

PLEASE STANDBY.

PLEASE STANDBY.

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>>: GOOD MORNING.

IF EVERYBODY COULD GRAB THEIR SEATS PLEASE, WE ARE ABOUT TO GET STARTED.

IF WE COULD HAVE EVERYBODY GRAB THEIR SEATS PLEASE.

GOOD MORNING.

WE ARE GOING TO GO AHEAD AND GET STARTED.

MY NAME IS PATRICK HALLEY I'M AN ASSOCIATE CHIEF IN THE WIRELINE BUREAU.

THANK YOU VERY MUCH, FOR BEING HERE IN PERSON AND ONLINE.

I'M GOING TO TURN IT OVER TO CHAIRMAN WHEELER IN A MOMENT.

A FEW THINGS BEFORE WE GET STARTED IN TERMS OF HOW THE DAY WILL GO AFTER WE HEAR FROM CHAIRMAN WHEELER AND COMMISSIONER PAI, WE WILL HAVE THE FIRST ROUND TABLE DISCUSSION ON THE BENEFITS OF BROADBAND FOR SCHOOLS AND LIBRARIES AND IT'S WHY WE ARE ALL HERE IN THE FIRST PLACE.

AFTER THAT DISCUSSION IS OVER I WILL INVITE THE REST OF THE SPEAKERS WILL BE PARTICIPATING IN THE ROUNDTABLE DISCUSSION FOR THE REST OF THE DAY.

BEFORE WE GET STARTED A QUICK ANNOUNCEMENT.

FOR THE FIRST PANEL AND A ROUNDTABLE DISCUSSION WE WILL TAKE QUESTIONS ONLINE AND YOU CAN SEND AN E-MAIL TO LIVEQUESTIONS@FCC.GOV AND ALSO HASHTAG AT E-RATE MONETIZATION.

I DON'T EVEN KNOW HOW TO TWEAK.

BUT THE CHAIRMAN'S OFFICE IS WORKING WITH ME ON THAT.

AND WE WILL POST THE VIDEO OF THE EVENT A COUPLE OF DAYS AFTER THIS IS DONE ON THE EVENT PAGE.

HOW ABOUT THAT.

AND A COUPLE OF THINGS, LUNCH AND COFFEE, IF ANYONE'S GOING TO LEAD THE ROOM TO GO OUT FOR LUNCH BECAUSE IT'S NOT BEEN PROVIDED OR TO GET COFFEE, BE ADVISED THAT IF YOU DO LEAVE THE MAIN COMMISSION ROOM YOU HAVE TO GO BACK THROUGH SECURITY SO PLEASE DO A ALLOW TIME FOR THAT.

WITH THAT I WILL DO INTRODUCTION OF ALL THE PANELISTS AFTER THE CHAIRMAN AND COMMISSIONER PAI SPEAK AND SO IT'S MY PLEASURE TO TURN IT OVER TO CHAIRMAN WHEELER.

CHAIRMAN.

>>: YOU CAN TWEET THAT

#INTERNET LOGON.

[LAUGHING]

THANK YOU, PATRICK AND FOR ALL THE LEADERSHIP YOU ARE PROVIDING IN THIS REALLY IMPORTANT ACTIVITY AT THE COMMISSION AND THANK YOU TO ALL OF YOU FOR BEING HERE BECAUSE YOU ARE THE LEADERS.

YOU ARE THE FOLKS, SITTING AROUND THIS TABLE TODAY WE ARE REALLY ANXIOUS TO HEAR ABOUT YOUR EXPERIENCES AND ABOUT YOUR THOUGHTS ON THIS ISSUE, WHICH IF YOU PULL AWAY EVERYTHING ELSE YOU DO COULD BE THE SINGLE MOST IMPORTANT ISSUE THAT THIS

AGENCY DEALS WITH.

BECAUSE, YOU KNOW, WE TALK A LOT ABOUT BROADBAND.

AND WHAT IS IMPORTANT IS NOT BROADBAND BUT WHAT BROADBAND ENABLES.

AND IF WE ARE NOT USING THAT ENABLEMENT TO ADDRESS THE ISSUE OF HOW WE EDUCATE OUR STUDENTS AND PROVIDE OPPORTUNITIES FOR OUR CITIZENS, SHAME ON US.

SO HOW WE DEAL WITH SCHOOLS AND LIBRARIES, HOW WE DEAL WITH THE E-RATE PROGRAM IS QUITE POSSIBLY THE MOST IMPORTANT THING THAT WE DO AT THIS AGENCY.

AND WE ARE DEDICATED TO MODERNIZING THE E-RATE PROGRAM.

I'M FOND OF SAYING IT'S AN 18-YEAR-OLD PROGRAM.

AT 18 IN AN EDUCATIONAL CONTEXT, PEOPLE ARE READY TO MOVE ON TO THEIR NATIONAL -- NEXT GROWTH OPPORTUNITY.

AND THAT IS WHERE WE ARE TODAY.

WHAT IS THE NEXT GROWTH OPPORTUNITY FOR E-RATE AND THAT'S WHAT WE NEED TO BE TALKING WITH YOU, AROUND THIS TABLE TODAY.

WE NEED TO BE WEANING OURSELVES OFF OF 20TH CENTURY IDEAS AND 20TH CENTURY CONCEPTS AND EMBRACING WHAT BROADBAND CAN DELIVER.

AND COMMISSIONER ROSENWORCEL WHO HAS BEEN A TREMENDOUS CHAMPION OF E-RATE FOR HER WHOLE CAREER KEEPS TALKING ABOUT THE THREE S. SPEED SIMPLICITY AND SMART SPENDING.

AND WE NEED TO AND I WOULD ADD A FOURTH TO THAT.

STRATEGIC THINKING BECAUSE WHAT IS THE STRATEGIC THINKING THAT WILL DIRECT THE E-RATE FOR THE NEXT 18-20 YEARS.

SO THE GOAL TODAY IS TO LEARN FROM YOU, THE SCHOOLS AND LIBRARY LEADERS IN THE FIELD.

YOU ARE HERE BECAUSE YOU ARE THE INNOVATORS.

YOU ARE HERE BECAUSE YOU CAN TELL US OF UNIQUE IDEAS AND UNIQUE APPROACHES OF THINGS THAT HAVE WORKED.

HOWEVER, YOU WILL NOT BE ABLE TO TOP THE PRESENTATION THAT I HAD YESTERDAY.

IN A MEETING WITH LIBRARY REPRESENTATIVES FROM AROUND THE COUNTRY, THE HEAD LIBRARIAN FROM THE STATE OF DELAWARE PULLS OUT A MAP OF THE STATE OF DELAWARE AND SHOWS ME THE RELATIONSHIP BETWEEN BROADBAND AND CHICKEN HOUSES.

I KID YOU NOT.

AND IT REALLY WAS A TERRIFIC TOOL TO MEASURE THINGS.

BECAUSE GUESS WHAT, CHICKEN HOUSES ARE IN RELATIVELY -- EXTREMELY RURAL AREAS. AND SO, HOW DO YOU MEET THE HIGH-SPEED CONDUCTIVITY NEEDS OF PEOPLE WHO LIVE AROUND CHICKEN HOUSES?

IT'S A VERY LEGITIMATE QUESTION AND IT'S AN IMPORTANT THING AND IT'S WHAT WE CAN LEARN FROM THESE KINDS OF DISCUSSIONS.

THERE ARE A SET OF PRINCIPLES ABOUT HOW YOU MAKE E-RATE A 21ST CENTURY PROGRAM.

IT IS ABOUT HIGH-SPEED BROADBAND.

HIGH-SPEED BROADBAND.

IT IS ABOUT ADMINISTRATIVE REFORM.

IT'S ABOUT TWO D. PERSON, NOT TO THE BUILDING, NOT EVEN TO THE CLASSROOM, TO THE PERSON.

IT'S ABOUT EFFECTIVE PROGRAM MANAGEMENT IN PURCHASING.
CONSORTIA, THAT CAN BUY TOGETHER AND LOWER COSTS.
THE TERMS FOR WHICH YOU ARE ALLOWED TO CONTRACT.
WHAT REASONABLE TARGETING IS FOR WHAT SOMETHING SHOULD COST IN AN URBAN
ENVIRONMENT SUBURBAN ENVIRONMENT, RURAL ENVIRONMENT.
IT IS ABOUT PROVIDING SUFFICIENT RESOURCES.
AND BECAUSE IT IS ABOUT STUDENTS, AND HOW THEY LEARN, AND PREPARE FOR
TOMORROW, IT IS BECAUSE IT'S ABOUT CITIZENS AND HOW THEY CAN INTERFACE WITH THEIR
GOVERNMENT, GET GED'S, APPLY FOR A VA BENEFITS, IT IS ALL ABOUT OUR FUTURE.
AND THAT IS WHY THIS IS PROBABLY THE MOST IMPORTANT THING THAT WE DEAL WITH HERE
AT THE COMMISSION.
SO WE ARE ALL GOING TO BE TALKING ABOUT POLICY TODAY AND WE ARE ANXIOUS TO HEAR
YOUR THOUGHTS ABOUT IMPLEMENTING THIS.
BUT I ALSO AM TERMINALLY SENSITIVE TO OUR MANAGEMENT RESPONSIBILITIES HERE AT
THE FCC AND OUR COLLEAGUES AT USAC WHO ADMINISTER THE PROGRAM.
WE HAVE DONE AN OVERHAUL OF THAT PROCESS THAT IS GOING TO CONTINUE TO BE FELT,
BUT LET ME INDICATE A COUPLE OF HIGHLIGHTS THAT HAVE HAPPENED IN THE LAST
HALF-DOZEN MONTHS.
WE HAVE PRIORITIZED APPLICATIONS SO THAT BROADBAND MOVES MORE QUICKLY AND
BROADBAND GETS THE FOCUS AND I WILL TELL YOU SOME NUMBERS ABOUT THAT IN A
SECOND.
WE NEED TO THANK JOHN WILKINS WHO I SAW A MOMENT AGO WHO WAS OVER HERE AND
RICHARD, RICHARD, ARE YOU HERE?
WHO IS THE ACTING CEO OF USAC.
HE IS NOT HERE.
FOR THEIR LEADERSHIP IN HELPING TO IMPROVE THE MANAGEMENT OF THIS PROCESS AND
LET ME GIVE YOU AN EXAMPLE OF WHAT THEY HAVE DONE.
THE FIRST FUNDING COMMITMENTS ARE NOW GOING OUT.
FOR HALF A BILLION DOLLARS.
THAT IS 4 TIMES THE FIRST FUNDING COMMITMENT WAYS LAST YEAR.
SO WE ARE MOVING MORE, FASTER, SO THAT YOU HAVE THE KNOWLEDGE AND INFORMATION
THAT YOU NEED, BUT HERE IS WHERE IT REALLY STARTS TO GET FUN.
THERE IS SIX TIMES MORE HIGH-SPEED BROADBAND FUNDING IN THIS FIRST COMMITMENT
THAN THERE WAS LAST YEAR.
COMMISSIONER PAI.
>>: AND THIS WILL ALLOW PEOPLE
LIKE YOU TO PUT INTO THINGS THAT
START AFFECTING PEOPLE'S LIVES
ON JULY 1.
A COUPLE OF EXAMPLES.
IS JEFF LETOURNEAU FROM MAINE?
DID I PRONOUNCE THAT RIGHT?
CONGRATULATIONS ASK WHAT YOU HAVE SOME CASH COMING YOUR WAY!
[LAUGHING]
SO I THINK THIS IS THE FIRST TIME THIS HAS EVER BEEN A LIVE IN PERSON ANNOUNCEMENT

OF A USAC GRANT.

ONE OF THE THINGS THAT JEFF AND THE STATE OF MAINE HAVE DONE IS A STATEWIDE CONSORTIUM OF 28 LIBRARIES AND A FIBER CONNECTION AMONGST THEM.

IF THERE'S EVER A CHALLENGING STATE, MAINE IS BIG, IT IS RURAL, THEY HAVE A GREAT DIGITAL ONE TO ONE INITIATIVE THAT YOU STARTED IN THE STATE AND WE WANT TO SUPPORT THAT.

SO YOUR GIGABIT CONDUCTIVITY ACROSS A VAST AREA OF 28 DIFFERENT LIBRARIES IS PART OF THIS FIRST ROUND.

CONGRATULATIONS.

SPEND IT WELL.

[APPLAUSE]

IN INDIANAPOLIS, THE WARREN TOWNSHIP METROPOLITAN SCHOOL DISTRICT.

I DON'T THINK WE HAVE ANYBODY FROM INDIANAPOLIS HERE BUT THE METROPOLITAN SCHOOL DISTRICT WHICH HAS A 71 PERCENT POVERTY RATE IS NONETHELESS, BUILT 2.5 GIGABIT ACCESS TO 21 SITES ACROSS THE COUNTY.

THAT WE ARE GOING TO SUPPORT.

THEY HAVE DEVELOPED COMPREHENSIVE PLANS, PERSONALIZED LEARNING INCLUDING HOW DO YOU HARNESS TECHNOLOGY TO DO THAT.

2.5 GIG ACROSS 21 STATES WHERE THERE IS A 71 PERCENT POVERTY RATE.

THAT IS USING TECHNOLOGY TO MAKE A DIFFERENCE AND THAT IS THE KIND OF THING THAT THE E-RATE PROGRAM OUGHT TO BE DOING.

THOSE ARE JUST TWO THINGS.

AGAIN WE'VE GOT TO THANK THE LEADERSHIP OF USAC, MEL ARE YOU HERE?

THERE IS MEL.

OF COURSE.

AND YOU KNOW FOR EVERY BAT MAN THERE IS A ROBIN.

[LAUGHING]

AND MEL IS THE VICE PRESIDENT OF SCHOOLS AND LIBRARIES FOR USAC WHO HAS BEEN DRIVING THIS ALONG.

BUT CONGRATULATIONS FOR GETTING THESE OUT FASTER THAN THEY EVER HAVE BEEN DONE AND FOR FOCUSING THEM ON BROADBAND.

WE WILL MAKE THIS YEAR THANKS TO THEM AND RICHARD AND JOHN WE WILL MAKE THIS YEAR THE FASTEST MOST EFFICIENT APPLICATION REVIEW PROCESS IN E-RATE HISTORY.

YOU HAVE MY WORD ON THAT.

AND WE WILL KEEP IMPROVING.

SO THANK YOU TO ALL OF YOU FOR YOUR LEADERSHIP.

THANK YOU TO USAC AN FCC STAFF, CHAS EVERLY ESPECIALLY, THANK YOU FOR WHAT YOU HAVE DONE TO SET UP TODAY.

AND IT IS NOW MY PLEASURE AND PRIVILEGE TO TURN THE PODIUM OVER TO MY COLLEAGUE COMMISSIONER PAI.

[APPLAUSE]

>>: THANK YOU BATMAN.

MY NAME IS ROBIN.

IT IS GREAT TO BE HERE TODAY.

BUT ON A MORE SERIOUS NOTE I ASSOCIATE MYSELF WITH EVERYTHING THE CHAIRMAN SAID.

AND I ALSO WANT TO LET YOU KNOW ON TOP OF WHAT HE SAID THAT WHAT YOU DO HERE TODAY MATTERS.

WHAT WE DO ON E-RATE IN THE NEAR FUTURE MATTERS.

