Oak Park Elementary School District 97

260 Madison ▪ Oak Park ▪ Illinois ▪ 60302 ▪ ph: 708.524.3000 ▪ fax: 708.524.3019 ▪ www.op97.org

TO: Dr. Carol Kelley, Superintendent

FROM: Michael Arensdorff, Senior Director of Technology

SUBJECT: Technology Plan Update

DATE: May 23, 2017

Names of presenters: Michael Arensdorff

Type of report: Technology Plan Review and Update

Report format: Report and Recommendations

Preview of purpose and content of report: Update for year two of the technology plan; information about the work performed by the Technology Advisory Committee during the 2016-17 school year; recommendations for year three of the technology plan

Budgetary Impact: The 2017-18 capital expenditure will be $739,757. The revenue generated from selling our current fleet of devices is estimated to be $324,250. When budget cuts are considered, the overall impact will be **$24,131.07**, since cuts and savings total $391,375.93.

Data to be presented: May 23, 2017

District Goals: Known, Nurtured, & Celebrated Learners & Creative Critical Thinker & Global Citizen

Core Pillars: Supporting Equitable Access to Rigorous, Responsive Instruction & Strong Relationships with families and community

During the past two years, I have used these reports to provide the board with information about the technology department's vision, and also share our plans/recommendations for supporting the work of the district. Much of our time and resources during that time period was invested into improving our network infrastructure. This coming year, however, we determined, with the help of the district's Technology Advisory Committee, that our focus should be on tools/refresh for student devices.

Before I share the department's recommendations for the 2017-18 school year, I want to provide a brief update on the work we completed this year. This work included:

- Upgrading all of our core switches.
- Purchasing two servers that are being used for our disaster recovery site.
- Refreshing the devices for our kindergarten students and teachers, as well as our physical education teachers.
- Discussing plans for the potential fiber project with the Village of Oak Park. We allocated $10,000 for this work during the 2016-17 school year, but did not spend it because we were awaiting the outcome of the referenda.

2016-2017 – Expenditures for Year 2 of the Technology Plan

Infrastructure Upgrades Servers, Switches, Routers	$188,000 – Complete
Kindergarten/PE Teacher iPad Refresh	$134,000 – Complete
Disaster Recovery Site	$38,000 – Complete
Fiber move to new admin	$10,500 – Complete
Oak Park Fiber Design Planning	$10,000 – In progress
Admin/Admin Assistant Device Lease	$26,255 – Complete
Total	**$406,755**

2016-2017 – Savings for Year 2 of the Technology Plan

Below is a brief overview of the money saved this year by upgrading our systems, taking advantage of eRate and switching providers for our WAN/Internet service.

- Printer System Upgrade – We will save an estimated $60,000 by implementing a more uniform printing solution across the district. This solution also allows us to print materials in-house versus buying them from outside vendors. For example, we saved $112,506.93 by producing the Eureka math workbooks in our Print Shop. **Total savings: $172,506.93**.

- Cisco Phone System Upgrade – The district was able to continue saving money in conjunction with the transition to a new phone system. This was the second year of a three-year lease payment. **Total savings: $14,669**.

- eRate – We save money this year via eRate by leveraging the category 2 funding for the switches. **Total savings: $42,000**.

- Comcast WAN/Internet transition – We switched our providers for WAN/Internet service from AT&T to Comcast. **Total savings: $60,000**.

2016-2017 Budget	2016-2017 Savings	Actual Expense
$406,755	**$289,175.93**	**$117,579.07**

2017-2018 Planning and Recommendation
In this section of the report, you will receive the following information.

- How we arrived at our recommendations for the 2017-18 school year
- What we are recommending
- Reasons for the recommendations
- What the recommendations will cost

Technology Advisory Committee
We issued a call in June 2016 for volunteers to serve on the Technology Advisory Committee. We received a total of 28 applications for the 14 available spots. The team, which was finalized in September 2016, included five students, four building/district office administrators, two teachers, four parents/guardians and one community member. These individuals represented eight of our 10 school buildings. We have and will continue to work to get members from all of our schools, and will utilize various avenues to ensure that each building has a voice in this work.

