

San Diego Unified School District
i21 Now: Broadband Subcommittee
March 4, 2014
San Diego County Office of Education, Room 209

In attendance: Sally Bowen, Bruce Braciszweski, Michael Bruncker, Sharon Curtis, Joe Gabaldon, Mikel Hass, MyMy Lu, Tim McClain, Tad Parzen Jeremy Recktenwald, Matt Spathas (remote), Vance Tester

The meeting was called to order and those in attendance introduced themselves.

Bruce – This is a mid-point meeting to discuss key issues, considerations, options, future challenges, and to prepare for the final meeting which is scheduled for March 19. Agendas and slides are posted on the website, and Jeremy has a slideshow that summarizes and highlights our work. i21: Learning anytime, anyplace, and place.

Jeremy – The big thing to take away is what we've done with a small group of students with broadband connectivity. The overriding theme: Is it still the learning in a box or anywhere the students are? Definitions of broadband were reviewed. They have an older FCC broadband speed (4 mgs); today it is around 12 mgs per student. Looking at the district's current stats and fact that LTE is the technology, that long-term evolution is wireless. In most cases, 12 mgs per device can be met although it is not always the case. We have to work with providers to be sure we accomplish that. We are looking at blended approach. Students at some ages could exist with what is there. Everyone can learn in the way they see fit. Devices need to have all three connection options: mobile 4G inside device, typical wireless or Wi-Fi connection and a wired connection. We don't want to purchase a device without those 3 forms of connectivity. We need equity in access to connectivity. District invested a lot into the network and it was done well at schools. At home some model needs to be sufficient. Speed and affordability is always a factor as is parent engagement so they understand why kids need this connection. We need to develop considerations for key issues and we need to develop some kind of roadmap so if we see an overlap with another committee, we can reach consensus.

Matt – What came out of previous conversation was, where is the edge? Is it the district office, school, home or where the student is? The optimal answer is at the home or wherever the student is. The 1st broadband issue is, does this group or committee believe that broadband is part of feeding the mind if students cannot afford it? Should district ensure every student has access to broadband in the home? Is there consensus?

Jeremy – It should be provided to all students, so it doesn't separate the haves and have nots.

Matt – That is not how free lunches are done. Forget who for now, but should everyone have access to broadband? It is a key takeaway. It is essential?

Tad – There is general consensus that this is true in a perfect world. As a matter of equity, broadband is a critical component of 21st century education. If that is the premise, is it the school district's responsibility to provide it? Whose responsibility is it? We need to be careful how we word the statement; how we start it will determine how we end it. Is it part of the education delivery system? If it is the 21st century medium or platform used to deliver educational services, then the answer is clear: it is like textbooks. Is that what we are advocating?

Bruce – As a result of the Williams Act, textbooks in schools are counted to be sure they are complying with the law. Why should this be any different?

Tad – Are we assuming this is the educational platform? Is that a reality?

Jeremy – That is not a reality now. When we go to the Board it needs to be made essential.

The committee reached consensus on the fact that this is essential.

Matt – This is a fundamental medium for delivery and knowledge. If we are all synced on that, then we can figure out how to get there. We need to walk away believing with conviction that this is essential: that is a very powerful statement. Lots of districts are doing this, but in pieces. He is not aware of any district in the country

that has taken a comprehensive approach to this. This is daunting and part of the task, an unconstrained big vision of what can be.

Michael B – Shared an article from March 3 edition of the New York Times. Comcast indefinitely extended low-cost broadband access for poor families. Another article indicated the direction schools are headed, with classes going virtual and flipping classrooms, but if you can't get access, you cannot get there. We need to address sustainability of initiatives and access. You can't give it to them and then take it away.

Jeremy – We are crafting this statement and talking about initiatives coming out of a 15-year bond. If the funding goes away, we cannot take it away. It needs to become part of general fund not a bond issue. The District needs to look at how it is funded so it doesn't go away when the bond is done. This overlaps with the finance subcommittee. If we say it is essential, how do we fund it?

Vance – We are doing this the right way. Incorporating what teacher has to offer.

Michael – Some teachers do not want to commit to one curriculum.

Tad – Are teachers being trained this way?

Jeremy – How are we teaching the teachers to take advantage of this new technology? We have done a lot with PD; not saying we have done enough, but compared with others, we are doing well.

MyMy – Adoption piece needs to be on the families. If teachers are not ready, if parents don't want it, there is a bigger piece.

Matt – That is a very big piece – teachers and parents. They had parents who were afraid. In broadband space, they are talking about connectivity and touching on smartness. At e3, they empowered the students. There is not only a digital divide for students, but there is a generational divide which is just as big. The students embrace this more quickly than the older generation. Empowerment piece is to put it in the student's hand and not wait for the teachers. We need to wordsmith this statement so all can support it. He would like to hear the statement on the broadband piece.

MyMy – Broadband is no longer supplementary but a key piece in education. We need to think about how the district funds this as part of the general funds.

Matt – Broadband is no longer an option, but it is a necessity in preparing students for the 21st century.