AND THE REASON I KNOW THAT IS AMONG OTHER REASONS A VISIT I MADE LAST WEEK TO THE SAN FERNANDO INSTITUTE OF APPLIED MEDIA IN LOS ANGELES.

THIS IS A SCHOOL, A MIDDLE SCHOOL THAT HAS BEEN AROUND FOR ABOUT 30 OR SO YEARS AND WHILE I WAS THERE I HAD A CHANCE TO VISIT MR. PENA'S EIGHTH-GRADE CLASS.

AND MR. PENA WAS TALKING ABOUT THE CONCEPT OF TESSELLATION.

A WORD I HAD NEVER HEARD OF.

AND WHEN I WAS IN SCHOOL AND THE CUTTING EDGE TECHNOLOGY WAS THE NUMBER TWO PENCIL HE WOULD HAVE BEEN SITTING AT THE FRONT OF THE CLASSROOM, I WOULD BE LOOKING AT A TEXTBOOK AND HE WOULD JUST BE LECTURING.

AND HERE IS WHAT TESSELLATION IS.

AND TO LET YOU KNOW IT'S A RECURRING SERIES OF GEOMETRIC PATTERNS OF TRIANGLES UPON TRIANGLES OR QUADRILATERAL UPON QUADRILATERAL'S.

BUT THIS CLASSROOM IS JUST DIFFERENT.

AND IT WAS DIFFERENT BECAUSE EVERY STUDENT HAD AN IPAD.

THEY HAD A ONE TO ONE PROGRAM THAT WAS PIONEERED AND IT ESTABLISHED HIGH-SPEED WI-FI CONNECTION IN EVERY SINGLE CLASSROOM THROUGHOUT THE CAMPUS.

AND WHAT THAT ENABLED THE STUDENTS TO DO AND WHAT IT ENABLED MR. PENA TO DO WAS EXPLORE THE CONCEPT OF TESSELLATION IN A WAY THAT I WAS ENVIOUS ABOUT BECAUSE IT WAS SO INTERACTIVE.

INSTEAD OF TELLING THEM, HE SAID PUT THE WORD TESSELLATION INTO GOOGLE IMAGES AND TELL ME WHAT YOU SEE.

SO I LOOKED OVER A COUPLE OF STUDENT SHOULDERS AS THEY PULLED UP THE IMAGES AND THEY STARTED DESCRIBING IN THEIR OWN WORDS WHAT IT WAS THEY SAW.

AND EVENTUALLY THEY CAME UP WITH THE CONCEPT AND BECAUSE WHAT THEY WERE STUDYING THAT DAY WAS ACTUALLY ISLAMIC ART, HE ASKED THEM TO CONNECT THAT CONCEPT OF TESSELLATION TO WHY IT WAS THAT MOST WOULD PREFER THE CONCEPT OF TESSELLATION IN ALL OF THEIR ARCHITECTURE AND ART.

SO THE STUDENTS THEMSELVES ANSWER THE QUESTIONS BECAUSE TESSELLATION IS INFINITE JUST AS MOST BELIEVE THAT GOD IS INFINITE.

AND THAT WAS THE KIND OF LEARNING THAT REALLY DOES CHANGE THE WAY STUDENTS THINK.

AND IT REALLY -- LITERALLY CHANGES THE WAY THEY THINK INSTEAD OF PASSIVELY OBTAINING INFORMATION, THEY WERE THE ONES RE-ORIENTATING THEIR GRADES TO SEE THEM AROUND FIRING AND THAT WAS MADE POSSIBLE BECAUSE OF THE DEVICE AND A BROADBAND CONNECTION.

AND THAT REALLY BROUGHT IT HOME TO ME.

WHAT WE DO HERE REALLY MATTERS AS I SAID AT THE OUTSET.

AND THAT'S COMES TO THE WORK WE ARE GOING TO DO ON E-RATE.

BECAUSE I CAN TELL YOU THAT WHEN I MET WITH SOME OF THE PRINCIPLES AND THE PRINCIPLE AND SOME OF THE TEACHERS AND THE PARENTS AFTER THAT MEETING, THEY SAID WHAT OUR SCHOOL IS DOING IS GREAT BUT THERE IS SO MUCH MORE WE CAN DO AND WHAT ARE YOU GOING TO DO TO HELP US.

IT'S A DAUNTING CHALLENGE, NO DOUBT ABOUT IT ESPECIALLY SINCE THE PROGRAM HAS NOT BEEN UPDATED IN 18 YEARS.

BUT WITH CHAIRMAN WHEELERS LEADERSHIP AND IN COOPERATION WITH ALL OF YOU I'M CONFIDENT WE ARE GOING TO ACHIEVE REAL REFORM THIS YEAR.

THAT'S WHAT PARENTS EXPECT.

THEY EXPECT THEIR CHILDREN TO BE PREPARED FOR THE WORLD OF TOMORROW NOT THE CLASSROOMS OF YESTERDAY AND THERE'S ALSO AN OPPORTUNITY HERE IN TERMS OF FUNDING.

OVER THE NEXT FIVE YEARS THE E-RATE PROGRAM WILL COLLECT AND DISTRIBUTE OVER \$12 BILLION TO FUND INFORMATION TECHNOLOGY AND OUR NATION'S SCHOOLS AND LIBRARIES.

THAT IS REAL MONEY.

\$3 BILLION MORE THAN WE COMMITTED TO THE CONNECT AMERICA FUND LAST MONTH.

THAT MEANS WE HAVE A REAL CHANCE TO MAKE A DIFFERENCE.

IN THE SAN FERNANDO VALLEY AND THROUGHOUT THE SCHOOLS OF THIS COUNTRY.

IN MY VIEW AND THE VIEW OF MANY OF YOU THE FCC NEEDS TO SEIZE THIS OPPORTUNITY FOR THE KIDS AT THE 21ST CENTURY.

WE SHOULD NOT JUST SETTLE FOR THE EXISTING SYSTEM AND TINKER AROUND THE EDGES. WE NEED REAL REFORM.

IN MY OPINION WE NEED A STUDENT CENTERED E-RATE PROGRAM THAT FOCUSES ON THE NEEDS OF CHILDREN.

WE NEED A PROGRAM THAT ESTABLISHES SIMPLICITY AND THAT REPLACES TODAY'S COMPLEXITY WITH A SYSTEM THAT'S EASY FOR PEOPLE TO NAVIGATE AND CUTS THROUGH THE RED TAPE AND MAKES IT EASIER FOR SCHOOLS AND LIBRARIES TO APPLY.

WE NEED A PROGRAM THAT MORE FAIRLY DISTRIBUTE E-RATE FUNDS AND PUTS A SMALL RURAL SCHOOLS AND LIBRARIES, SCHOOLS NEAR ALL THOSE CHICKEN COOPS ON AN EQUAL FOOTING WITH THEIR LARGER AND MORE URBAN BROTHER IN.

WE NEED A PROGRAM THAT PROMOTES MORE CAREFUL SPEND IT WITH ADDITIONAL TRANSPARENCY SO PARENTS, EDUCATORS, JOURNALISTS, FCC OFFICIALS, ANYBODY CAN SEE HOW E-RATE FUNDS ARE BEING SPENT.

WHETHER YOU CALL THESE REFORMS CONNECT ED INITIATIVES OR IN E-RATE MODERNIZATION OR 2.0, THE NAME DOES NOT MATTER SO MUCH AS THE GOAL AND THE GOAL AS THE CHAIRMAN SAID IS MODERNIZING OUR SCHOOLS TO FIT THE NEEDS OF THE 21ST CENTURY.

THIS IS A GOAL I BELIEVE IS SHARED BY EVERYBODY.

BY EVERYONE WHO WORKS AT A SCHOOL OR A LIBRARY.

BY VENDORS OF EQUIPMENT AND SERVICE PROVIDERS, BY DEMOCRATS AND REPUBLICANS, BY COMMISSIONERS AND STAFF.

THE PRIMARY QUESTION AT THIS POINT IS HOW DO WE ACHIEVE THAT GOAL.

AND THAT'S WHERE YOU COME IN.

THANK YOU VERY MUCH, FOR ATTENDING TODAY BECAUSE I THINK TODAY'S WORKSHOP CAN LIGHT A PATH FORWARD FOR THE COMMISSION.

WE HAVE A SUBSTANTIAL RECORD OF ALMOST 2500 COMMENTS TELLING US WE NEED TO UPDATE THIS PROGRAM AFTER ALMOST 20 YEARS.

MY HOPE IS YOU WILL BUILD ON THAT RECORD AND HELP US MAKE SURE THAT THE REFORMS

WE ADOPT TODAY AND IN THE FUTURE WILL BRING THE FULL PROMISE OF DIGITAL OPPORTUNITY TO AMERICA'S CHILDREN.

IF WE DO THAT, WE CAN ENSURE THAT EVERY CHILD IN THIS COUNTRY HAS THE OPPORTUNITY OF THE CHILDREN IS -- AND MR. PENA'S CLASSROOM HAVE.

A CHANCE TO LEARN IN A WAY THAT'S NEVER BEEN SEEN BEFORE AND THAT'S A BIG CHALLENGE AND I'M CONFIDENT WITH YOUR ASSISTANCE WE ARE GOING TO MEDIA.

THANK YOU VERY MUCH AND I LOOK FORWARD TO LEARNING FROM ALL OF YOU IN THE FUTURE.

[APPLAUSE]

>>: THANK YOU, COMMISSIONER

PAI.

IF WE COULD HAVE THE PANELISTS PLEASE BE SEATED AS WELL AS FCC STAFF PARTICIPATING.

SO FOR THE FIRST PANEL TO PROVIDE SOME INTRODUCTIONS WE ARE DELIGHTED TO HAVE DR. DALLAS DANCE WHO'S THE SUPERINTENDENT FOR THE PUBLIC SCHOOLS.

IN BALTIMORE COUNTY.

CORINNE HILL, AHNIWAKE ROSE, AND DR. ERIC WILLIAMS SUPERINTENDENT OF LOUDOUN COUNTY VIRGINIA PUBLIC SCHOOLS AND I WILL INTRODUCE ALL THE FCC STAFF ALTHOUGH THEY ARE NOT ALL SEATED YET WHO WILL BE PARTICIPATING TODAY.

WE HAVE A CROSS-SECTION OF FOLKS WHO'VE BEEN INVOLVED IN THE E-RATE MODERNIZATION EFFORT AND THERE'S LOTS BUT THE ONES THAT WILL BE HERE TODAY ARE MICHAEL STEFFEN DIRECTOR OF DIGITAL LEARNING FOR THE COMMISSION, WE SOHO IN THE DEPUTY DIVISION CHIEF FOR THE AXIS POLICY DIVISION OF THE WIRELINE EURO WHO LEADS THE E-RATE TEAM, JONATHAN CHAMBERS THE OFFICE OF STRATEGIC PLANNING AND CHAS EBERLY, MARK WALKER AND REGINA BROWN WHO ARE ATTORNEY ADVISORS ON THE E-RATE TEAM WORKING HARD ON THE MODERNIZATION WRECK -- EFFORTS.

I BELIEVE THERE'S A LOSS IPHONE.

BUT THERE'S ONE AT THE SECURITY DESK SO IF YOU ARE MISSING YOUR PHONE GO TO THE SECURITY DESK.

A REMINDER, QUESTIONS CAN BE SENT TO HASHAG E-RATE MODERNIZATION AND ALSO LIVEQUESTIONS@FCC.GOV.

AND ALSO FOR THOSE IN THE ROOM WHO WANT TO ASK A QUESTION WE WANT TO DO OUR BEST TO ACCOMMODATE THOSE TO THE BEST OF OUR ABILITY TIME PERMITTING AND THERE IS A MICROPHONE IN THE HALL IN THE MIDDLE THERE WHERE FOLKS CAN STEP UP AND ASK A QUESTION INTO THE MICROPHONE.

SO WITH THAT, I WILL TURN IT OVER TO RICHARD CULATTA WHO'S THE DIRECTOR OF OFFICE OF EDUCATION TECHNOLOGY FOR THE U.S. DEPARTMENT OF EDUCATION WHO'S GOING TO KICK OFF THE FIRST PANEL ALONG WITH COMMISSIONER ROSENWORCEL WHO WILL BE HERE ANY SECOND NOW.

SO RICHARD, I WILL TURN IT OVER TO YOU AND THEN MAYBE OVER TO THE COMMISSIONER AND START THE PANEL.

THANK YOU.

>>: THANK YOU VERY MUCH.

WELCOME EVERYONE, GOOD MORNING.

WE WILL WORK ON THAT.

THANK YOU FOR THE OPPORTUNITY TO BE HERE WITH YOU.

THANK YOU FOR COMING TO BE PART OF THIS.

I WILL SORT OF TELL JOKES UNTIL COMMISSIONER ROSENWORCEL TURNS UP AND THEN WE WILL TURN IT OVER TO HER.

IN THE MEANTIME I WOULD LIKE TO SAY A FEW QUICK REMARKS TO KICK THIS OFF AND THEN I WILL KEEP MY COMMENTS SHORT BECAUSE WE HAVE A PANEL OF ROCK STARS HERE AND I WANT TO MAKE SURE WE GET TO HEAR FROM THEM.

THE FIRST THING I WOULD SAY OFF THE TOP IS HUGE AND VERY SINCERE THANKS TO ALL THE FOLKS AT THE FCC WHO I AM NOT SURE IF THEY'VE EVEN BEEN SLEEPING TO PULL OUT THESE GREAT CHANGES WE ARE STARTING TO SEE TO THE E-RATE PROGRAM SO COULD WE JUST TAKE A SECOND TO RECOGNIZE THESE FOLKS.

AND OTHERS.

[APPLAUSE]

AND WHEN YOU HEAR THE CHAIRMAN, CHAIRMAN WHEELER IN TALKING ABOUT HOW SERIOUS HE IS ABOUT MAKING THIS ONE OF THE MOST IMPORTANT THINGS THE FCC WILL DO WITH WE HUMBLY AGREE WITH, IT'S ALSO IMPORTANT TO REALIZE HE'S NOT JUST SAYING THAT.

WHEN YOU TALK ABOUT SIX TIMES THE AMOUNT OF BROADBAND THAT HAS BEEN APPROVED AS OPPOSED TO WHERE WE WERE LAST YEAR.

THAT IS NOT RHETORIC THERE'S ACTUAL ACTION TAKING PLACE AND FRANKLY, IT'S A BREATH OF FRESH AIR FROM A NUMBER OF AREAS WHERE WE HAVE NOT SEEN AS MUCH PROGRESS AND TRACTION AS WE'VE SEEN HERE SO THANK YOU TO EVERYBODY THAT'S MADE THAT HAPPEN.

THE OTHER PIECE THAT I WILL SAY IS -- I SHOULD MAKE A COMMENT HERE AND THAT IS AS EXCITED AS WE ARE AND AS IMPORTANT AS IT IS TO MAKE SURE WE HAVE CLEAR GOALS FOR WHAT WE'RE DOING TO CONNECT SCHOOLS AND I KNOW THE FORKS IN WARREN TOWNSHIP THEY ARE NOT HERE AND I KNOW THE STRUGGLES THEY'VE BEEN MAKING AND I'VE SEEN HOW HARD THEY ARE WORKING TO TRANSITION AND TRANSFORM LEARNING AND I CAN'T EVEN BEGIN TO TELL YOU HOW MUCH THIS SUPPORT WILL HELP THEM DO WHAT THEY ARE TRYING TO DO.