The committee met eight times between October 2016 and May 2017. During these meetings, were able to:

- Root our work in the district vision and the Education Reimagined article
- Participate in a brainstorming activity that was focused on solutions and 10X thinking
- Discuss, review and select focus areas for the committee that included personalization and learning spaces
- Compile questions and organize a total of 26 focus groups for students and staff
- Analyze and synthesize the focus group data into the enclosed one-page output
- Use the available data from the focus groups, BrightBytes survey and learning walks to develop recommendations for the third year of the technology plan

Why?
Equity of access is one of the key principles/goals that is guiding the ongoing implementation of our technology plan. Below are examples of how our teachers and students are currently using technology to achieve this principle/goal and support learning both in and out of the classroom.

- Iteration/prototyping – 2nd Grade Class Inventing, Prototyping and documenting
- Innovative practices - Kid cam – staff member reflecting on practice and student learning through the eyes of the students
- Business creation/entrepreneur/engineering - Linda Crystal
- Science – Engineering – Rube Goldberg
- PLTW – Student Innovation
- Music – Student-led collaboration
- Art – Student Animations
- Social Studies/Humanities - Mystery Skype – Geography lesson; student

collaboration to research, critical thinking, communicate, decision-making, Global connections and learning
- Student Voice & Feedback/Communication to Peers
- Global Collaboration – Global Virtual Classroom
- Digital Citizenship – Cyber Bullying Scenarios

With that said, I also believe we must maintain a balance in terms of the tools and methods we use to deliver instruction. By doing so, we can effectively leverage the various resources we have at our disposal to provide the children we serve with a well-rounded educational experience.

2017-2018 – Recommended Expenditures for Year 3 of the Technology Plan
Below is a summary, total cost and brief explanation of each line item for year three of the technology plan.

Professional Learning	$ 20,000
Student Device Refresh	$590,981
Innovation Research & Development	$ 20,000
Innovation Design Spaces	$ 40,000
Internet Equity	$ 28,776
Fiber Design Consultant	$ 10,000
PLTW Refresh	$ 30,000
Subtotal	$739,757
Revenues (from device sale)	-$324,250 (estimated)
Total Net	**$424,293**

Explanation of Recommended Expenditures for Year 3 of the Technology Plan
Student Device Refresh
This recommendation includes a full refresh of:

- All iPad minis for grades three through eight – We will be refreshing 2,000 iPad Minis for grades three through five with full-size iPads, and refreshing the devices for our middle school students with 2,050 Chromebooks.

- Shared devices for first and second grade – We will be refreshing 400 iPad Minis for our first and second graders with full-size iPads.

- Devices that support the Project Lead the Way program at the middle schools - We will be refreshing the devices used in conjunction with the Project Lead the Way program at Brooks and Julian, which include 117 Macbook Pros. Most of these devices will be replaced via 101 devices that were donated by SalesForce.

Internet for All – Mobile Hot Spots
The research and outreach we conducted earlier this year revealed that approximately 220 of our students and their families do not have home Internet access. During the past six months, I have explored options that exist for providing all students with equitable access to this critical resource. In previous years, we have promoted

programs like Comcast's Internet Essentials initiative, which provide discounted service to families in need. However, I have spoken with several other vendors about the options that are available, and received proposals from Kajeet, Verizon, Sprint and Beacon Mobile. Below is additional information about these proposals

- While Verizon is offering free hotspots, the charge for unlimited data is $35.99, which is only $4 cheaper per month if we cut the bandwidth to limit it to 4 gigabytes. This would cost us $7,917.80 per month for 220 hotspots.

- Sprint has a new grant available called the 1 Million Project, but it is only for high schools.

