless system to a more robust "capacity" wireless system. The opening of the rfp proposals will occur on April 19, 2013 at the Board of Education building.

The wireless upgrade has been budgeted at $250,000 (the district will not have firm numbers until the rfp for the Elementary Wireless Upgrade comes in on April 19). $125,000 has been budgeted from the 2012-2013 Technology budget; an additional $125,000 for the 2013-2014 school year has been budgeted to pay for this upgrade.

The rfp specified that all Grades 3-4-5, specials (music, art, world language, physical education, etc.) and exceptional children classrooms have the capacity for 35 simultaneous log-ons to the network at the same speed as a wired connection. The media centers needed to have a capacity for 70 simultaneous log-ons at wired speed.

The district is replacing 100 Mgb switches to 1 Gb switches as funds become available or repairs to the switches become necessary.

Servers in all of the elementary schools have been upgraded to Server 2008 and virtualized. If a tablet with Windows 8 is chosen, then an upgrade to Server 2012 would be necessary on our servers. Cost estimates for this upgrade are approximately $30,000.

DEVICE INFORMATION

Grade 3:

Dell D630 and E5400 laptops and carts were moved to 3rd grade classrooms across the district during the 2012-2013 school year. These laptops have another year of warranty, but the batteries need to be refreshed in August.

Grades 4 & 5:

Once the requirements of what the device should be able to do were confirmed, a hardware criterion was created. (See Program Planning, page **5** of this document.)

Two ruggedized laptops and two tablets with full operating systems were evaluated (see next page) by the specifications of each.

After evaluating the specifications of each device, a collaborative document listing the Pros and Cons of each was created. * (PROS AND CONS OF A WINDOWS 8 TABLET AND LAPTOP DEVICE, next page). At the last meeting of the committee, the pros and cons were discussed. Committee members were asked to share the information with staff members of their respective schools.

After allowing time for discussion among school staff, an informal survey of the Elementary Digital Conversion committee (members were asked to respond to the survey as to which device they felt their staff would prefer) reflected that a majority of the committee preferred a laptop device.

The Superintendent's Technical Advisory Committee members met and reviewed the Lenovo Tablet 2 device. While they liked the tablet, the pricing was $200 more per unit than the laptop, and they were concerned with the pricing. Decreased pricing for the Tablet 2 is reflected on the "Device Options for Elementary 1:1."

PROS AND CONS OF A WINDOWS 8 TABLET AND LAPTOP DEVICE

Windows 8 Tablet		Laptop	
Pros	**Cons**	**Pros**	**Cons**
Lighter and smaller to store	If we don't have keyboards with all of the tablets, these will not be realistic of what is expected of students in college or in a career.	Meet all current requirements for state on-line testing	
Provides a more simplistic interface while building keyboard awareness	More difficult to repair	An easier transition to MS since students are currently using them	
On screen or attached keyboard is a stripped down version --confusing	Teachers will not have the same operating system, thereby making it difficult to teach from.	Easier to repair	
More "user friendly" for younger students or some of the EC students for whom keyboarding is not a viable option.	Teachers will not have a tablet to model online activities, lessons, typing documents, PowerPoints, etc.	More in line with where technology is currently at in the college and career fields	
Very functional for the age level. The keyboards on tablets are an appropriate size for this age student, and they do not have all the extra keys all around when learning the basics of typing. If teachers are given the same tablet, they would have the same ability to interface with the kids.	New OS is DRASTICALLY different than the way Windows has been with live-tiles...	Teachers have the same operating system.	
Difference in product between students and teachers won't matter much as long as the teacher knows how to find the internet (since we are phasing out software)	Is it repairable if a student has issues?	Teachers are more comfortable working with laptops and understand how to use them.	
Most likely by the time students are in the work force, electronics will have moved away from hardware buttons anyway	I fear that teachers will not have the time to learn how to use or implement a new type of device; therefore, they will not be put to good use in all classrooms.	Students have been exposed to laptops; they know at least a little about how to use them.	
From the Music perspective, tablets are far better suited for improving skills that are difficult to understand through point-and-click	We WILL HAVE TO buy keyboards	More durable	
	Will the Discovery Techbook features work on tablets?		
	Will we need a more expensive case? Won't students need some sort of "stand" to hold it upright on their desks to make more functional?		
	Teachers may not have the same device to understand its use		
	Cumbersome to use with Google docs		
	Some web based programs such as Movie Maker are more difficult to use on a tablet.		