AS WE LOOK AT THAT, HELLO.

AS WE LOOK AT THAT I WOULD SORT OF MAKE A COUPLE OF QUICK COMMENTS AND I'LL MAKE THEM EVEN QUICKER NOW THAT THIS PERSON TO MY LEFT JUST SHOWED UP.

I WOULD SIMPLY SAY WE NEED TO REMEMBER THIS IS NOT ABOUT CABLES AND WIRES.

THE BROADBAND AND THE CONDUCTIVITY IS HUGE BUT IT'S NOT ENOUGH.

SO AS WE TALK ABOUT THIS WE NEED TO MAKE SURE WE ARE FINANCING THE SENTENCE

AND BY THAT I MEAN WE NEED TO MAKE SURE WE GET HIGH SPEED BROADBAND TO ALL

SCHOOLS SO THAT AND WE NEED TO FINISH THAT SENTENCE AND WE NEED TO ALWAYS

FINISH THAT BECAUSE IF WE DON'T FINISH IT AND IT'S NOT CLEAR WHY WE ARE DOING IT WE

CAN GET LOST IN SOME PIECES THAT MAKE IT HARD TO BRING ABOUT THE LARGER CHANGE

THAT WE ARE LOOKING FOR.

AND WHAT WE NEED TO DO IS MAKE SURE THAT KID IN NORTH CAROLINA HAS ACCESS TO THE

BEST DIGITAL LEARNING MATERIALS THAT THE TEACHER IN NEW MEXICO, I WAS THERE LAST

YEAR WITH SECRETARY DUNCAN AND I WILL SEE HOW MANY PEOPLE GOOGLE MAP TO SEE

WHERE THAT IS THAT THE TEACHER HAS ACCESS TO COLLABORATE WITH OTHER TEACHERS

THEY WOULD NOT SEE ON A REGULAR BASIS TO IMPROVE THEIR PRACTICE SO THIS IS

REALLY ABOUT TRANSFORMATION AND THIS IS A BIGGER PROBLEM THAN ANY OF US CAN TACKLE ON OUR OWN.

IT'S A GREAT OPPORTUNITY AND I'VE NEVER SEEN SO MUCH ENERGY AND EXCITEMENT AROUND TRANSFORMING LEARNING ARE IN MY WHOLE CAREER BUT WE CAN'T THINK THIS IS SOMETHING ANYONE ELSE WOULD SOLVE.

WE CAN REALLY START TO SEE SOME IMPORTANT CHANGES.

DAY, BY THEMSELVES WILL NOT PULL THIS OFF SO WE NEED TO BE SUPPORTING AND PARTICIPATING IN INVOLVED IN THE FCC'S PROCESS, BUT WE ALSO NEED TO BE LOOKING AT HOW THROUGH THE EDUCATORS IN THIS ROOM, WHAT IS THE PLAN AND HOW ARE YOU WORKING TO ENABLE THESE NEW SUPPORTS WHEN YOU GET THEM AND WE WILL HEAR SOME EXAMPLES OF THIS RIGHT NOW.

WE NEED TO LOOK AT OTHER FEDERAL AGENCIES AND THE DEPARTMENT OF EDUCATION IS SERIOUS AND WE WILL BRING SUPERINTENDENTS IN AND SAY WHAT IS YOUR PLAN TO HELP IMPLEMENT THE NEW TECHNOLOGY AND INFRASTRUCTURE YOU WILL BE GETTING IN PLACE AND THERE WILL BE GUIDES AND OTHER RESOURCES COMING OUT TO SUPPORT SUPERINTENDENTS AND DISTRICTS IN MAKING THESE DECISIONS AND WE NEED TO HAVE THE PRIVATE SECTOR KEEP THEIR HEAD IN THE GAME AND WE'VE SEEN THAT.

I THINK \$1.25 BILLION AT THIS POINT TO HELP MAKE SURE WE TRANSITION TO EFFECTIVE DIGITAL LEARNING IN SCHOOLS.

THIS IS A GREAT TIME, BUT WE NEED TO HAVE EVERYBODY ON.

WE NEED TO HAVE EVERYBODY IN SO WE DON'T COPYRIGHT INFRINGE.

WE NEED TO HAVE EVERYONE AT THE TABLE SO LET ME END BY A QUICK STORY, IF YOU WILL FORGIVE ME.

I JUST CAME BACK FROM VISITING SOME SCHOOLS IN RHODE ISLAND AND I WAS OUT LOOKING AROUND AT WHAT THEY WERE DOING AND HAD A CHANCE TO LOOK AND I VISITED THREE SCHOOLS AND IN EVERY ONE OF THE SCHOOLS, THEY WERE SCHOOLS THAT HAVE MADE AMAZING TURNAROUND STORIES.

I WON'T TAKE THE TIME TO TAKE YOU THROUGH WHAT THEY DID BUT I DO WANT TO TALK ABOUT ONE PARTICULAR STUDENT I HAD A CHANCE TO MEET WITH AND THIS WAS A STUDENT WHO HAD DEALT WITH SOME SEVERE CHALLENGES IN HER LIFE.

SHE HAD SOME MEDICAL ISSUES AND TO MAKE A LONG STORY SHORT SHE HAD FALLEN VERY FAR BEHIND IN SCHOOL.

AND SAT THERE EXPLAINING TO ME, AND I WISH YOU COULD SEE HER EXPRESSION AND SHE SAID I DIDN'T KNOW I WOULD HAVE A CHANCE TO GRADUATE AND CATCH UP AND IT SEEMED SO HOPES.

SHE WAS AT A SCHOOL THAT JUST MADE A VERY IMPRESSIVE TRANSITION TO THIS SUPERCHARGING LEARNING THROUGH TECHNOLOGY THAT GAVE HER THE OPPORTUNITY TO TAKE A VARIETY OF LEARNING EXPERIENCES USING THE TECHNOLOGY ONLINE COLLABORATING WITH STUDENTS AND TEACHERS NOT EVEN IN THE CLASS AND SHE WAS ABLE TO MOVE FORWARD FASTER BY WORKING DAY AND NIGHT AND THROUGH HER VOCATION -- VACATION AND SHE WAS ABLE TO MARK AHEAD TO WHERE SHE WAS FOR HER GRADE LEVEL AND THAT HAPPENS BECAUSE THERE'S INFRASTRUCTURE IN PLACE AND THAT AT THE END OF THE DAY IS WHAT THIS IS ALL ABOUT SO HELP US AS WE HAVE THESE CONVERSATIONS MAKE SURE WE ARE TALKING ABOUT HOW WE ARE TRANSITIONING IN TRANSFORMING LEARNING THROUGH THE ENABLING OF THE TECHNOLOGY.

WITH THAT I WOULD LIKE TO TURN THE TIME OVER TO A GREAT FRIEND OF MINE TO MY LEFT AND COMMISSIONER ROSENWORCEL HAS BEEN CLEARLY OUTSPOKEN ON THIS ISSUE AND WE NEED TO BE HONEST ABOUT THE FACT WE WOULD NOT BE SITTING IN THIS ROOM TODAY IF IT WERE NOT FOR HER TIRELESS LEADERSHIP AND ONE POINT I WOULD LIKE TO MAKE BEFORE I HAND THIS OVER TO HER IS I'VE EVER HEARD ABOUT HER TALK ABOUT E-RATE AND I'VE HEARD HER TALK ABOUT IT A LOT, I'VE NEVER HEARD HER TALK ABOUT IT WITHOUT IN THE SAME SENTENCE SAYING TEACHERS AND EDUCATORS NEED TO GET INVOLVED IN THE PROCESS OF THEIR VOICE IS INCLUDED IN ALL OF WHAT HAPPENS HERE AND THAT LEADERSHIP IS WHAT GIVES ME THE HOPE THIS IS REALLY GOING TO TRANSFORM LEARNING. SO COMMISSIONER ROSENWORCEL.

>>: THANK YOU.

RICHARD THANK YOU AND MOURN PARTLY TO EVERYONE WHO IS HERE I WANTED TO SIT DOWN AND SIT WITH YOU THROUGH THIS SESSION BECAUSE I WANT TO HEAR WITH YOU TODAY.

IT'S A TREAT TO BE HERE WITH RICHARD.

IF YOU DON'T KNOW HIM YOU SHOULD.

HE'S AN INCREDIBLE FORCE AND HIS GOOD WORK CAN BE FELT ACROSS ALL THE COUNTRY. I DON'T KNOW IF YOU KNOW THIS BUT IT IS TEACHER APPRECIATION WEEK SO HOW APPROPRIATE WE ARE HOLDING THIS SESSION TODAY.

THERE IS NOTHING IN EDUCATION AS IMPORTANT AND AS POWERFUL AS A GOOD TEACHER. I THINK WE ALL KNOW THAT FROM OUR OWN EXPERIENCES AND I CAN SAY I KNOW THAT FROM BEING A PARENT.

THE QUESTION FOR MODERN EDUCATION IS WHAT TOOLS DO WE MAKE AVAILABLE TO THE TEACHERS.

IN MY DAY IT WAS LIMITED TO SOME BULKY TEXTBOOKS AND IDEAS SHARED ON THE BLACKBOARD AND IF WE WANTED TO DISTRIBUTE THEM MORE BROADLY THE CRANK OF A ¶ GRAFT MACHINE.

AND MULTIMEDIA, THAT WAS SOME GRAINY FILM STRIPS, REALLY LOUSY PRODUCTION VALUE. AND MAYBE THAT WAS JUST NEW ENGLAND WHERE I GROW.

WE LIKE OUR HISTORY.

AND IF YOU WENT TO THE LIBRARY AND YOU DECIDED TO DO SOME RESEARCH YOU WERE INTRODUCED TO THE INCREDIBLY BULKY MICROFICHE MACHINE.

WHEN I LOOK BACK ON THOSE EXPERIENCES THERE'S REALLY NO EXPERIENCE THEY SHOULD DEFINE THE EDUCATIONAL OR LIBRARY ENVIRONMENT.

THERE'S NO REASON WE SHOULD BE LIMITED TO THOSE SOURCES IN THOSE WAYS OF EXPRESSING AND CONVEYING KNOWLEDGE.

ALL IT TAKES IS A LITTLE BIT OF COURAGE TO TAKE THE E-RATE PROGRAM, REBOOT AND REINVIGORATE IT AND WE CAN PUSH HIGH-SPEED BANDWIDTH INTO ALL OF OUR SCHOOLS AND ALL OF OUR CLASSROOMS AND TO ALL OF OUR LIBRARIES.

AND WITH THAT, WE CAN REALLY REINVIGORATE LEARNING IN THIS COUNTRY AT NATIONAL SCALE AND IT WON'T MATTER WHERE THAT CHILD LIVES, WHERE THEY GO TO SCHOOL, WHO THEIR PARENTS ARE, THEY WILL HAVE ACCESS TO THE BEST DIGITAL AGE EDUCATION.

IT'S A POWERFUL THING THEY CAN STIMULATE WITH THIS PROGRAM THE AGENCY RUNS AND I HAVE SPENT THE BETTER PART OF THIS YEAR VISITING SCHOOLS AND CLASSROOMS AND EVERYWHERE AND ACROSS THE BOARD WHAT I SEE IN THOSE CLASSROOMS AND THE

LIBRARIES IN THOSE COMMUNITIES IS RESPECT FOR THE GREAT POWER OF WHAT E-RATE HAS DONE TO CONNECT OUR COUNTRY BUT I ALSO FEEL EXCITEMENT FOR WHAT MORE IT CAN DO BECAUSE RIGHT NOW IN ORDER TO REFORM THIS PROGRAM I THINK WE NEED TO DO THREE THINGS, FIRST WE NEED TO REFOCUS ON SPEED.

IT'S NOT ENOUGH THAT WE HAVE USED THIS PROGRAM TO CONNECT SCHOOLS AND LEVERS ACROSS THE COUNTRY BECAUSE THE CHALLENGE IS NO LONGER CONNECTION IT IS CAPACITY.

LET'S MAKE SURE THAT EVERYONE IN EVERY COMMUNITY HAS ACCESS WITH SPEEDS OF AT LEAST 100 MEGABITS IN THE NEAR TERM AND IN THE LONG-TERM.

WE NEED TO SIMPLIFY THIS PROCESS.

I ASSUME EVERYONE OF YOU IS FAMILIAR WITH THE E-RATE PROCESS.

IT IS A BIT OF A BUREAUCRACIES AND I THINK THERE ARE A LOT OF WELL INTENDED PEOPLE WHO WORKED ON THIS PROGRAM AT THIS AGENCY AND WITH OUR FRIENDS AT USAC BUT I THINK WE COULD DO A LOT MORE GOOD IF WE FOUND WAYS TO STREAMLINE THAT PROCESS AND MADE IT SIMPLER AND EASIER FOR SCHOOLS AND LIBRARIES TO APPLY.

LESS TIME ON ADMINISTRATION IS MORE TIME FOR LEARNING.

AND THIRD, I THINK WE HAVE TO SPEND SMART AND STOP SPENDING DOLLARS ON OLD-FASHIONED SERVICES AND OVER TIME WE WILL HAVE TO FACE OUT VOIP SERVICE.

I'D ALSO LIKE TO SEE US SPEND MORE.

IT MIGHT TAKE SOME WORK TO CONVINCING MY COLLEAGUES OF THAT BUT WE ARE AT AN INFLECTION POINT IN TECHNOLOGY AND THERE'S TREMENDOUS OPPORTUNITY IF WE SEIZE IT NOW.

WE CAN START BY INFLATION ADJUSTING THIS PROGRAM.

WE'VE NOT SEEN A BROAD INFLATION ADJUSTMENT SINCE 1998 AND WE'VE LOST A LOT OF PURCHASING POWER AS A RESULT SO MY HOPE IS IF WE COMBINE A FOCUS ON SPEED WITH THE COMMITMENT TO MAKING IT SIMPLER TO USE, WE ARE SPENDING OUR DOLLARS SMARTER WE WILL BE IN A GOOD POSITION TO DO AND NOT JUST EVOLUTIONARY THINGS WITH E-RATE, BUT REVOLUTIONARY ONES.

SO I WILL KEEP MY MOUTH SHUT NOW AND LEARN FROM SOME OF THE EXPERTS WE HAVE ASSEMBLED HERE.

THANK YOU ALL FOR BEING HERE TODAY AND TAKING THE TIME TO LISTEN.

[APPLAUSE]

>>: FIRST UP WE HAVE OUR EDUCATOR ROCKSTAR PANEL SO WE WILL CALL YOU THAT AND IT'S TRUE.

I WANT TO HAND IT OVER TO ERIC WILLIAMS WHO JUST RECENTLY AS YOU HEARD NOW SUPERINTENDENT OF LOUDOUN COUNTY AND WHAT HAPPENED TO SOME PEOPLE DON'T KNOW THE STORE I KEPT USING HIM AS SUCH A GOOD EXAMPLE FOR EVERYTHING HE WAS DOING IN YORK AND THE DRIVE BACK AND FORTH WAS GETTING TAXING AND HE SAID I WILL FIND A DISTRICT THAT'S CLOSER SO WE CAN DO THIS MORE EFFICIENTLY SO THANK YOU FOR DOING THAT.

WILLIAMS.