- Kajeet's pricing for the managed plan is $78,110 for the first year and $52,000 ongoing for the data. The company also offers a self-managed plan that would cost $59,648 for the first year and $26,373 for subsequent years. There are additional insurance options available for added costs.

- Beacon Mobile/Digital Wish's proposal includes packs of 10 mobile hot spots for a small administration fee of $108, as well as a $10 fee per month for each hotspot. For the 220 hotspots we need, this would result in an annual fee of $28,776. The company would also provide unlimited data for each hot spot.

My recommendation is to move forward with the Beacon Mobile/Digital Wish solution for the upcoming school year. We will assess and evaluate the efficacy and viability of this solution throughout the year, and determine in the spring if it should be renewed for the following year.

Rapid Pilot Program/Innovation Research & Development
During the first year of our current three-year technology plan, the output of the planning process included the establishment of a rapid pilot program. The purpose of the program is to promote innovation and encourage staff to take risks.

Staff members who participate in a pilot program must complete an evaluation tool within the first 30 to 60 days of its implementation. This is designed to us help us determine if we should consider expanding the program to other grade levels, schools, etc. As we continue to refine this process, I will look at ways we can incorporate stakeholder feedback into the review and evaluation activities.

In terms of innovation research and development, I think we can and should be doing more in this area because it will enable us to maximize our technology resources, builds on the capacity of our staff and students, and helps make learning fun and interesting for everyone involved. That is why I am proposing that we budget $20,000 for the upcoming school year for use in supporting innovative practices. The allocation of this money would be decided by a committee that would review proposals/applications submitted by our schools and staff members to determine whether they align with our technology plan and goals, and will help advance the district's vision.

Innovative Learning Spaces: Media Centers
One of the areas the Technology Advisory Committee explored this year was how we could transform learning spaces, more specifically our media centers, to better support innovative practices. We believe that through purposeful planning, creative designing and collaboration with our teacher librarians, we can have a positive and profound impact on the functionality of the space. We also believe that making some initial investments in this work next year will provide the individuals we will be asking to help guide our efforts (students, staff, parents/guardians, community members, etc.) with a better sense/understanding of what we mean by the modernization of learning spaces.

Professional Learning
During the 2017-18 school year, I will continue to work with the district's teaching and learning and special education departments, as well the Professional Learning Committee, to identify opportunities that will aid staff development. We will also seek to build upon the knowledge and skill sets of our administrators and teacher leaders in an effort to advance the work they are doing with staff in the area of leveraging technology to transform learning. In addition, we will strive to create a common understanding around what successful use of technology looks like in the classroom for both staff and students.

Student and Staff Feedback
Through the focus groups we conducted, we were able to identify both strengths and challenges related to our technology plan. One of the main challenges we discovered is that some of the tools cannot fully support what our students either want or need to do both in and out of the classroom. For example, there are problems loading Flash-based websites, and the Canvas app for the middle schools crashes on a regular basis. In addition, a number of our students said they are seeking a tool that has the adaptability of a tablet, but also will allow them to more easily/effectively type notes and/or papers.

With these issues in mind, we are recommending that we transition from iPads to Chromebooks at the middle schools. This transition, which many of our students and staff members have said they would welcome and support, would provide access to a touch active device with new functionalities a front facing camera.

At the elementary school level, we are recommending a refresh of the iPad Minis with full-size iPads. Our elementary students are asked to demonstrate their learning in a different way and use different tools/apps than our middle school students. At this time Apple has discontinued the most recent iPad Mini (4), without information if they will be adding more to their line. Also, as the technology continues to change Apple has provided a full-size iPad at a similar price of what the iPad mini was three and half years ago when we first rolled out 1:1 devices for all 3rd-8th grade students. This change will have an added benefit of students being able to take the Measures of Academic Progress (MAP) assessment on them and with a keyboard they could take the PARCC assessment as well.