*This document was created by the committee and has not been edited.

ELEMENTARY DEVICE COMPARISON MATRIX

Questions	Dell Tablet	Lenovo-Thinkpad II	Lenovo X131e	Dell Lattitude 3330
Specs				
What is the processor?	Intel Atom Z2760	Intel Atom Z2760	AMD 450 Dual Core	Intel I3 processor
What is the processor speed?	1.8 GHz	1.8 GHz	1.65 GHz	1.333 GHz
What is the hard drive size and speed?	32 gb-flash memory	32 gb-flash memory	320 gb--7200 rpm	500 Hybrid drive
Is it a solid state hard drive?	Yes	Yes	No	No
What is the memory?	2 gb	2 gb	4 gb	4 gb
What ports does it have?	5	5	8	6
Does it have a VGA port?	No	No	Yes	Yes
What is the display size?	10.1	10.1	11.6	13.3
What is the keyboard size?	NA	NA	Standard	Standard
How long is the battery life per charge?	Up to 10 hours, 30 minutes battery life Up to 10 hours, 30 minutes battery life1 *Battery is built-in to the laptop and is not replaceable by the customer.	25 days: Connected Standby; 150 hrs: MP3 playback, 10hrs: Video streaming	8.5 hours	8 hours
Web cams?	2	2	1	1
What type of graphics card?	Qualcomm Integrated Adreno 225 GPU	Intel Integrated HD SGX545 GFx	AMD Radeon 6310M--5700 speed	Intel HD 3000
Is there an ethernet port?	No	No	Yes	Yes
Is there a dvd drive?	No	No	No	No
What is the weight of the device?	1.4 lbs.	1.3 lbs.	3.9 lbs.	3.9 lbs.
Support				
Does the warranty come with next day service?	Yes	Yes	Yes	Yes
Hardware protection				
Ruggedized	No	No	Yes	Some features
Active Protection System	Yes	Yes	Yes	Yes
Keys on keyboard protection	NA	NA	Yes	Yes
Spill resistant keyboard	NA	NA	Yes	Yes
Protection around screen	No	No	Yes	Yes
Cost	**$586**	**$499**	**$638**	**$625**
Keyboard Case	$111	$99		
Next Day 3 year Warranty	Available	Available		
Next day 4 year Warranty			X	X

All devices have imaging, shipping and asset tags included in the prices.
*Lenovo is working with Microsoft to get better pricing on the licensing of the operating system.

FINANCIALS

Devices:

A final full funding proposal will be dependent on:

- the device chosen – tablet or laptop
- the decision on whether the students will take the devices home; if the device is not going home, carts or similar container will be necessary to charge and secure the devices each night. If the device is going home, some type of protective covering (backpack/sleeve) will be necessary

If a tablet is chosen, additional server upgrades will need to be made and usb devices for imaging the tablets will need to be purchased.

Infrastructure:

- Final cost from the RFP for wireless –estimated to be $250,000.

Staffing:

A recommendation of the Elementary Digital Conversion committee is that an instructional/technical staff member be located in every elementary school.

Other considerations for future implications:

If a tablet is chosen, the refresh date for the tablet devices will be the same year as the secondary laptops.