>>: I WOULD LIKE TO START THIS MORNING BY TALKING ABOUT SOME

FIRST GRADE STUDENTS WHO DECIDED THEY WANTED TO HELP SOME DOGS IN AN ANIMAL SHELTER DOWN THE STREET FROM THEIR SCHOOL.

>>: I WOULD LIKE TO SHARE WITH YOU AN EXPERT -- EXCERPT SO THEY WROTE A BOOK, 18 REASONS TO ADOPT A DOG.

LET ME BACK UP.

I AM GOING TO ADVANCE TO THE SLIDE WITH THE BLACK ON IT.

IF IT DOES NOT WORK, I WILL TELL YOU WHAT THEY WROTE ABOUT.

SOME OF THE REASONS THEY GAVE IS HEY, DOGS WILL FETCH A BALL IF YOU THROW IT.

DOGS WILL PROTECT YOU.

DOGS WILL KISS YOU ON YOUR CHEEK.

THESE WERE ALL WORDS OUT OF THE MOUTHS OF FIRST GRADERS WITH THEIR REASONS.

BUT WHAT I WOULD LIKE TO DO THOUGH IS MAKE 4 POINTS ABOUT THEIR WORK.

FIRST OF ALL,, THESE STUDENTS WERE LEARNING THE CONTENT AND COMPETENCIES OF THE CURRICULUM THROUGH THEIR WORK.

AND THEY POSTED THIS BOOK ON THE SCHOOL'S WEBSITE FOR PEERS, FAMILY MEMBERS, NEIGHBORS TO CONSIDER.

THE SHELTER ALSO POSTED IT ON THEIR WEBSITE.

AND SO THE FIRST POINT IS ITS CURRICULUM DRIVEN AND THE SECOND POINT IS THE TEACHER WAS GIVING THE STUDENT OPPORTUNITIES TO DO WORK THAT MATTERS SO THAT OPPORTUNITY WAS INCREDIBLY MEANINGFUL FOR THEM BECAUSE WHAT IT LED TO IS THEIR OWNERSHIP OF THEIR WORK AND THAT IS THE THIRD POINT, STUDENT OWNERSHIP IS MADE POSSIBLE IN THE FOURTH PIECE IS HOW IMPORTANT THE CONNECTIVITY WAS.

THEIR ACCESS TO DIGITAL TOOLS AND POSTING IT AND THAT THE BROADCASTING CONNECTION WITH THE GLOBAL AUDIENCE.

I WOULD LIKE TO SHARE EIGHT TWEETS FROM THE LAST COUPLE OF WEEKS THAT RELATE TO TEACHING AND LEARNING THAT ILLUSTRATES THE POWER OF CONNECTIVITY FOR IMPROVING TEACHING AND LEARNING.

SO THIS FIRST TWEET IS FROM A POETRY JAM A FEW WEEKS AGO AT ONE OF OUR HIGH SCHOOLS.

SO A FEW YEARS AGO WE SAID TO OUR STUDENTS, WE DO NOT WANT YOU TO POWER DOWN WHEN YOU COME TO SCHOOL.

BRING YOUR TECHNOLOGY TO SCHOOL TO COMPLEMENT SCHOOL OWNED DEVICES AS YOU DO WORK AT SCHOOLS.

SO YOU SEE IN THIS PHOTOGRAPH STUDENTS READING POEMS THEY HAVE WRITTEN.

THEY SAVED IT TO THE PRODUCT OUT IN OUR NETWORK AND THEY'RE ACCESSING IT FROM THEIR PHONES TO SHARE AT THE POETRY JAM.

IN THIS TWEET, A SECOND GRADER IS ACCESSING DIGITAL TOOLS ON OUR NETWORK IN ORDER TO CREATE A BOOK THAT SHE IS WRITING.

SHE'S INCREDIBLY ENTHUSIASTIC ABOUT WRITING A BOOK THAT WILL BE SHARED WITH HER PEERS, FAMILY MEMBERS AND HER FRIENDS AND POSTED ON THE INTERNET.

IN THIS TWEET, THE HIGH SCHOOL CALCULUS TEACHER CROWD SOURCED THE REVIEW. THE STUDENTS CREATED DIGITAL TORIES ABOUT DIFFERENT ASPECTS OF CALCULUS AND POSTED IT ON THE WEBSITE FOR GLOBAL AUDIENCE.

STUDENT USING THEIR DEVICE OR A SCHOOL OWNED DEVICE SCANNED THE QR CODES POSTED ON THE WALLS IN ORDER TO ACCESS THE TUTORIALS.

WE ALSO HAD MIDDLE SCHOOL STUDENTS WHO WERE WORKING ON PUBLIC SERVICE ANNOUNCEMENTS RELATING TO ELEPHANT POACHING.

SO THEY DOWNLOADED DIGITAL CONTENTS.

FIRST, WHILE THEY RESEARCH THE ISSUE AND THAT THEY DOWNLOADED DIGITAL CONTENT, SHOT ORIGINAL FOOTAGE, MATCH THAT UP TO CREATE A PUBLIC SERVICE ANNOUNCEMENT THAT THEY POSTED.

NOW SIMILARLY MIDDLE SCHOOL STUDENTS AT ANOTHER SCHOOL WORTH GIVING A CULMINATING PROJECT AT THE END OF THE EIGHTH GRADE YEAR TO ADDRESS A PROBLEM AND COME UP WITH THE MATCHING PROBLEM TO SOLVE IT.

THEY DID AN AWARENESS AND A FOOD DRIVE.

FIRST OF ALL, A TON OF RESEARCH USING THE INTERNET BUT THEN SOCIAL MEDIA TOOLS INSIDE AND OUTSIDE OF SCHOOL IN ORDER TO RAISE AWARENESS RELATING TO HUNGER AND THIS WAS A TWEET THEY SENT OUT ON THE STATUS OF THEIR ACTIONS.

THESE STUDENTS ARE CONNECTING WITH EXPERTS IN THE LOCAL COMMUNITY SO YOU SEE ONE STUDENT CHECKING OUT HIS PHONE AND READING AN E-MAIL FROM SOMEONE WHO WORKS AT THE LOCAL SOCIETY FOR PREVENTION OF CRUELTY TO ANIMALS SO CONNECTING WITH AN EXPERT WAS IMPORTANT AND ENGAGING FOR THEM.

THESE STUDENTS ARE FIFTH GRADERS WHO ARE SCRAPING WITH AN EXPERT WHO HAPPENS TO BE THEIR AGE AND THIS STUDENT THAT THEY ARE SCRAPING WITH HAS A FACIAL BEFORE MIDI AND IT'S SIMILAR TO A DEFORMITY THAT OUR BOOKS HAVE JUST READ ENTITLED WONDER AND THEY CONNECTED WITH THIS STUDENT AND IT INSPIRED THEM TO DO AN ANTI-BULLYING CAMPAIGN IN THEIR SCHOOL WITH DIGITAL PSA ANNOUNCEMENTS.

THIS LAST TWEET IS A SHOT OF MIDDLE AND ELEMENTARY SCHOOL STUDENTS WHO SKYPE WITH HILLARY AND CHELSEA CLINTON ALONG WITH THREE OTHER QUESTIONS ALONG THE COUNTRY AND THEY WERE COLLABORATING AND DISCUSSING ISSUES, FEELINGS THAT GIRLS AND WOMEN FACE GLOBALLY IN TERMS OF EDUCATION, ECONOMICS AND HEALTH CARE.

I'D ALSO LIKE TO SHARE A SCREEN SHOT.

WE HAVE 75 COURSES TAUGHT BY OUR TEACHERS THAT ARE ONLINE LEARNING, VIRTUAL COURSES FOR OUR STUDENTS AND STUDENTS ACROSS THE STATE OF VIRGINIA.

OUR TEACHERS HAVE CLASSES IN TRADITIONAL BRICK AND MORTAR SETTINGS ALSO USE ONLINE TOOLS SO THIS SCREENSHOT IS FROM A REVIEW SESSION FOR MIDDLE SCHOOL STUDENTS HELD IN THE EVENING, 40 KIDS LOGON AND THE TEACHER WORKED OUT THE PROBLEMS AND KIDS COULD PARTICIPATE IN THE CHAT ROOM DISCUSSION ON THE LEFT OF THE SCREEN SHOT ASKING QUESTIONS AND ANSWERING QUESTIONS.

SO I WANT TO MAKE 4 POINTS ABOUT ALL OF THESE TWEETS.

AND LESSONS.

FIRST OF ALL, THEY ARE ALL CONTENT RICH.

THIS IS NOT FLUFF.

IT'S ABOUT TEACHING THE CURRICULUM.

SECONDLY, IN EACH OF THESE CASES, THE TEACHERS WERE SAYING TO STUDENTS HATE

BECAUSE OF OUR CONDUCTIVITY WE CAN CHANGE THE WORLD TOGETHER.
THIS WORK MATTERS.

AND BECAUSE THE STUDENTS WANTED TO DO MEANINGFUL WORK, BECAUSE THEY WANTED TO HELP THE DOGS DOWN THE STREET, THEY REALLY OWNED THE LEARNING AND THIS QUESTION WAS POSED WHO OWNS THE LEARNING BUT WITH CONNECTIVITY AND STUDENTS ABLE TO DO MEANINGFUL WORK THERE IS TREMENDOUS ENGAGEMENT.

THE THIRD-GRADERS CRIED WHEN THE TRIP DOWN THE STREET WAS DELAYED BY ONE WEEK.

THEY WERE ENGAGED, THEIR LEARNING WAS DEEPER AND LONGER LASTING.

AND FINALLY, I WANT TO EMPHASIZE THAT CONNECTIVITY IS CRUCIAL TO IMPROVING THE QUALITY OF STUDENT WORK AND THE IMPACT OF THE WORK THAT THEY HAVE.

THE REASON IS AS YOU CAN TELL FROM THE EXAMPLES I'VE SHARED IS THAT CONDUCTIVITY GIVES STUDENTS ACCESS TO THE DIGITAL TOOLS AND THE KNOWLEDGE THAT THEY NEED WHEN THEY NEED IT.

IT ALSO IMPROVES THE IMPACT BY CONNECTING THEM WITH AUDIENCE MEMBERS, WITH STUDENTS, WITH PEOPLE THEY WANT TO INSPIRE TO ACTION.

FOR THOSE FOR REASONS, THE WORK THAT WE ARE DISCUSSING TODAY IS INCREDIBLY IMPORTANT.

THANK YOU.

[APPLAUSE]

>>: THANK YOU DR. WILLIAMS.

NEXT WE WILL GO DOWN THE LINE HERE AND WE TALKED ABOUT THE IMPORTANCE OF THE FACT THAT LEARNING DOES NOT STOP WHEN BELLS RING.

IT DOES NOT STOP WHEN STUDENTS WALK FROM THE CLASSROOM TO OUTSIDE OF THE CLASSROOM.

ONE OF THE THINGS WE NEED TO BE REALLY CLEAR ABOUT IS WE NEED LEARNING IN ALL PLACES, ANYWHERE WHERE STUDENTS NEED ACCESS SO A CRITICAL PART OF THE SUCCESS FOR TRANSFORMING LEARNING FOR THE FUTURE IS UNDERSTANDING HOW LIBRARIES FIT IN AND MEDIA CENTERS AND THE ROLE OF SUPPORT IN THOSE SAFE PLACES WHERE STUDENTS CAN COME AND GET THE HELP AND SUPPORT THEY NEED.

WITH THAT WE WILL HAND IT OVER TO CORINNE HILL WHO BY THE WAY, I'M NOT SURE IT CAME OUT IN THE INTRO IS THE LIBRARY JOURNALS LIBRARY AND OF THE YEAR SO WE ARE NOT JUST TALK ABOUT SOME LIBRARY IN HERE.

YOU KNOW.

[APPLAUSE]

SO IS THERE A TITLE FOR THAT?

THE HONORABLE SOMETHING?

LET'S JUST SAY THE HONORABLE LIBRARIAN OF THE YEAR CORINNE HILL.

OVER TO YOU.

>>: THANK YOU.

IT'S GREAT TO BE HERE.

WHAT YOU ARE DOING IS REALLY COOL.

THANK YOU FOR DOING THAT.

SO I AM CORINNE.

I'M FROM TENNESSEE AND I'VE BEEN THERE ABOUT TWO YEARS.

IT'S A TOWN OF 170,000 PEOPLE AND IT SITS IN THE SOUTHEASTERN CORNER OF TENNESSEE NORTH OF ATLANTA AND WE ARE ON THE TENNESSEE RIVER AND GEORGIA BORDER. IT'S ABSOLUTELY GORGEOUS THERE AND THE PEOPLE ARE AMAZING. THERE IS A CAN-DO KIND OF ATTITUDE THAT I'VE NOT SEEN ANYWHERE ELSE I'VE LIVED AND THEY HAVE THIS AMAZING APPROACH TO LIFE. CHATTANOOGA IS THE FIRST CITY IN THE WESTERN HEMISPHERE TO OFFER GIGABIT PER SECOND FIBER INTERNET TO ALL THE RESIDENTS AND BUSINESSES. THAT'S ONE GIGABIT PER SECOND AVAILABLE TO EVERY HOME AND BUSINESS IN A 600-MILE AREA. THE FIBER NETWORK WAS INSTALLED BY CHATTANOOGA PUBLICLY OWNED ELECTRIC POWER SYSTEM EPD AND I THINK THEY DID IT FOR THE RIGHT REASONS. THEY DID IT BECAUSE CHATTANOOGA'S ELECTRIC GRID WAS SHUT. YOU COULD WALK DOWN AND THE LIGHTS WOULD GO OUT. SO THEY KNEW IT AND THEY HAD ENOUGH SENSE TO KNOW IF THEY WERE GOING TO REPLACE IT, THEY WERE GOING TO DO IT RIGHT, AND THEY DID. EPD INSTALL A FIBER NETWORK TO SUPPORT THE MOST ADVANCED SMART GRID SYSTEM IN THE NATION WHICH MAKES THE SMART GRID THE FIRST KILLER APP AND I JUST LOVE THAT. IT'S SO COOL. SO I SAID BEFORE YOU TODAY AND I HAVE EIGHT MINUTES TO TELL YOU WHY A LIBRARY ABSOLUTELY POSITIVELY HAS TO HAVE HIGH-SPEED INTERNET ACCESS IF IT'S GOING TO SERVE THE COMMUNITY AT ALL LET ALONE DO IT WELL. SO AS AN ANCHOR INSTITUTION WITH HIGH-SPEED WIRELESS BROADBAND HERE IS WHAT I KNOW. FIBER TO YOUR DOOR IS KEY, BUT IT'S NOT THE WHOLE STORY. THE INFRASTRUCTURE, THE CABLING, THE SWITCHES, THE ROUTERS, ELECTRIC BREAKERS, OUR EXISTING BUILDINGS CANNOT MANAGE HIGH-SPEED BROADBAND. I SPENT \$160,000 FOR MY OPERATING BUDGET SO FAR FOR THESE INFRASTRUCTURE IMPROVEMENTS AND I STILL HAVE TWO BRANCHES AND ANOTHER FLOOR AT MY MAIN LIBRARY THAT IS YET TO BE COMPLETED. AND I'M SEEKING A WIRELESS SOLUTION NOT A HARD WIRE SOLUTION, WHICH IS MAKING IT LESS EXPENSIVE. HIGHER SPEEDS COMES WITH HIGHER MONTHLY CHARGES. I'M PUTTING OUT IN THE NEIGHBORHOOD OF ABOUT \$5,000 A MONTH FOR MY ACCESS. BECAUSE WE HAVE HIGH-SPEED BROADBAND ACCESS I'VE WATCHED CHATTANOOGA PUBLIC LIBRARY BECOME A LAB FOR THE FREELANCE JOB MARKET. A STARTUP CALLED ENGAGED 3D, WHICH IS FOR DEVELOPING DEVELOPERS STARTED A SUMMER CODING PROGRAM FOR US FOR TEENS BUT THEY'VE ALSO PROTOTYPED CAMERA VIDEOCONFERENCING FROM THAT LIBRARY DATABASE. WE ARE SEEING AN ONSLAUGHT OF FOLKS WHO HAVE IDEAS AND NEED A PLACE TO WORK THROUGH THOSE IDEAS. THEY NEED TIME TO WORK THROUGH THE ITERATIVE PROCESS SO THEY CAN FIND SUCCESS. THE LIBRARY IS FILLING THAT NEED. WE ARE TAKING AN IDEA FROM DISCOVERY TO TRACTION. WHEN AN IDEA WARRANTS FINANCIAL SUPPORT SO THAT'S THE TIME THEY CAN MOVE INTO THEIR OWN SPACE AND ACTUALLY START CONTRIBUTING TO CHATTANOOGA'S ECONOMIC

DEVELOPMENT.