These recommendations were reviewed/discussed by the Technology Advisory Committee, cabinet, teaching and learning department and special education

department to ensure that everyone is on the same page and in agreement with how the devices will be used next year to continue to support student learning and staff development.

Teaching and Learning
District 97 continues to create the environment to promote innovation, be flexible and support the students and staff with the instructional technology resources that have become ubiquitous in their everyday learning. Current reality, all of our students now, have equitable access to devices when they need them to support their learning. The Google Suite has transformed the way our students create content and collaborate with students and staff, they track and monitor their progress through the PowerSchool app daily, leverage Canvas learning management/organizational tool in the Middle Schools, use tools like Google Classroom and Seesaw to compile their work and communicate their learning to the teacher and their families, have access to accessibility features within all devices that are available whether through Apple accessibility or Google Chrome extensions (more in-depth in this area to come) and demonstrate their learning in a variety of ways using the tools they have.

As I have connected with Teaching & Learning through multiple conversations and within their roll on the Technology Advisory Team the following plans were provided directly from the department highlighting how the learning tools with support for the next couple years for students and staff.

- Leap Innovation pilots (starting now and over the next three years)
    - Cycles of innovation
    - Personalized programs to assist learning
- MTSS (starting 2017-2018)
    - Online intervention tools
        - AIMSWEB (online)
            - Progress Monitoring
            - Universal Screener
        - Branching Minds
            - Database for intervention plan
- Supplemental authentic reading tools (2017-2018)
    - i.e. myOn - digital books
- Science, Social Science (Humanities) & ELA (Language A) (2018-2019)
    - TechBook online resource with a review process over the next year
- Writing
    - Blogging in addition to writing

Special Education
In collaboration with Special Education department, they have provided the below regarding the integration of instructional technology for their program.

There are myriad technology tools that are used to support our students with disabilities. Most importantly, we've been able to realize savings by using apps that serve as augmentative communication supports that literally give students a voice. There are also specific apps that support writing (CoWriter), reading

comprehension (Learning Ally), auditory memory and discrimination (HearBuilder) as well as apps that support students with disabilities who require visual schedules (ChoiceWorks). These are just a few in the wide array of supports that are provided via these vehicles. I think one of the most important benefits of 1:1 devices, however, is the fact that they essentially make the need for these supports invisible. All children are able to access what they require to be successful without a stigma attached to the use of a device in a classroom where this is not common practice.

I will continue to collaborate with both departments to identify additional instructional technology tools and strategies to support the learning environment for our students and staff. This will include planning for professional learning opportunities.

2017-2018 – Budget Savings/Cuts

Based on our district's commitment to fiscal stewardship, and knowing that we are striving to balance our budgets and stretch the money from the recent referenda as much as possible, our department has identified a number of reductions and efficiencies that will help offset the cost of the expenditures we are recommending for next year. These reductions and efficiencies include:

- Cisco Phone System Upgrade – This is the final year of our three-year lease payment to Cisco that enabled us to replace our expensive and antiquated system with a new Voice Over IP system. **The total savings for next year will be $14,669**. For the two years after that, the district will save $83,700 per year.

- Printer System Upgrade – As mentioned on page two of this report, our streamlined printer solution will **save a total of $172,506.93** through the consolidation of contracts and the utilization of our in-house resources to print instructional materials (which was not an option prior to the implementation of this solution).

- PLTW device refresh savings – SalesForce, which is an enterprise software company, donates equipment to school districts on a regular basis. After working with the company to get added to its list of partner districts, we received 101 Macbook Pros that will enable us to refresh the devices we use in conjunction with our Project Lead the Way program at Brooks and Julian, while also **saving us $200,000**.

- Comcast – We expect to reduce the Internet/WAN budget by an estimated **$4,200** due to the sale of the warehouse, which will reduce the number of district locations requiring this service.