Device Options for Elementary 1:1

TABLET DEVICE *

Take home with case and keyboard

	Quantity	Per unit Cost	Total device cost	Keyboard and Case ($111 Dell; Lenovo $99; x 1200)	Total Cost
Dell	1200	$ 586.00	$ 703,200.00	$ 133,200.00	$ 836,400.00
Lenovo	1200	$ 499.00	$ 598,800.00	$ 118,800.00	$ 717,600.00

Stays at school

	Quantity	Per unit Cost	Total device cost	Carts (90 @ $600)	Total Cost
Dell	1200	$ 586.00	$ 703,200.00	$ 54,000.00	$ 757,200.00
Lenovo	1200	$ 499.00	$ 598,800.00	$ 54,000.00	$ 652,800.00

* Both the Dell and Lenovo tablets are with a 1 year warranty.

Note: Pricing for a 3 year, next day warranty, on site warranty for the tablets would be an additional $78 for Lenovo and $76 for Dell per tablet. Shipping is included in the cost of both tablets.

LAPTOP DEVICE**

Take home with sleeve

	Quantity	Per unit Cost	Total device cost	Sleeve ($10 x 1200)	Total Cost
Dell	1200	$ 625.00	$ 750,000.00	$ 12,000.00	$ 762,000.00
Lenovo	1200	$ 638.00	$ 765,600.00	$ 12,000.00	$ 777,600.00

Take home with backpack

	Quantity	Per unit Cost	Total device cost	Backpack ($50 x 1200)	Total Cost
Dell	1200	$ 625.00	$ 750,000.00	$ 60,000.00	$ 810,000.00
Lenovo	1200	$ 638.00	$ 765,600.00	$ 60,000.00	$ 825,600.00

Stays at school

	Quantity	Per unit Cost	Total device cost	Carts (90 @ $600)	Total Cost
Dell	1200	$ 625.00	$ 750,000.00	$ 54,000.00	$ 804,000.00
Lenovo	1200	$ 638.00	$ 765,600.00	$ 54,000.00	$ 819,600.00

**Both the Dell and Lenovo laptops are with a 4 year warranty and shipping is included.

***All pricing is before sales tax, 7.5%.**

Proposed Funding Plan for OCS 1:1 Laptop Initiative--Revised 4/13

	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	Total
Funding Sources						
Technology Funds CIP	$ 250,000		$ 365,700 (3)			$ 615,700
Reallocation of State CTE Funds	$ 16,200					$ 16,200
State Textbook Funds	$ 142,000		$ 365,700 (3)			$ 507,700
Quarter Cent sales tax		$ 490,000 (2)	$ 490,000	$ 490,000	$ 490,000	$ 1,960,000
Various Curriculum & Instruction budgets		$ 181,097 (2)	$ 181,097	$ 181,097	$ 181,097	$ 724,388
State Classroom Supplies and Materials			$ 36,000 (4)			$ 36,000
Capital Fund Balance		$ 205,000	$ 60,000			$ 265,000
Usage Fee			$ 30,000 (1)	$ 30,000	$ 30,000	$ 90,000
Total Funding Sources	**$ 408,200**	**$ 876,097**	**$ 1,528,497**	**$ 701,097**	**$ 701,097**	**$ 4,214,988**
						$ 4,214,988

	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	Total
Implementation Costs						
Phase 1-Laptop Purchase - K-12 Certified Staff *(650 laptops @ $628 each)*	$ 408,200					$ 408,200
Phase 2 - Annual Lease/Purchase Payment for Purchase of Grades 6 - 12 Laptops *(based on the lowest submitted finance rate)*		$ 671,097 (2)	$ 671,097	$ 671,097	$ 671,097	$ 2,684,388
Phase 2 - Backpacks - Grades 6-12 (*4100 backpacks @ $50*)		$ 205,000	$ 30,000 (1)			$ 235,000
Phase 3 - Laptops for Grades 4-5 (*1200 devices @ xxx each)*			$ 731,400 (3)			$ 731,400
Phase 3 - Batteries for 3rd grade (600 * $60)			$ 36,000 (4)			$ 36,000
Phase 3 - Backpacks Grades 4-5 (1200 backpacks @ $50)			$ 60,000	$ 30,000	$ 30,000	$ 120,000
Total Implementation Cost	**$ 408,200**	**$ 876,097**	**$ 1,528,497**	**$ 701,097**	**$ 701,097**	**$ 4,214,988**

(1) The backpack amount in the 2013-2014 school year from Grade 6-12 is to cover the estimated 600 rising 6th grade students.