THAT'S A REALLY COOL THING TO WATCH HAPPEN UNDER YOUR ROOF.

OUR FOURTH FLOOR SPACES ARE DATA SPACE AND IT'S ABOUT EXPERIMENTATION AND INVENTION.

WE HAVE A COMMUNITY MEMBER AND HE AND HIS WIFE ADOPTED A CHILD FROM THE UKRAINE.

THE CHILD HAS NO LEGS AND NO ARMS.

BUT WITHOUT LIBRARY SOFTWARE AND OUR 3D PRINTER DAD PRINTED THE DEVICE THAT ALLOWS THE CHILD TO EAT ON HIS OWN AND HE CAN CONTINUE TO COME BACK AS THE CHILD GROWS AND REPRINT AND MAKE ADJUSTMENTS AND REPRINT FOR THAT CHILD WE'VE TAKEN OUR SMALLEST BRANCH LOCATED IN PART OF OUR COMMUNITY RIPE WITH CHALLENGES AND CREATED A SPACE PRIMARILY FOR CHILDREN AND KIDS WITH HIGH-SPEED BROADBAND AT THIS LOCATION KIDS COME IN DROVES AFTER SCHOOL.

I AM -- THEY PLAY VIDEO GAMES, ABSOLUTELY POSITIVELY THEY DO BUT THEY ALSO GET THEIR HOMEWORK DONE AND THEY HAVE TO BEHAVE IF THEY WANT TO STAY SO THEY ARE LEARNING MANNERS IN THE PROCESS.

BECAUSE THE HIGH-SPEED BROADBAND OR HOW IT BLEEDS INTO THE PARKING LOT IT'S BECOME A COMMON SIGHT TO SEE KIDS ON THEIR SCHOOL ISSUED IPADS IN THE PARKING LOT AFTER HOURS.

SO I'M IN ENGLISH MAJOR AND AN OLD ENGLISH MAJOR SO I LOVE IRONY.

IT'S ONE OF MY FAVORITE THINGS.

SO I LOVE IT WHEN EVERYONE IS SO FOCUSED ON DIDN'T STUDENTS IPADS.

I'VE TALKED TO FOUNDATIONS AND THEY SAY THAT IS THEIR NUMBER ONE THING REQUEST THEY GET FROM TEACHERS IS TO REQUEST IPADS IN SCHOOLS.

SO IT TRAINING TEACHING TO EDUCATE USING TECHNOLOGY BUT THE SCHOOLS ARE NOT WIRED FOR ACCESS.

TRUTH BE TOLD, IF YOU LOOK AT MOST OF OUR SCHOOLS THEY ARE BARELY BUDGETED FOR CHALK.

SO THERE IS IRONY AT IT'S FINEST.

BUT LET'S LOOK AT THE BIG PICTURE AND THE BOTTOM LINE.

THIS IS NOT ABOUT DOWNLOADING A HOLD -- A FULL SEASON ABOUT HOUSE OF CARDS OR STREAMING SCANDAL.

I'M THRILLED, TRUST ME THAT I CAN STREAM HOUSE OF CARDS, BUT THAT'S NOT WHAT THIS IS ABOUT AND IT MAKES ME CRAZY THAT THIS KIND OF POWER IS COMMERCIALIZED IN THE U.S. BECAUSE IT'S THAT COMMERCIALIZATION THAT LEADS PEOPLE TO BELIEVE THAT DOWNLOADING SCANDAL REALLY FAST IS WHAT THIS IS ALL ABOUT.

[APPLAUSE]

THANK YOU.

LIBRARY AND HAVE BEEN HELPING OUR COMMUNITIES MANAGE THE INFERNO -- INTERNET SINCE ITS INFANCY.

WE KNOW IT'S ABOUT PROVIDING ACCESS TO JOB INFORMATION, GOVERNMENT INFORMATION, HEALTH INFORMATION, LOCAL NATIONAL AND INTERNATIONAL NEWS.

WE KNOW THIS IS ABOUT BEING ENGAGED IN YOUR COMMUNITY.

AND IT'S ABOUT CREATING A CULTURE OF DIGITAL EXCELLENCE.

AS A PUBLIC LIBRARY DIRECTOR I'M HERE TO TELL YOU IT'S A GAME CHANGER FOR THE

LIBRARY AND FOR THE COMMUNITY.

WE ARE DELIVERING BETTER SERVICES TO OUR CITIZENS SIMPLY BY PROVIDING THEM WITH A GOOD EXPERIENCE.

NOTHING HAS TO BUFFER, PAGES LOAD QUICKLY.

IT'S NOT PAINFUL TO DO SOMETHING ONLINE AND I HAVE A CONFESSION TO MAKE.

I'M CATHOLIC SO I DO THIS A LOT, WHEN I LEAVE CHATTANOOGA AND I COME TO A PLACE LIKE SAY WASHINGTON DC, I'M REALLY APPALLED BY HOW BAD YOUR INTERNET ACCESS IS.

[LAUGHING]

AND IT MAKES ME WONDER, DO YOU GUYS EVEN KNOW HOW BAD IT IS AND QUITE FRANKLY, I DON'T KNOW HOW YOU ALL LIVE LIKE THIS.

I REALLY DON'T.

SO THE INTERNET IS MOVING ON WITH OR WITHOUT YOU.

PLACES LIKE FINLAND AND SWIGGUM AND CHATTANOOGA HAS FIGURED IT OUT.

THIS IS JUST THE BEGINNING.

THE INTERNET IS IN ITS INFANCY AND MY GUESS IS WE HAVE SEEN NOTHING YET.

ACCESS TO HIGH-SPEED BROADBAND IS THE NEW DIGITAL DIVIDE AND LITERACY IS A CLOSE SECOND.

WE ARE WATCHING 3D PRINTERS REVOLUTIONIZE MANUFACTURING, ONLINE LEARNING HAS TURNED EDUCATION ON ITS EAR AND THE JOB MARKET IS BECOMING MUCH MORE FREELANCE AND CREATIVE.

CHATTANOOGA IS THE MOST CONNECTED CITY IN THE U.S. AND WE ARE WELL AWARE OF THE COMMITMENT WE HAVE TO HELP THEM MOVE THROUGH THE REVOLUTION AND I BELIEVE WE ARE POSITIONED TO HELP THEM DO JUST THAT.

THANK YOU VERY MUCH.

[APPLAUSE]

AND IT'S AWFUL YOU ALL HAVE THAT TV UP THERE BECAUSE I AM LIKE LOOK AT MY HAIR.

[LAUGHING]

>>: NOW YOU TELL ME.

THANK YOU.

ONE OF THE PIECES THAT CORE THROUGH ALL OF THIS IN ONE OF THE REASONS THE DEPARTMENT OF EDUCATION IS SO INVOLVED AND INTERESTED IN MAKING SURE WE HAVE HIGH-SPEED CONNECTIVITY TO ALL SCHOOL, ALL CLASSROOMS IS BECAUSE OF THE POWER IT HAS TO LEVEL THE PLAYING FIELD AND MAKE SURE THERE ARE OPPORTUNITIES FOR GROUPS AND COMMUNITIES THAT BY LOCATION PHYSICALLY CHALLENGED TO ACCESS TO THE SAME MATERIALS OR BECAUSE OF OTHER CHALLENGES, IT IS CRITICAL AND CRUCIAL WE USE TECHNOLOGY TO MAKE SURE EVERYBODY HAS THE SAME OPPORTUNITY.

SO WITH THAT I WOULD LOVE TO HAND IT OVER TO OUR NEXT PANELIST, AHNIWAKE ROSE WHO IS SOMEBODY, EXECUTIVE DIRECTOR OF AN IAEA WORKING EVERY DAY TO MAKE SURE THAT THIS LOVERS, THIS POWER OF TECHNOLOGY SUPPORTING SOME STUDENTS WHO NEED IT ABSOLUTELY THE MOST SO OVER TO YOU.

>>: THANK YOU.

WE KNOW HOW BAD THE INTERNET CONNECTION IS HERE, WE CAN ALL SAY YES.

I DO ALMOST WANT TO APOLOGIZE THAT I'M IN THE MIDDLE OF THIS PANEL BECAUSE WHEN THEY CALLED TO INVITE US, THEY REALLY WANTED US TO TALK ABOUT SOME OF THE SUCCESSES WITHIN INDIAN COUNTRY AND UNFORTUNATELY WE ARE NOT THERE.

I WILL BE FRANK AND HONEST IT WAS HARD FOR US TO COME UP WITH ONE OR TWO GOOD EXAMPLES TO PROVIDE YOU WITH WHERE WE WERE AT AND WHAT WE ARE DOING SO I NEED TO PAINT THE PICTURE BECAUSE IT'S IMPORTANT FOR YOU TO HAVE THOSE IMAGES IN YOUR HEAD OF HOW NATIVE STUDENTS ARE PERFORMING AND YOU NEED TO KNOW HOW THEY ARE PERFORMING ACADEMICALLY BECAUSE IT'S IMPORTANT TO UNDERSTAND THAT PICTURE AND THEN TO TALK ABOUT HOW WE WILL CONTINUE TO BE LEFT BEHIND.

SO MY NAME IS AHNIWAKE ROSE I'M FROM OKLAHOMA.

I JUST MET SOME FELLOW OKLAHOMANS AND I HAVE TO TELL YOU I'M A LITTLE WORRIED ABOUT THE BROADBAND ACCESS IN OKLAHOMA BECAUSE IT'S ONE OF THE FEW PLACES I CAN GO TO ESCAPE.

I KNOW WHEN I GO HOME I WILL NOT HAVE ACCESS.

I KNOW WHEN I GO HOME I WILL HAVE TO SCHEDULE TIME TO GO TO THE NEAREST STARBUCKS, WHICH IS ABOUT 45 MINUTES AWAY SO I CAN WORK.

I KNOW WHEN I GO HOME MY DAUGHTER WON'T BE ABLE TO DO ANY OF HER HOMEWORK OR ACTIVITIES BECAUSE SHE DOES NOT HAVE THOSE TYPES OF EXCESSES AND WHEN I GO HOME MY NIECES WILL HAVE NO IDEA HOW TO DO BASIC GOOGLE RESEARCH BECAUSE THEY HAVE NEVER DONE IT.

THEY ARE IN EIGHTH GRADE AND THEY ARE BEHIND.

SO YOU ARE GOING TO MAKE ME WORK.

SO LET'S START WITH THAT.

I WANT TO TELL YOU A LITTLE BIT ABOUT US, IF YOU DON'T KNOW THERE'S 506 FEDERALLY RECOGNIZED TRIBES AND EACH OF US WITH UNIQUE LANGUAGES CULTURES AND HISTORY AND EACH OF US STRUGGLING WITH WHAT THIS MEANS TO NOT ONLY INTERACT WITH OUR STATES AND WE ARE CONCERNED THAT IF THE STATE HAS FULL ACCESS THAT THE TRIBES WILL NOT.

THESE RELATIONSHIPS ARE NOT SOMETHING THAT WORK FOR US ALL OF THE TIME AND I DON'T REALLY WANT TO TALK ABOUT POLICY DECISIONS OR POLICY BACKS I THINK IT'S IMPORTANT TO KEEP IT AS A FRAME OF REFERENCE.

WE WERE EXCITED TO SEE THIS WAS A 99 PERCENT CONNECTIVITY BUT IF YOU DON'T KNOW WE ARE JUST OVER 2 PERCENT OF THE POPULATION SO IT REALLY CONCERNS US THAT THIS 1 PERCENT IS GOING TO BE US.

WE ARE REALLY, REALLY CONCERNED THAT 1 PERCENT WILL BE US.

AND WE ARE AT 2 PERCENT OF THE POPULATION IN NEW MEXICO.

WE ARE ABOUT 15 PERCENT OF THE POPULATION SO IT'S REALLY IMPORTANT THAT YOU ARE CONSIDERING US IN A PARTICIPATORY WAY.

I WANT TO LET YOU KNOW THE STATISTICS OF OUR POPULATION.

RIGHT NOW WE HAVE ABOUT 50 PERCENT OF OUR STUDENTS GRADUATE BEING COMPARED WITH 80 PERCENT OF THE REGULAR POPULATION.

ACCORDING TO NATE OUR 120 BUREAU OF EDUCATION FUNDED SCHOOLS WE HAVE THE LOWEST ACADEMIC PERFORMING SCHOOLS IN THE NATION.

AS YOU TALK ABOUT NOT DOING BROADBAND, THEY ABSOLUTELY HAVE THOSE ISSUES SO KEEP THAT IN MIND AS YOU THINK ABOUT OUR CONVERSATION TODAY.

OUR STUDENTS ARE ISOLATED.

WE FACE ISSUES THAT NORMAL RURAL POVERTY-STRICKEN SCHOOLS FACE, BUT BECAUSE OF OUR SOVEREIGNTY AND OUR LAND ISSUES THEY BECOME EVEN MORE COMPLICATED.

AS YOU WORK ON OVERCOMING THESE OBSTACLES, WE KNOW THAT THERE ARE SUCCESSES OUT THERE AND WE KNOW THE TRIBES WILL SEE THESE TO ACHIEVE THE SUCCESSES AND SINCE MY TENURE THIS IS SOMETHING WE'VE BEEN ACTIVELY INVOLVED IN.

WE LOOK FOR TO HER TEACHERS AND EDUCATORS AND BEING HERE TO FIND THESE SOLUTIONS WITH YOU.

WE'VE CREATED A NUMBER OF TOOLS TO HELP OUR STUDENTS AND SCHOOL START TAKING THIS FIRST STEP FORWARD.

WHAT I WANT TO TALK TO ABOUT IS TO PAINT THAT PICTURE FOR YOU LIKE I SAID AND TO THINK ABOUT COMMON CORE.

WE KNOW THE TEACHERS ARE MOVING TOWARD THIS IN THE STATES ARE ADOPTING IT AND NIA IS DOING WORK AROUND COMMON CORE AND COMMON CORE ACCESS WITHIN OUR SCHOOLS.