- Refresh of devices – Our current fleet of iPad Minis has value despite being at the end of their cycle. We have quotes from multiple companies to purchase all of the Mac items we are refreshing, which will offset much of the cost for the first year of our three-year lease. For next year, we are estimated to receive $324,250 in trade for our iPad minis and iPad 2s, which will lower the total cost of refreshing for our 4450 devices to $266,731. The cost for the following two years

of the refresh will be $494,981 per year. The recommendation is to enter a three-year lease, with the opportunity to keep the devices for another year or refresh them after the lease term has expired. At that time, we will calculate the cost associated with maintaining the devices or refreshing them.

One of the options we considered in light of the referenda was to postpone the refresh for a year. However, we discovered that doing so would actually cost the district more money. By refreshing now, we incur a total cost of ownership for the next three years of $1,256,691. If we waited a year, the cost would have been an estimated $1,351,300, which does not take into account the additional dollars we would likely have spent next year to address/replace failing devices. We also would have lost an estimated $176,000 in residual value on our current equipment by waiting a year.

2017-2018 Proposed $	2017-2018 Revenues	2017-2018 Savings (anticipated)	Net Expense
$739,757	$324,250	$391,375.93	$24,131.07

Appendix 1 – Instructional Technology Standards & 4C's Framework

- ISTE Student Standards – These are the set of instructional technology standards that will be used to measure student experiences via learning walks (which are informal, visits to classrooms that are focused on what the students are doing/participating in). These standards are always tied directly to the Instructional Framework document that is being created by the teaching and learning department.

- 4 C's (Collaboration, Communication, Creativity, Critical Thinking) – The 4C's are focused on the types of learning experiences students are engaged in that are helping them leverage these particular skills. We are looking for students to develop and practice their collaboration skills with their peers and teachers locally and globally. We want the students to communicate with one another via a variety of avenues regardless of their location (classroom, school, district, state, country or continent). Technology enables more global communication with one another, which helps students reach critical learning targets. Creativity is something that we want kids to be able to explore in their learning. We are looking for ways to better incorporate student creation into our practices and experiences to achieve this goal. Here is a link to a video explaining the 4C's.

Appendix 2 – Future planning projects
Oak Park Fiber (Potential Option for 2019-20)
We have continued to collaborate with the Village of Oak Park, districts 90 and 200, the Oak Park Public Library and the Park District of Oak Park on a possible Oak Park Fiber project. Based on conversations we have had, we will undertake the work with the Village first, as we both have the largest number of sites and our sites are in close proximity. The other organizations have expressed interest and are considering participation as the project progresses.

At this point, the Village and District 97 have met with three design consultants to assist in the planning of the joint project. As you have already seen we have collaborated on an Intergovernmental Agreement (IGA), services agreement and design RFP during the January 24, 2016 board report on Year 2 of the Technology Update and on April 26th during my brief eRate presentation and report. For this work, we will be leveraging the eRate process to identify savings. Our goal is to have a design consultant selected and begin working with them by the end of June. We are also looking to have an eRate 470 application (with RFP) out to vendors by September/October 2017, which will be for next eRate season. This will provide vendors with ample time to submit proposals for this project that will include a cost comparison of all forms of fiber (private fiber, which we are seeking for greater capacity, and leased fiber, which is what we currently have with Comcast). As part of the eRate process, we will select the best and most cost effective option for District 97. We will then wait for the approval of the funding via eRate before awarding a contract and beginning the work. If all goes well and the best option is constructing private fiber, the work would begin in spring 2018, with completion by June 2019.

I will continue to keep the board and superintendent updated on the status of this situation throughout the planning process. For your information, since this process is scheduled to begin in 2018, we will be seeking a two-year contract for Internet and WAN (this will also continue to be part of the eRate application).

Appendix 3 – Technology Fee/Expenditure/Repairs/Replacements
Student Technology Fee Collection/Expenditure/Repairs

I am currently compiling a list of the repair totals and costs spent in conjunction with the 1:1 iLearn devices over the past few years. Below you will see trend data for fees collected, as well as expenses for repairs and replacements (which includes devices, cables and cases).