$ 4,214,988

(2) Quarter cent sales tax plus funds from various C&I budgets will fund the annual lease payments.

(3) The elementary devices will be paid from Technology CIP and State Textbook funds.

(4) State Classroom Supplies and Materials will increase next year: 2012-13, $248,748; 2013-14, DPI Planning Allotments,$444,582; Governor's Proposed Budget, $300,671.

****These amounts are included in the current budgeted expenses for the district.**

Network**	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 225,000
Wireless Infrastructure**	$ 125,000	$ 125,000	$ 125,000	$ 5,000	$ 5,000	$ 385,000
Digital resources (Textbook funds)**	$ 120,000	$ 120,000	$ 120,000	$ 120,000	$ 120,000	$ 600,000

COMMUNICATION

In May of 2012, a digital conversion plan for Orange County Schools was approved. This plan had 3 phases: teachers, secondary schools, and grades 3-4-5. Elementary staff members have spent the 2012-2013 school year discussing how to teach with digital materials, what device would be the best for elementary students, attending professional development sessions to broaden their skills, and starting to create their own digital materials.

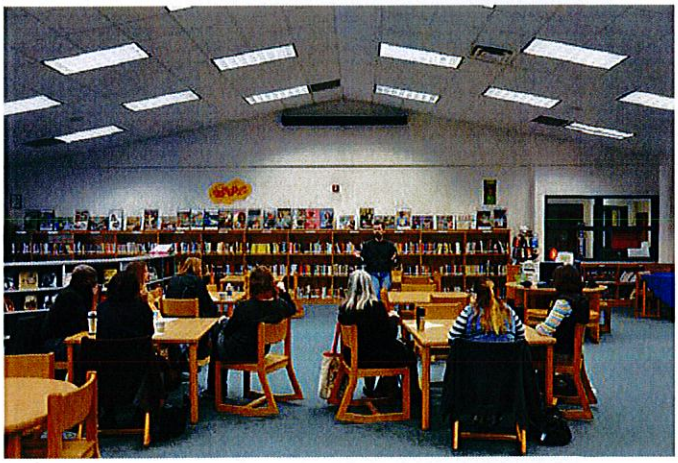
On November 29, 2012 at the Family Academy- Lenovo 1:1 night, information concerning the elementary digital program was presented. Parents were given information on how the vision of technology use at the elementary was different than that of the secondary schools. A digital device in the hands of elementary students Grades 3-5 does not mean the district expects these students to use them in every class, every day. Filtering of the Internet will be more stringent, and the highly successful hands-on projects now in place will continue.

The Family Academy program will be sponsoring a *Digital Conversion* night at all elementary schools in May. At this meeting, teachers and students will highlight how they have used technology in their classrooms, and principals will share information with parents concerning what the Digital Conversion will look like in their school. Parents will then be given an opportunity to ask questions.

Before school starts, additional parent/student meetings will take place to ensure all parents have had an opportunity to gather information about the Digital Conversion at the elementary level and to ask questions.

Information will also be given to the community through:

- School and district websites
- News articles
- Information to PTSA's and/or other parent organizations
- Information to businesses
- Information to Chamber and other community organizations



ORANGE COUNTY SCHOOLS
ELEMENTARY DIGITAL CONVERSION TIMELINE

January – March	Digital Conversion Committee –meets to discuss needs and make recommendations for the 1:1 roll out
March – April	Request for proposal for elementary wireless upgrade
April	Board of Education receives information concerning the Elementary Digital Conversion and selects the device
April-May	Board approves a Funding plan for Digital Conversion
May	Devices are ordered
May	Family Academy- Elementary Digital Conversion Night
July	Hillsborough Elementary- Parent/Student meetings
July	Device roll out Hillsborough Elementary
August	Parent/Student meetings for elementary schools
August	Device roll out at elementary schools