ONE -- SOME OF THE WORK WE'RE DOING WITH IN NEW MEXICO REQUIRES -- THE STATE HAD DESCRIBED IT TO PUT ALL COMMON CORE CURRICULUM ONLINE.

SOUNDS GREAT FOR MOST PEOPLE.

OUR SCHOOLS HAVE ONE LINE SO FOR ONE OF THE PUT THOSE WE ARE TRYING TO ACCESS AND TRYING TO PROVIDE TRAINING AROUND COMMON CORE ACCESS IT REQUIRED A FULL WEEK OF OVERNIGHT DOWNLOADS TO BE ABLE TO ACCESS THE CURRICULUM.

WE DON'T HAVE THAT CONNECTIVITY WE NEEDED AND WE NEEDED APPROVAL TO BE ABLE TO ACCESS THEIR LINE FOR THAT FREQUENT AMOUNTS OF THAT THE TEACHERS COULD RECEIVE THE BASIC TRAINING THEY NEEDED FOR THIS NEXT STEP.

EVERYTHING YOU ARE TALKING ABOUT, THIS IS NOT SOMETHING THAT WOULD BE NICE, WE WANT TO HAVE FUN AS WELL BUT THIS IS A TOOL WITHIN OUR CURRICULUM AND OUR TEACHERS ARE GOING TO LAP THAT NEXT TOOL.

THE STUDENTS WILL NOT HAVE THE OPPORTUNITIES THEY NEED TO ENGAGE IN A CURRICULUM AND A ROBUST VIBRANT WAY.

SO I DO WANT TO GIVE YOU A REALLY GOOD EXAMPLE OF THE THINGS WE CAN DO WHEN TRIBES DO HAVE ACCESS THEY NEED AND MY NATION, CHEROKEE NATION IS ONE OF THOSE EXAMPLES.

WE HAVE 96 PUBLIC SCHOOLS LOCATED WITHIN 14 COUNTIES IN OKLAHOMA.

UNDER TRIBAL DIRECTION THEY ARE PARTNERING WITH TECHNOLOGY LEADERS SUCH AS GOOGLE AND APPLE AND MICROSOFT TO MAKE SURE THE CHEROKEE ALPHABET IS LOCATED ON LAPTOPS, TABLETS, MOBILE PHONES SO THEY HAVE A ROBUST WAY TO TALK NOT ONLY IN ENGLISH BUT ALSO IN OUR CHEROKEE LANGUAGE BECAUSE A MERCHANT PROGRAMS ARE IMPORTANT TO US.

THEY'VE CONNECTED WITH OUR HOMELAND SCHOOLS LOCATED IN NORTH CAROLINA AND THEY'RE ABLE TO SHARE STORIES AND TALK ABOUT WHAT THE TRAIL MEANT FROM NORTH CAROLINA TO OKLAHOMA.

THEY'RE ABLE TO SPEAK TO EACH OTHER IN CHEROKEE AND TALK ABOUT THE ELDERS AND RECONNECT WITH FAMILIES IN A REALLY ROBUST VIBRANT WAY AND IT'S CREATING THIS LEARNING ENVIRONMENT THAT IS CONTAGIOUS WITHIN OUR SCHOOLS AND IT'S BECOMING A HIGHLY COMPETITIVE SCHOOL OUR IMMERSION PROGRAM TO GET INTO BECAUSE THEY HAVE THESE EXCESSES.

LIKE I SAID IT WAS HARD FOR US TO COME UP WITH EXAMPLES AND THE CHEROKEE NATION IS ONE OF THOSE BECAUSE OF THEIR HUGE INVESTMENT WITHIN THE SCHOOL SYSTEM AND

BECAUSE OF THE TRIPE OF TRIPE THEY ARE THEY ARE ABLE TO HAVE THOSE ACCESS TO RESOURCES AND SOME OF OUR OTHER TRIBES DON'T.

THESE ARE GREAT MODELS AND WE KNOW THEY CAN BE REPLICATED.

OUR TRIBES NEED THE OPPORTUNITY TO ACCESS THINGS IN A WAY THAT EVERYONE ELSE IS AND WE ARE LOOKING FORWARD TO BEING ABLE TO WORK WITH YOU HAND IN HAND TO FIND THE SOLUTION.

THERE'S BEEN SO MANY GREAT EXAMPLES OF THE NEXT STEPS THAT THE E-RATE PROGRAM NEEDS TO TAKE AND I KNOW YOU ARE FOCUSED ON RURAL SCHOOLS AND I KNOW THAT'S SOMETHING YOU ARE THINKING ABOUT IF YOU COULD MAKE TRIBES A PRIORI THE WITHIN THAT IT WOULD JUST ABSOLUTELY CHANGE THE LIVES OF OUR SCHOOL.

AGAIN I HOPE YOU KEEP THESE STORIES AND PICTURES IN MIND AND I KNOW THESE ARE GREAT EXAMPLES AND I KNOW THE TRIBE CAN BE PART OF THAT STORY AND WE ARE LOOKING FORWARD TO 20 YEARS LATER WHEN YOU'RE GRADUATING PERHAPS WITH DEGREES THAT TRIBES ARE ABLE TO PAINT A BETTER PICTURE.

THANK YOU.

[APPLAUSE]

>>: THANK YOU.

FOR OUR LAST MEMBER OF OUR PANEL, DR. DALLAS DANCE WHO'S BEEN DOING SOME AMAZING WORK NOT TOO FAR NORTH FROM HERE AND REALLY SHOWING THE COUNTRY HOW DO WE RETHINK IN A LARGE SCHOOL SYSTEM WHAT LEARNING CAN LOOK LIKE WHEN POWERED BY TECHNOLOGY.

SO DR. DANCE.

>>: THANK YOU, RICHARD AND

THANK YOU TO THE FCC FOR THE OPPORTUNITY TO BE HERE TODAY.

WE WERE GOING TO DO WHATEVER WE NEEDED TO DO TO ADJUST THE SCHEDULE TO BE HERE.

A TIMELY TOPIC AND FOUR SUPERINTENDENTS ACROSS THE COUNTRY WE TALK ABOUT WHAT WE NEED TO DO TO A DANCE THE DIGITAL LEARNING AGENDA AND WHAT WE WANT TO HAPPEN FOR YOUNG PEOPLE EVERY SINGLE DAY SO THANK YOU FOR THE OPPORTUNITY TO BE HERE.

I WILL BEGIN BY SAYING LAST WEEK WE HAD AN OPPORTUNITY TO VISIT THE WHITE HOUSE WITH SEAN MACOMB WHO WAS THE BALTIMORE COUNTY TEACHER OF THE YEAR AND ALSO MARYLAND STATE TEACHER OF THE YEAR.

AND JUST NATIONALLY NAMED THE NATIONAL TEACHER OF THE YEAR BY PRESIDENT OBAMA AND ARNIE DUNCAN.

AT THAT DINNER WE HAD, WHICH WAS A WONDERFUL DINNER THAT WAS PUT ON FOR SEAN, WE STARTED HEARING ALL THE STORES ABOUT EDUCATION IN HOW EDUCATION WAS 30, 40, 50 YEARS AGO AND ONE OF THE SPEAKERS MENTIONED THAT HE WAS REMINDED OF THE DITTO MACHINE AND WHITE OUT.

AND I MAY NOT BE THE ONLY ONE IN THE ROOM WHO IS NOT FAMILIAR WITH EITHER ONE OF THEM.

SO I AM AS YOUNG AS I LOOK.

[LAUGHING]

SO I HAD THE OPPORTUNITY MONDAY WHEN I VISITED SOME SCHOOLS, WHICH IS THE MOST

FAVORITE PART OF MY JOB AND ASKED A NINTH GRADER, TELL ME ABOUT THE DITTO MACHINE OR WHITE OUT AND LITERALLY THIS IS ONE OF THE GREAT THING ABOUT GOING TO SCHOOL YOU EXPECT STUDENTS TO BE HONEST WITH YOU, BRUTALLY HONEST AND WHAT SHE SAID IS WHAT DO I NEED TO KNOW WHAT EITHER OF THEM FOR.

WHAT IT REMINDS ME OF IS THAT OUR EXPERIENCE HAS CHANGED AND AS WE THINK ABOUT OURSELVES AS POLICY LEADERS AND SYSTEMS LEADERS ENDS TEACHERS IN THE CLASSROOM WE HAVE TO THINK WHAT WE EXPECT STUDENTS TO THINK AND DO BUT HOW DO WE PROVIDE THEM THAT EDUCATIONAL EXPERIENCE SO I WANT TO SHARE WITH YOU A LITTLE BIT ABOUT WHAT WE ARE DOING IN BALTIMORE COUNTY AND PUBLIC SCHOOLS AROUND THAT.

SO TO TELL YOU ABOUT BALTIMORE COUNTY PUBLIC SCHOOLS, BALTIMORE COUNTY PUBLIC SCHOOLS, 26TH LARGEST SCHOOL SYSTEM IN THE COUNTRY, CLOSE TO 19,000 EMPLOYEES, I APOLOGIZE I CANNOT STAY FOR THE FULL DAY BECAUSE I WILL BE CELEBRATING OUR NEARLY 9,000 TEACHERS A NATIONAL TEACHER'S DAY BUT WE HAVE 173 SCHOOL CENTERS AND PROGRAMS AND I'VE BEEN THE SUPERINTENDENT FOR TWO YEARS NOW AND WHEN I GOT THE JOB SOMEONE SAID YOU CAN SIT IN THIS JOB FOR TEN YEARS BY JUST COASTING, WHICH BOTHERED ME BECAUSE BALTIMORE COUNTY PUBLIC SCHOOLS IS TRADITIONALLY KNOWN AS A GOOD SCHOOL SYSTEM.

OUR COMMUNITY IS CHANGING BUT AT THE SAME TIME, WE BOAST ACCOLADES AND AWARDS, BUT WHAT I SAID WAS GOOD IS NOT GREAT.

AND GOOD IS THE ENEMY OF GREAT SO WE NEED TO DO MORE FOR OUR STUDENTS SO FOLLOWED BY THE LEADERSHIP OF DR. JOE HARRISON WHICH BLUEPRINT FOR PROGRESS WAS ARE SURE TO TAKE PLAN WE CREATED BLUEPRINT 2.0 AND WE WILL GET INTO THE DETAILS OF THAT PLAN, BUT WE LOVE TO BE DRIVEN BY OUR THEORY OF ACTION AND THAT SAYS OUR GOAL IS TO PREPARE STUDENTS TO BE GLOBALLY COMPETITIVE WHEN THEY GRADUATE.

THAT NEEDS TO HAPPEN BY DOING TWO THINGS.

NUMBER ONE WE NEED TO MAKE SURE THERE'S A DIGITAL LEARNING ENVIRONMENTS EVERY SCHOOL FOR EVERY STUDENT IN EVERY COMMUNITY WHICH MEANS EQUITY IS DRIVEN BY THE FACT WE HAVE TO CLOSE THE DIGITAL DIVIDE AMONG BALTIMORE COUNTY PUBLIC SCHOOL STUDENTS.

THE OTHER THING IS WE HAD TO MAKE SURE OUR STUDENTS HAVE ACCESS AN OPPORTUNITY TO LEARNING A SECOND LANGUAGE PRIOR TO GRADUATION.

SO A BOLD THEORY OF ACTION AND WE SAID THE WAY WE ARE ABLE TO DO THAT IS BY LEVERAGING TECHNOLOGY.

WE STARTED WITH CALLING IT THE INSTRUCTIONAL DIGITAL CONVERSION BUT ONE THING WE'VE BEEN CLEAR ON IS STUDENTS TAKE TO HELP US DRIVE OUR DECISIONS SO STUDENTS CREATED THE PROGRAM STUDENTS AND TEACHERS ACCESSING TOMORROW AND IT TALKS ABOUT GOING ONE TO ONE OVER THE NEXT FIVE SCHOOL YEARS.

ONE OF THE THINGS YOU WILL NOT HEAR US TALK ABOUT IN BALTIMORE COUNTY IS A DEVICE. I THINK AS WE HEAR ABOUT SOME OF THE STORIES THAT ARE OCCURRING ACROSS THE COUNTRY WITH FOLKS TALKING ABOUT IPADS AND KINDLES AND ALL THESE THINGS THAT WE KNOW OUR GREAT INSTRUCTIONAL TOOLS IT GETS BOGGED DOWN IN THE DEVICE, WHICH IS THE WRONG APPROACH SO BALTIMORE COUNTY PUBLIC SCHOOLS WE SAID THIS IS ALL ABOUT INSTRUCTIONAL CONVERGENCE FOR OUR KIDS AND WE WANT TO CHANGE WHAT

STUDENTS CAN KNOW AND DO AND HOW WE CHANGE THAT IS HOW WE HAVE A CONVERSATION AROUND THE DEVICE BUT IT STARTS WITH THEIR TEACHING AND LEARNING FRAMEWORK.

WE WERE FORTUNATE AS WE WERE ADOPTING THE CORE STANDARDS, WHICH ARE THE STANDARDS WE WERE GIVING -- DRIVEN BY OUR TEACHER AND LEARNING FRAMEWORK AND WE LOOKED AT WHAT WE WANTED OUR STUDENTS TO BE ABLE TO DO, WHAT WE WANTED OUR TEACHERS TO BE ABLE TO DEMONSTRATE AND WHAT DID WE WANT OUR CURRICULUM TO LOOK LIKE.

SO WE WERE DRIVEN BY THE FACT THAT AT ALL LEVELS OF OUR ORGANIZATION ELEMENTARY, MIDDLE AND HIGH SCHOOL LEVELS AS WE SURVEYED STUDENTS 60 PERCENT ON AVERAGE THAT THE WORK WAS CHALLENGING.

BUT THE TEACHER SAID 90 PERCENT OF THE TIME THE WORK WAS CHALLENGING. A MAJOR DISCONNECT BETWEEN WHAT THE STUDENTS WERE SAYING AND WHAT WE EXPECTED AS ADULTS.

BUT WE KNEW WE NEEDED TO HAVE A CURRICULUM AND WE WERE VERY EXCITED AS WE LEVERAGED OUR RELATIONSHIP WITH OUR SERVICE PROVIDERS SUCH AS DISCOVERY EDUCATION WE WERE ABLE TO PROVIDE RICH QUALITY DIGITAL CONTENT TO OUR STUDENTS SO WE SAID HOW DO WE LAYER TECHNOLOGY ON ALL OF THIS TO PROVIDE THE ACCESS TO OUR STUDENTS.

INTERESTINGLY ENOUGH ABOUT OUR BACKGROUND, I WAS A TEACHER IN A ONE TO ONE SCHOOL SYSTEM IN A PUBLIC SCHOOL UNDER THE LEADERSHIP OF MARK EDWARDS AND YOU PROBABLY HEARD ABOUT THAT.

I WAS ALSO A PRINCIPAL IN THE PUBLIC SCHOOLS AND A ONE TO ONE INITIATIVE IN A SUPERINTENDENT IN A ONE-TO-ONE INITIATIVE AS WELL.

BUT THE MOST IMPORTANT ROLE I PLAY IS I'M A PARENT OF A FOUR-YEAR-OLD WHO'S IN A SCHOOL THAT IS ONE TO ONE IN WHAT I SEE HAPPENING WITH MY FOUR-YEAR-OLD RIGHT NOW IS WHAT EVERY SINGLE FOUR-YEAR-OLD ACROSS THE COUNTRY SHOULD BE EXPERIENCING RIGHT NOW.