Michael – It is essential for today's learning. Everything they are being asked to do in the classroom on a daily basis requires this for today's learning. Is there a way a way to make a statement where this is taking learning to another level? Who is doing this now? There is something going on and we are trying to get to that standard.

Vance – Ton of historical data that is positive.

Jeremy – There are some initiatives in other countries that will provide devices with connectivity for every child in their country.

Bruce – Project Red is research done through Dept. of Education to use technology to improve student outcomes. 2-5% of school districts are doing all of the elements. You can predict outcomes based on how many of the elements they are implementing with all pieces of the criteria.

Matt – South Korea is the bandwidth capital of the world, with 90% of households having 5G broadband. He has been there and has seen this. It is strategic in everything they do. In talking about connectivity in the homes, there are some municipal initiatives that have failed, and some citywide Wi-Fi initiatives are clumsy and ad driven. Part of the solution is Wi-Fi in public libraries. It is not unrealistic; think about large areas with free Wi-Fi for students. There are lots of ideas to explore. There could be blanket Wi-Fi areas, downtown, and some other areas. There are 17 clusters of schools in SDUSD, there could be a Wi-Fi hotspot in all those areas.

Michael – What are the colleges doing? Do they have Wi-Fi throughout their entire campuses?

Bruce – UCSD definitely does.

Matt –UCSD is connected with fiber but also wireless and remote campuses. Those ideas are fascinating. Once you aggregate, like the downtown public library, bandwidth is getting cheap. These are not unrealistic. Citywide might not be, but clusters of Wi-Fi initiatives are much in the realm. Some of hardwired carriers might have some thoughts on this. We have wireless technologies right here in SD. Satellites provide high speed cable/broadband. We've got the platform.

MyMy – Regarding the university Wi-Fi, you can presume college students have a connection. But we cannot assume that for K-12 students. If we were to provide a situation like UCSD, how do we provide it at home?

Jeremy – We know K-12 well; it makes logical sense that K-5 students (for the most part) go to school and go home. Their connectivity model is more static and tethered. We need to switch to a model of untethered experience once they get to 6th grade because they are more likely to do other activities off campus. It seems like a logical split. Also, at the mid-point meeting, Scott Barnett talked about a citywide broadband initiative. There needs to be some conversation there. He is open to suggestions. There are a lot of hurdles to pass through when cell towers go up neighborhoods. It would be very expensive for the district to become the service provider. There are plenty of companies that could provide connectivity (Verizon, AT&T Sprint). How do we make sure traffic gets trunked back to all of our students? There are technologies out there in a multi-vendor platform. This is a good look on how can we can do things. Do we need to put out an RFI?

Michael – He highly recommends we don't focus on kids above 5th grade. The kids are doing some amazing things. Parents can now get online to communicate with their instructors. Connectivity is not just for households where they get free or reduced lunch. For some parents it will be the 1st time they have done this.

Jeremy – From the ten schools in the LOGO pilot, parental engagement went up tenfold because of this.

Tim – How do you get connections into the apartment house? It has to hit a wireless router. This needs to be a part of discussion.

Jeremy – Broadband is not just dropped off into someone's home but student access is wireless.

MyMy – They have had kids come in and ask for routers.

Michael – It used to be a phone on a leash. They want to do it in their rooms. Sometimes computer station is in the kitchen or dining room. Who are the experts in this? What are the trends? Is that being discussed?

Vance – He thinks having broadband or wireless coverage might be too costly is accurate, but things are happening now and technologies are changing and it is demand is great. It has to be a combination of the needs of schools and students and it must work with businesses. If you want cellular instead of Wi-Fi, you need to pay for that. We are looking at what we can do with the chip so data can be used for education. This is one area that Qualcomm is working on. If a student is using it for education, they should have security, data bandwidth and access wherever they are. When they are not using it for educational purposes, then the parents should pay. Good news is that technology leaders and carriers are starting to work together toward that goal. LTE advanced, LTE broadcast, LTE band. Advanced is for complementing the Wi-Fi. Important thing is to look at when things will be available and lay out networks so they can be flexible. Some are already being rolled out LTE adv, broadcast, licensed, are all starting to go out, but timeline is within 3 years.

Matt – 4G is adequate for students now. New York has basically launched Wi-Fi in the Burroughs for free (not every single square inch but a lot of it.) Broadband is essential to educational delivery. We want it wired to the home but wireless inside the home is the minimum threshold. That is the standard. And we want some mobility so we can learn anywhere. This can take different flavors, not just a lily pad but connectivity everywhere.

Joe – It is not only speeds and over the top Wi-Fi support that gives mobility and access to people that currently do not have relationship with the carriers. It is an exciting time that we are all coming out with all these innovations.

Matt – As it relates to 4G, it is great connectivity, but it has some issues. It is more management intensive from the district perspective with limitations on data. Idea of a lily pad Wi-Fi, if it has the right wired connection, Wi-Fi would be preferred for getting a connection because it doesn't come with the limitations. Nobody is charging for a sip of water. We have done 6 million square feet of Wi-Fi in LA, Phoenix and SD, and bandwidth is cheap. If community centers were high speed Wi-Fi enabled and complemented with connectivity to the home, is that enough?