- 2016-2017 - Fees collected - $56,823.78*
    - $116,167* – for repairs, replacement devices, added devices for large increase in enrollments, replacement cables
- 2015-2016 - Fees collected - $61,612.52
    - $105,407 - – for repairs, replacement devices, added devices for increase in enrollments, replacement cables
- 2014-2015 - Fees collected - $59,732
    - $54,375 – repairs and new devices for increased enrollments, (devices were still under warranty and all replacements were covered)
- *Final numbers to be compiled at the end of the year (June 30, 2017)

We are projecting similar numbers for next year. As part of our plan to switch devices at the middle schools, I am recommending that we participate in the Acer Advanced Service Provider program. As part of this program we have a streamlined program to get parts and will be able to complete the repairs internally. As part of this program for every repair the district is paid an estimated $20 to complete. In addition, we can leverage the year one manufacturer's warranty to cover accidental damage. We can also extend our warranty for the remaining life of the devices, which could be paid for via our technology fees if we so choose during the first year of ownership.

Appendix 4 – Supplement and support details for department practices and procedures

Data Privacy & Security

At the outset of our current three-year technology plan, we created processes for reviewing and vetting applications and software and their corresponding privacy policies to help preserve and protect student safety. We have continued to seek ways to stay on the forefront of best practices, which has included working with our attorneys and the CoSN organization to create a data services agreement that that is used in all contracts. We are also addressing this issue with vendors that we signed contracts with prior to the implementation of this agreement to help ensure that they fully comply with our current data privacy and security practices.

Device Filtering

Some of our families asked if there solutions we could implement to strengthen the filtering on student devices when they are being used outside the district. We researched the available options, and decided to partner with Securly to provide cloud filtering on our student devices when they are connected to the Internet outside of the district network. We also collaborated with District 90 on the negotiation with the company to help save money.

We now provide consistent and reliable filtering on all student devices regardless of where they are being used. With that said, some of the students told us during our recent building-level focus groups that the filtering was too restrictive at times, and was hindering their access to certain educational sites. Based on this feedback we will investigate how we can maintain a high level of security and protection on our devices, while also ensuring that students have access to content that will support their learning.

Data and Security Audit

We completed the data and security audit of the district in December 2016, and are currently using the findings from this audit to develop a three-year security plan. We expect to have a preliminary draft of the plan by the end of the school year.

BrightBytes

We will be administering this survey again in May 2017 to all faculty and staff, as well as students in grades three through eight. After we receive these results, I will provide a summary of the data. West40 has committed to supporting this tool, which means there is no cost to District 97.

eRate

This year, we will be leveraging category 1 items for eRate (we addressed larger category 2 items during the past two years). Per the information you received during your meeting on April 26, we are seeking to renew our Comcast WAN and Internet services through eRate for two years. We are electing to go with a shorter agreement so we can explore and plan for the Oak Park Fiber project with the Village. We have explored the option of tying on any future planning with the fire alarm, public announcement systems, but found there will not be any financial benefit to do them together.

Appendix 6 – Year 1 of Technology Plan Budget Impact – (2015-2016)

2015-2016 Proposed $	2015-2016 Savings	Actual Expense
$281,047	$60,000	$221,047

Comcast WAN/Internet transition – In the contract switch to Comcast from AT&T contract switch to Comcast from AT&T, we saved $60,000.

Proposed $	2017-2018 Savings (anticipated)	Actual Expense
2015-2016 - $281,047 2016-2017 - $406,755 2017-2018 - $739,757 (minus revenue $324,250)	$60,000 $289,175.93 $391,375.93	$221,047 $117,579.07 $24,131.07

Total Proposed - $1,427,559 **Total Revenue -** $324,250 **Total Saved** - $740,551.86
Actual Expense - $362,757.14