THOSE SCHOOL SYSTEMS LOOK TO GO ONE TO ONE OR LEVERAGE TECHNOLOGY TO PERSONALIZE LEARNING FOR STUDENTS AND WORK ON THIS WHOLE IDEA AROUND STUDENT ENGAGEMENT, EIGHT DIFFERENT CONVERSION STATE TO EXIST SO IN BALTIMORE COUNTY PUBLIC SCHOOLS WE LOOK AT THE CURRICULUM INSTRUCTION -- CONSTRUCTION CONVERSION AND HOW DO WE TRANSITION THE ENTIRE CULTURE AROUND EACH OF US SHOULD BE DOING TO MAKE SURE THIS WORKS.

WE HAD A POLICY CONVERSION TO KEEP KIDS AND EMPLOYEES SAFE.

OUR BUDGET CONVERSION BECAUSE IT COSTS MONEY TO DO THIS AND THE COMMUNICATIONS CONVERSION BUT WHAT REALLY KEEPS ME UP AT NIGHT AND I KNOW I'M NOT THE ONLY SUPERINTENDENT OR EDUCATOR WHO THINKS THIS WAY IS THE WHOLE IDEA AROUND THE INFRASTRUCTURE CONVERSION.

173 SCHOOLS AND PROGRAMS AND TO PUT WIRELESS ACCESS IN ALL OF THOSE BUILDINGS IT WOULD ONLY COST \$12 MILLION IT'S SOMETHING WE HAD NOT AS A SCHOOL SYSTEM INVESTED IN AND WE HAD NOT BROUGHT TO THE FOREFRONT OF OUR POLICY MAKERS AND OUR FUNDERS.

SO WHEN WE START LOOKING AT THE INFRASTRUCTURE CONVERSION WE STARTED GOING BACK THINK WHAT DO WE WANT PEOPLE TO DO ONCE THE INFRASTRUCTURE CONVERSION

HAPPEN.

THIS LED TO THE IDEA OF THINKING AS A STUDENT AND KEEPING THAT AT THE FOREFRONT AND AN EDUCATION WE HAVE SO MANY SYSTEMS THAT DRIVE OUR DECISIONS, STUDENT INFORMATION AND LEARNING MANAGEMENT AND WE MAY HAVE AN INSTRUCTIONAL MANAGEMENT SYSTEM OR OUR PARENT POGO, ALL OF THESE DIFFERENT SYSTEMS AND WE SAID HOW DO WE BRING THAT TOGETHER WITH BCPS ONE.

SO WE ARE DUMPING A DIFFERENT SYSTEMS AND REPLACING IT WITH ONE, WHICH IS A SINGLE SIGN-ON FOR OUR STUDENTS, TEACHERS, PARENTS AND OUR COMMUNITY TO HAVE ACCESS TO WHAT WE ARE LOOKING TO DO.

WE ARE ALSO DOING AROUND THE INFRASTRUCTURE CONVERSION AS WE SAID THIS IS A PRIORITY AND WE MAKE THE CASE WITH THE FUNDERS THAT WE NEED TO MAKE IT HAPPEN SO WHAT WE ARE LOOKING TO DO IS BY THE END OF THE SCHOOL YEAR A.D. ONE OF OUR SCHOOLS WILL BE WIRELESS AND OVER THE NEXT SCHOOL YEAR 173 SCHOOLS WILL BE COMPLETELY WIRELESS TO GO TO A ONE TO ONE ENVIRONMENT.

WE ALSO ARE EXCITED THAT WE ARE NOT LOOKING AT THIS AS A BALTIMORE COUNTY PUBLIC SCHOOLS INITIATIVE BUT A BALTIMORE COUNTY INITIATIVE SO THE 18 LIBRARIES IN BALTIMORE COUNTY WILL BE ON OUR NETWORK SO THAT AS STUDENTS AND PARENTS AND TEACHERS VISIT AND FREQUENT OUR LIBRARIES THEY HAVE THE SAME LEVEL OF ACCESS THEY WILL HAVE WITHIN OUR SCHOOL BUILDINGS AS WELL.

WE ARE REALLY, REALLY EXCITED THAT AS WE DO THIS WE ARE STARTING VERY SLOW WITH LIGHTHOUSE SCHOOL SO NEXT YEAR WE HAVE TEN ELEMENTARY SCHOOLS THAT PILOT THIS FORCE AS WE PHASE IT OUT.

I HEAR ALL THE TIME FROM HIGH SCHOOL STUDENTS WHO SAY WHY NOT START WITH US. WE WANT THE DEVICES.

IT'S NOT ABOUT THE DEVICE IT'S ABOUT WE HAVE TO MAKE SURE OUR TEACHERS AND PRINCIPALS ARE TRAINED ON THE TYPE OF TRANSFORMATIONAL SHIFT THAT IS HAPPENING. SO WHAT BETTER WAY AS WE WERE REWRITING OUR CURRICULA FOR OUR STANDARDS TO START WITH THE ELEMENTARY STUDENTS AT THE CENTER SO WE WILL BE PILOTING THIS IN TEN SCHOOLS MIXTURE WITH GREAT LEADERS, GREAT TEACHERS AND A GREAT COMMUNITY AND THE INTERESTING PART IS WE DID NOT PICK THE SCHOOLS OUT OF THE HAT THEY HAVE TO APPLY AND YOU HAD TO HAVE 80 PERCENT OF YOUR TEACHER SUPPORT AND THE PRINCIPAL HAD TO HAVE THE SUPPORT AND THE COMMUNITY HAD TO VOTE IN TERMS OF THE SUPPORT NEEDED FOR IT.

WE KNOW IT'S IMPORTANT BECAUSE AS WE SCALE THIS UP WE HAVE TO MAKE SURE WE BUILD THE CASE.

I TALK TO PEOPLE ALL THE TIME THAT SAY I LEARNED WITH THE TEXTBOOK, WHY CAN'T THEY SO WE START THINK ABOUT OUR YOUNG PEOPLE AND IT'S THE WHOLE IDEA AROUND PERSONALIZING THE EXPERIENCE IN THE WHOLE IDEA AROUND ENGAGING THEM WHICH WE KNOW WILL LEAD TO HIGHER STUDENT ACHIEVEMENT OUTCOMES BUT IT'S ALSO ABOUT MAKING SURE THEY HAVE ACCESS TO INFORMATION AND WHEN YOU GO IN THE CLASSROOMS EVERY DAY IF THE TEACHER WERE TO SAY WHAT'S THE CAPITAL OF MARYLAND A STUDENT WILL GOOGLE THAT ON HIS OR HER PHONE ALREADY WHETHER THEY HAVE THE EQUIPMENT OR NOT SO HOW DO WE THEN USE THE TEACHER'S TIME AND OUR TIME WITH KIDS, WHICH WE KNOW IS LIMITED TO TALK ABOUT HOW TO MAKE THAT RELEVANT FOR WHAT THEY NEED FOR THEIR FUTURE.

WE ALSO KNOW AS WE LOOK AT THIS WE WILL HAVE TO EVALUATE IT AND WE ARE WORKING RIGHT NOW I'M PARTNERING WITH JOHN HOPKINS UNIVERSITY TO PUT TOGETHER THE FRAMEWORK THAT'S BUILT WITH TEACHER OUTCOMES AND STUDENT OUTCOMES THAT IS FROM OUR GOAL OF PREPARING GLOBALLY COMPETITIVE GRADUATES.

WE KNOW AT THE END OF THE DAY IT'S ALL ABOUT MAKING SURE TO GET ACCESS AN OPPORTUNITY FOR YOUNG PEOPLE SO WE WERE EXCITED TO HEAR THE FACT THAT WE ARE LOOKING AT MODERNIZING THE E-RATE PROGRAM BECAUSE HAVING SERVED IN A RURAL, URBAN AND SUBURBAN SYSTEM I KNOW WHAT EXIST WITH REFOCUSING THE CONVERSATION AROUND SPEED AND ALSO STREAMLINING THE PROCESS BECAUSE HAVING BEEN AN ASSISTANT SUPERINTENDENT IN A SMALL URBAN DISTRICT IT WAS SO TIME-CONSUMING TO GO THROUGH THE PROCESS TO APPLY THAT YOU SAID FORGET ABOUT IT AND THAT SHOULD NEVER BE THE CASE IT SHOULD ALWAYS BE THAT WE PUT OUR STUDENTS ON A LEVEL PLAYING FIELD REGARDLESS OF WHERE YOU ARE ACROSS THE COUNTRY SO I KNOW WE HAVE AN AMBITIOUS GOAL OF 99 PERCENT BUT I PUSH AND WE SEE AN EDUCATION IF 1 PERCENT IS NOT GRADUATING THAT SOMEBODY'S CHILD.

THAT IS SOMEONE'S FACE THAT GOES TO THAT 1 PERCENT AND HOW DO WE EXPAND THE CONVERSATION TO MAKE SURE THAT 100 PERCENT OF OUR STUDENTS HAVE ACCESS AN OPPORTUNITY TO HIGH-QUALITY DIGITAL CONTENT THAT LEADS TO PERSONALIZATION AND ENGAGEMENT WHICH LEADS TO THE EDUCATIONAL OUTCOMES WE EXPECT FOR YOUNG PEOPLE.

AND THE REALITY IS WHEN FOLKS TALK ABOUT THE FUNDING OF IT AND HOW MUCH IT COST, AS A COUNTRY WE HAVE TO REALIZE WE WILL EITHER PAY FOR IT NOW OR LATER. THE QUESTION IS HOW DO WE PUT THE CONVERSATION TOWARD PAYING FOR IT NOW SO WE WON'T BE IN A DETRIMENTAL STATE LATER ON.

THANK YOU FOR THE OPPORTUNITY TO BE HERE.

[APPLAUSE]

>>: THANK YOU TWO MEMBERS OF THE PANEL.

WE HAVE ABOUT 15 MINUTES LEFT IN WHAT I WOULD LIKE TO DO WE HAVE AN OPPORTUNITY TO OPEN UP FOR QUESTIONS.

WHILE YOU THINK ABOUT YOUR QUESTIONS I WILL TAKE ADVANTAGE OF THE FACT THAT I HAVE A MICROPHONE IN FRONT OF ME SO I WILL ASK ONE QUESTION TO THE PANEL AND ALSO THE COMMISSIONER BUT WE WILL KEEP THE QUICK RESPONSES BECAUSE I WANT TO MAKE SURE WE HEAR FROM EVERYBODY SO THINK ABOUT WHAT YOU WANT TO ASK THERE'S A MICROPHONE WHEN YOU ARE READY.

SO AS I LISTEN TO THE COMMENTS THAT I HEAR IT STRUCK ME HOW MUCH EACH OF YOU HAVE LEARNED ALONG THE WAY, HOW MUCH YOU HAVE FIGURED OUT ALL OF THE EXAMPLES YOU GAVE AND AS THE CHANGES TO E-RATE ARE ROLLING OUT I'M CONVINCED THAT A LOT MORE PEOPLE ARE GOING TO COME TO BE PART OF THE CONVERSATION THAT HAVE NOT BEEN PART OF IT BEFORE SO I'D LOVE FOR YOU IF YOU HAVE A CONCISE ANSWER ON WHAT WOULD YOU TELL PEOPLE COMING TO THE TABLE THAT YOU HAVE LEARNED ALONG THE WAY THAT YOU WOULD LOVE TO PASS ON AND SAY LEARN FROM ME, THINK ABOUT THIS EARLY ON. TAKE A TURN AND RESPOND TO WHAT DO YOU THINK ABOUT THAT.

>>: I WOULD SAY THE MOST IMPORTANT BIG IDEA FOR ME HAS

BEEN THE IMPORTANCE OF
SCHOOLS LOOKING LIKE REAL
WORKPLACES IN TERMS OF THE
WAY TECHNOLOGY IS USED.

IT SHOULD LOOK LIKE HOW WE USE TECHNOLOGY ON AN EVERYDAY BASIS IN AUTHENTIC
WORK WITH THE SCHOOLS IN A REAL WORK SETTING.

>>: FOR ME IN A LIBRARY
ENVIRONMENT IT'S REALLY LETTING
YOUR COMMUNITY GUIDE YOU.

LET IT BE AN ORGANIC PROCESS SO EVEN THOUGH YOU ARE TAKING CARE OF ALL THE
INFRASTRUCTURE, THE DEVELOPMENT LIKE THE FOURTH FLOOR AND OF THE MAKERS SPACE
ALLOWING PEOPLE TO BE CREATIVE AND EXPERIMENT, DON'T STRUCTURE THAT.
LET YOUR COMMUNITY DO THAT FOR YOU AND MAKE IT A REALLY ORGANIC PROCESS AND
THAT MEANS YOU WILL HAVE TO LET GO OF SOME CONTROL.

>>: THANK YOU.

>>: FOR US AS WE WERE THINKING
ABOUT THIS WHAT WE REALLY
LEARNED AND WERE SHOCKED BY
IS HOW MANY OF OUR TRIBAL
COLLEGES AND UNIVERSITIES,
LIBRARY AND EDUCATION
DEPARTMENTS HAVE NOT TRIED OR
ATTEMPTED THIS BECAUSE THEY
ARE OVERWHELMED BY THE
PROCESS AND TO SO THERE ARE
THAT MANY FURTHER STEPS
BEHIND.

WE REALLY THOUGHT MORE OF OUR LABORS WOULD BE ENGAGED THAN THEY ARE.

>>: I WOULD JUST ADD THE POWER
OF PLANNING.

FOR FOLKS WHO AUTOMATICALLY THINK DEVICES, THAT'S THE WRONG WAY TO THINK ABOUT
IT.

INFRASTRUCTURE IS IMPORTANT AND WE ARE WORKING ON THAT BUT YOU HAVE TO PLAN SO
FOR 18 MONTHS WE WENT THROUGH A PLANNING PROCESS BUILDING A CASE BECAUSE IF
YOU DON'T ADEQUATELY PLAN YOU WILL LEAD TO FAILURE.

>>: THANK YOU.

AND A QUESTION FOR COMMISSIONER ROSEWORCEL IS AS YOU TALK ABOUT THE
IMPORTANCE OF ENGAGING AND YOU TALKED ABOUT THE PIECES OF THINGS YOU WOULD
LIKE TO CHANGE IN E-RATE, WE ARE LARGELY TALKING TO PEOPLE WHAT -- TO UNDERSTAND
WHAT THE RADIUS AND THAT OF YOUR THOUGHTS ON WHO SHOULD WE BRING TO THIS
CONVERSATION WHO'S NOT HERE AND WHAT WOULD YOU SAY TO SOMEBODY WHO DOES
NOT ALREADY UNDERSTAND WHAT E-RATE IS TO SAVE YOU KNOW, YOU NEED TO BE
INVOLVED IN WHY THIS IS IMPORTANT.

I'D LOVE YOUR THOUGHTS FOR US ON THAT.

>>: ONE OF THE LITTLE KNOWN

FACTS ABOUT E-RATE IS IF THE NATION'S LARGEST EDUCATION TECHNOLOGY PROGRAM.

IT'S THE BIGGEST.

AND IT'S RUN BY US HERE AT THE FCC.

THAT'S A REALLY POWERFUL THING.

AND I THINK IT SHOULD HAVE MORE ATTENTION IN THE MINDS OF PARENTS AND LIBRARY PATRONS, AS A RESULT.