Michael – We are building a new YMCA. The schools' Wi-Fi doesn't cover the after-school program. They have to pay for the Wi-Fi coming into the school. Strategies are if this is live, it is being used today, but ultimately. The United Way Health Vision Council is looking at how education affects health. How is this going to improve education? We are all saying it does, and that will affect the health of the community. They need it across the board, not just in the pocket.

Tad – United Way has taken on a holistic approach and are starting to work through partnership with children. This is instrumental in all areas. Technology has a significant role to play cross sector as part of data sharing and real time interventions in a way we have never done before. What we are doing here is a cornerstone.

Matt – You have taken connectivity into the affordable housing component. Scott made the statement of digging up streets and building a fiber network was to a conversation. District could build lily pads of connectivity. Does this group think this is something the district should explore? SDUSD is putting a device in every student's hand; a device complemented with broadband is a powerful combination.

Jeremy – One of the items on our list is to finish the wireless networks. We need to get back to the theme of sustainability; this is essential to the district's operations. Bond is a one-time infrastructure expense. We envision that within five years the hardware and network will be obsolete. We have to shift our funding model and work with the existing infrastructure with providers; we put out 60k connections and it goes to 5G. If we purchase LTE now, where does the one-time money come in to upgrade the network we built. Providers have more money than the school district. We must manage those partnerships, always evaluating what is the best platform to provide for our students.

Joe – You have to build it and then you have to support it. That is a huge cost to ramp up.

Tim – Cindy Marten said if we must get rid of textbooks so you would have money to pour into this.

Jeremy – Textbooks don't change the textbooks every year, sometimes it's over several years, so the money savings is not as great as one thinks it is.

Matt – We should not get caught up with the money. Sustainability will come. There are other things to think about. We manage these devices remotely and hundreds of devices in each school. If you go wired to the home, do the math. At \$10 a month, we can easily operate at a high level of sustainability that will get you to the home wired or wireless. We can quantify that. We know that we will need to refresh perhaps every four years. If we want a lily pod approach in the 17 clusters, there are community centers. In each one, and we can reverse engineer this. We can design what is optimal. He doesn't think anything discussed is not doable.

Vance – When going from 4G to 5G, they ensure it is backward compatible.

Jeremy – We need to augment the statements: taking in community centers and providing public Wi-Fi. What are we looking to provide connectivity to every student's home? How do you penetrate and cover the geography we have? Even with a large infrastructure (3 providers) there are still some dead spots. His bigger question is, are we talking something much larger and bigger than that?

Mikel – What makes a country want to do this whole thing? We have time here. What makes the government want to embrace this? What was South Korea's reason?

Matt – It was government funded. In the US we built a federal freeway system. Private sector did this. We have some dead ends now. He is not sure we do this the same way. We've got what we've got. Smart cities are looking to bring in lots of pipe. Google carriers are trying to bring internet speed to the home. Other carriers will figure out if this is good or not. SD is in a great sandbox; we have more education and PhD's and yet we have a massive digital divide. There are cable or DSL connections. Who buys it and how pays for it? Nobody is in a better position to do that. Public Wi-Fi is not the answer. If we do a citywide initiative, it will have to be in the 4G, 5G or realm of satellite. He wasn't thinking public Wi-Fi, just in the community centers, but we could launch Wi-Fi with 17 lily pads that could blast Wi-Fi a few miles in each direction. He doesn't know what the radius is, but thinks we absolutely need to build on this concept, whether it be satellite or GSM. We've got one of the super computer centers at UCSD and it is phenomenal.

Tim – Are we talking lily pads just for the school or open networks?.

Matt – When you manage stuff it gets expensive. We don't manage public Wi-Fi's, it is fast and free. You have to host the liabilities. If you get a bunch of lawyers into the room, you won't get anywhere. For example the district blocks You Tube, so kids are going around it. That is what happened in LA Unified. He is hoping the work of this group can be the high level vision; Phase 2 should be now what does this look like. This is a huge step. He doesn't know of anyone in the country that is looking at this statement of this being essential.

Bruce – The benefits of teaching and learning: there are lots of ways to solve these problems.

Vance – Intelligence coexistence and hybrid.

MyMy – The luxury is we are built out in this city. We don't have to look if we can get this connection. It is a good thing. What is the combination that makes the most sense? We don't have to worry about the deployment piece.

Bruce – Jeremy put up statement that capitalized on what was discussed.

Jeremy – The statement captures the essence of what the statement should be. We also need to come up with a statement around the engagement of the community: a quality school in every neighborhood.

Bruce – We have Julie Evans on the task force and the district needs to piggyback on this. It is really a collective activity to get this done. Starting with good data is a useful thing.

The meeting was adjourned at 5:10 p.m.

Matt thanked everyone who he knows is busy, but this work is pivotal.

The next meeting is scheduled for March 10, at SDCOE in the learning labs next door.