BUT I ALSO THINK THE MORE POWERFUL THING PARTICULARLY IN A SCHOOL SETTING IS TO LOOK AT YOUR CHILDREN AND GET BEYOND THE IDEA THAT A BOOK WAS GOOD ENOUGH FOR ME SO WHY SHOULDN'T IT BE GOOD ENOUGH FOR THEM BECAUSE RIGHT NOW HALF OF THE JOBS IN THE NEW ECONOMY REQUIRE SOME LEVEL OF DIGITAL SKILLS.

BY THE END OF THE DECADE THAT NUMBER IS GOING TO BE 77 PERCENT.

IF WE EXPECT OUR CHILDREN TO BE SUCCESSFUL WE CANNOT STRAND THEM IN CLASSROOMS THAT WERE DEVELOPED FOR INDUSTRIAL AGE ECONOMY.

IT'S TIME TO PREPARE THEM FOR THE DIGITAL AGE AND THE FACT THAT WE HAVE THIS PROGRAM AND CONGRESS AUTHORIZED US TO USE IT MEANS WE SHOULD SEIZE THIS OPPORTUNITY RIGHT NOW.

IT'S BEEN A GOOD PROGRAM AND GOOD PROGRAMS DON'T THRIVE WITHOUT CONTINUOUS ATTENTION AND CARE AND IT'S TIME FOR A LITTLE REINVENTION AND THE ENTHUSIASM IN THIS ROOM AND THE ENTHUSIASM I HAVE AND JUST ABOUT EVERYONE SITTING DOWN THIS LINE HAVE, I HOPE WE CAN FIND A WAY TO SEIZE THAT TO DO SOMETHING EFFECTIVE.

>>: BUILDING ON THE COMMISSIONER'S REMARKS, A QUESTION FOR ALL OF YOU, WHICH IS WE ARE GOING TO WORK ON LAYING THE FOUNDATION HERE.

THAT IS OUR JOB AT E-RATE, BUT AS WE'VE TALKED ABOUT, THIS IS AN ECOSYSTEM AND WE HAVE TO BRING ALL THE PIECES TO THE TABLE TO MAKE IT WORK.

AS YOU'VE BUILT SOME OF THE AMAZING THINGS THAT YOU'VE JUST WALKED US THROUGH, HOW DID YOU MOBILIZE OTHER RESOURCE ISSUE HAVE TO BRING, E-RATE PROVIDES ONE PIECE BUT THERE'S A LOCAL MATCH, YOU HAVE TO BRING DEVICES, HOW DID YOU PUT THAT WHOLE PICTURE IN PLACE?

TRAINING --

>>: I THINK A KEY STRATEGY FOR US IN TERMS OF LEVERAGING RESOURCES AND EARNING LOCAL SUPPORT FOR FUNDING BECAUSE ABOUT 46 PERCENT OF OUR BUDGET COMES FROM OUR LOCALITY, IS REALLY CONNECTING WITH THE COMMUNITY IN TERMS OF WHETHER IT'S EXHIBITIONS OF STUDENT WORK, WHETHER IT'S STUDENTS COLLABORATING WITH

PARTNERS IN THE COMMUNITIES.

SO FOR EXAMPLE, STUDENT BOOKS BEING AVAILABLE AT THE LIBRARY IN ADDITION TO BEING POSTED ONLINE.

AND PARTNERING TO SERVE ORGANIZATIONS THAT HAVE REAL WORLD PROBLEMS SO WHEN THE COMMUNITY SEES THAT THE REACTION MAY BE WE DID NOT HAVE THIS IN SCHOOLS AND WHEN THEY SEE THE REAL WORK, WHEN THEY SEE HOW EXCITED KIDS DID ABOUT THAT AND THEY SOLD DOG BISCUITS, AND THEY WERE SO EXCITED ABOUT ESTIMATING AND SUPPORTING BY TEN SO LEARNING THE CURRICULUM AND SO TO A GRANDPARENT THAT DOES NOT UNDERSTAND THE TECHNOLOGY AND CONNECTIVITY THEY UNDERSTAND THEIR FIRST-GRADERS ENTHUSIASM AND UNDERSTAND THE POWER OF LEARNING THAT COMES FROM THAT ENTHUSIASM.

>>: WHEN I STARTED BRINGING THIS INTO CHATTANOOGA PUBLIC LIBRARY I HAD TO MAKE REALLY DIFFICULT DECISIONS ABOUT MY BUDGET.

I HAD TO COME UP WITH THE MONEY TO DO THIS.

NO ONE SAID HERE IS A LITTLE EXTRA CASH.

SO I'VE MADE SOME PRETTY GREAT EFFICIENCIES AND I'VE MADE SOME REALLY DIFFICULT DECISIONS ABOUT WHAT WE WERE GOING TO DO BECAUSE I REALLY FELT IT WAS CRITICAL TO OUR OPERATIONS.

SO THAT WAS THE FIRST PART.

WHEN I CAME TO THE STAFF, THEY WERE ALREADY DELIVERING PUBLIC ACCESS COMPUTING TO THE PUBLIC.

AND IT WAS BAD.

SO THERE IS NOTHING LIKE IMPROVING THE DELIVERY MECHANISM TO GET THAT STAFF BEHIND IT.

BECAUSE ALL OF A SUDDEN THEIR JOBS ARE THAT MUCH EASIER AND THE PUBLIC WAS REALLY HAPPY BECAUSE THEIR LIVES WERE BETTER.

INSTEAD OF TAKING TWO HOURS TO SEND AN E-MAIL TO FAMILY, THEY WERE DOING IT IN 15 MINUTES AND WORK IN AND OUT.

SOMETIMES IT'S THE DEMONSTRATION OF IT BUT PAYING FOR IT WAS A BIG CHALLENGE FOR ME AND I MADE SOME REALLY UNPOPULAR DECISIONS WITH MY STAFF ABOUT FUNDING SO WE COULD PAY FOR IT.

>>: BUSINESS.

>>: SO THAT LEADS TO A BIGGER PROBLEM FOR INDIAN COUNTRY.

IF YOU THINK ABOUT OUR TRIBES IN SCHOOLS IS A BIGGER CHALLENGE, BUT BEING ABLE TO PULL TOGETHER A CONSORTIUM AND ALLOWING TRIBES FROM ACROSS THE NATION TO WEIGH IN AND ASSIST ONE ANOTHER WOULD BE INCREDIBLY VALUABLE.

OUR STUDENTS ARE DESPERATE FOR THIS BECAUSE FOR US TO BE ABLE TO CONNECT ACROSS THE NATION AND SHARE THOSE EXPERIENCES WITH ONE ANOTHER WHILE WE ARE UNIQUE OUR CHILDREN ARE FACING SIMILAR CHALLENGES SO TO KNOW THAT SOMEBODY IN THE BOTTOM OF THE GRAND CANYON IS FACING THE SAME CHALLENGES AS SOMEONE IN MAINE, TO CONNECT THAT WAY AND THEN TO THINK ABOUT WHAT THEIR VALUE IS

INTERNATIONALLY BECAUSE OUR TRIBES ARE POSITIONING THEMSELVES AS GLOBAL LEADERS IN SOME ECONOMIES WITHIN OUR STATES.

SO SOME TRIBES ARE ABSOLUTELY ABLE TO START ACCESSING THAT BUT RIGHT NOW FROM WHAT I UNDERSTAND ABOUT THE APPLICATION, THEY ARE NOT ABLE TO ASSIST IN THE WAY THEY WANT BECAUSE SO MUCH IS RUN THROUGH THE STATES SO WE WOULD LIKE TO SEE THAT EXPANDED OPPORTUNITY.

>>: VERY, VERY QUICKLY
WONDERFUL I WE -- IDEA AROUND
COMMUNITY AWARENESS.

SO YOU REALIZE IN THE ROLE OF A SUPERINTENDENT YOU ARE A CHEERLEADER BUT A SALESPERSON AS WELL AND YOU HAVE TO SELL THE CASE FOR WHY THIS IS THE BEST APPROACH FOR YOUNG PEOPLE AND THE BEST WAY TO DO THAT IS THROUGH YOUNG PEOPLE AND THE OTHER THING IS THE POWER OF THE BUDGET AND GOING LINE BY LINE TO SAY WHAT ARE WE SPENDING OUR DOLLARS ON AND WHAT'S THE RETURN ON THE INVESTMENT WE'VE GOTTEN BY DOING SOMETHING EVERY SINGLE YEAR.

SO WE ARE MAKING HARD DECISIONS RIGHT NOW THAT RUFFLE A FEW FEATHERS BUT WE REALIZE IF WE KEEP OUR EYE ON THE GOAL WE WILL REACH EXACTLY WHAT WE WANT TO DO SO WE HAVE BEEN TRYING TO THINK THROUGH THIS IDEA OF THE POWER OF PURCHASING THROUGH CONSORTIUM IN BEING ABLE TO SAY THE BUYING POWER OF A SCHOOL SYSTEM AS OPPOSED TO INDIVIDUAL SCHOOLS, HOW DO WE GET A BIGGER RETURN ON THAT SO WE'VE TALKED WITH SCHOOL SYSTEMS ACROSS MARYLAND AND THE COUNTRY ABOUT HOW DO WE DO THAT.

>>: EXCELLENT.

TELL US WHO YOU ARE BEFORE YOUR QUESTIONS.

>>: MY NAME IS ROBERT ON WITH
THE RURAL SCHOOL AND
COMMUNITY TRUST AND THE
PRESIDENT OF ORGANIZATIONS
CONCERNED ABOUT RURAL
EDUCATION.

GREAT PANEL AND COMMISSIONER, HATS OFF TO YOU ALWAYS WITH WHAT YOU ARE DOING SUCH IMPORTANT WORK.

ONE OF OUR CONCERNS AROUND E-RATE REFORM ALONG WITH REFINING THE APPLICATION PROCESS AND EVERYTHING YOU RAISED IS THE ISSUE OF PORTABILITY OF FUNDING. THE IMPACT OF MOVING FUNDS AROUND PARTICULARLY IS VERY MOBILE STUDENT POPULATIONS.

THE IMPACT THAT WOULD HAVE ON BEING ABLE TO MULTIYEAR PLAN, SMART USES OF RESOURCES SO I WOULD APPRECIATE THE COMMISSIONERS, I KNOW YOUR POSITION ON THIS AND ENDORSE IT STRONGLY BUT ALSO FROM ALL OF YOUR COMMUNITIES, PARTICULARLY IN INDIAN COUNTRY, THE PORTABILITY ISSUE THAT SMALL RURAL DISTRICTS, IT'S CRITICALLY IMPORTANT ISSUE FOR US AND I REALLY APPRECIATE YOUR INSIGHTS. THANK YOU.

>>: IT'S KIND OF AN ODD CONCEPT
TO THINK ABOUT PORTABILITY
WITHIN INDIAN COUNTRY BECAUSE

PEOPLE THINK WE ARE STATIC,
WHERE YOU LIVE IS WHERE YOU
LIVE AND THAT'S NOT THE CASE WE
ARE ONE OF THE MOST MOBILE
POPULATIONS IN THE COUNTRY WE
MOVE BACK AND FORTH
FREQUENTLY NOT ONLY FOR
CEREMONIES, BUT INTO OUR
HOMELAND FOR CEREMONIES AND
INTO URBAN AREAS TO WORK AND
WE FOLLOW MIGRANT PATTERNS
WITH WORK AND THEN ALSO IF YOU
THINK ABOUT OUR SCHOOLS AND
THIS IS SPECIFICALLY GETTING TO
THE ISSUE WITH IN ONE LAND
STRUCTURE WE CAN HAVE 6-7
SCHOOL SYSTEMS OPERATING
INDEPENDENTLY AND OFTEN TIMES
NOT TALKING TO ONE ANOTHER.

WITH TRIBAL SCHOOLS OPERATED BY THE TRIBES, BUREAU OF INDIAN EDUCATION SCHOOLS,
PUBLIC SCHOOLS RUN BY THE STATE, CHARTER SCHOOLS, WHICH WHO KNOWS THEY MIGHT
BE OPERATED BY AN THAN PAROCHIAL SCHOOLS.

AND NONE OF THOSE SCHOOL SYSTEMS ARE TALKING TO ANOTHER AND THEY DON'T USE
THE SAME SYSTEM SO WE FREQUENTLY DON'T KNOW WHERE THE SCHOOLS ARE OR HOW
THEY ARE PERFORMING.

AND, YOU KNOW, YOU CAN MOVE BECAUSE YOU GET MAD AT THE NEW SUPERINTENDENT
AND YOU DON'T WANT TO BE THERE.

YOU CAN MOVE BECAUSE MOM AND DAD MIGHT HAVE CHANGED OR MOVED ACROSS THE
CITY LINE AND KEEPING THE PORTABILITY IN MIND FOR INDIAN COUNTRY IS GOING TO BE
CRITICALLY IMPORTANT AND ABSOLUTELY SOMETHING WE INCLUDE IT WITHIN OUR
COMMENTS AND WE ARE HAPPY TO TALK ABOUT THAT SO THANK YOU FOR BRINGING THAT
UP.

>>: I HAVE SAID REPEATEDLY AND I
CONTINUE TO BELIEVE THAT
MULTIYEAR APPLICATIONS ARE A
GOOD IDEA.

I GIVE YOU TWO REASONS, BUT I COULD GIVE YOU TEN.

FIRST REASON IS TO GIVE YOU THE ABILITY TO PLAN.

IF YOU TOOK ANYTHING AWAY FROM THE WORK THESE PEOPLE ARE DOING HERE TODAY IT'S
THAT PLANNING FOR THIS TRANSITION TO DIGITAL LIBRARIES AND DIGITAL SCHOOLS TAKES
SOME EFFORT AND STRATEGIC FORESIGHT.

I THINK OUR PROCESS SHOULD WORK WITH THEIR PLANNING.

SECOND, IT'S THE ISSUE OF STREAMLINING.

WE HAVE TO CUT THE ADMINISTRATIVE COSTS OF THIS PROGRAM DOWN AND CERTAINLY WE
COULD COME THROUGH OUR RULES AND TIDY UP THE RULE HERE OR THERE AND TRY TO

MAKE A LITTLE PROCESS EASIER OR CUT DOWN ON THE TIME THAT THE AGENCY MIGHT REVIEW SOMETHING BUT THE SIMPLEST THING TO DO IS TO SAY LET'S HAVE APPLICATIONS EVERY OTHER YEAR.

BECAUSE IN ONE FELL SWOOP WE'VE CUT THE ADMINISTRATIVE COST OF PARTICIPATING IN THIS PROGRAM IN HALF.

SO IT'S SOMETHING I HOPE WE CAN TAKE A LOOK AT BECAUSE I THINK IT WOULD REALLY BE HELPFUL BECAUSE IN THE END I DON'T WANT THIS PROGRAM TO BE ABOUT LEGAL POLICIES OR CONSULTANT WORK AROUND IT.

I WANT IT TO BE AROUND BANDWIDTH TO SCHOOLS AND LIBRARIES FOR LEARNING.

>>: WE HAVE TIME FOR ONE MORE QUESTION.

>>: FROM THE TENNESSEE E-RATE COORDINATOR I DON'T HAVE A QUESTION, BUT I HAVE A COMMENT, CORINNE, YOU ARE AWESOME.

DOCTOR DAN'S, YOU'VE COMMENTED ABOUT YOUR FOUR-YEAR-OLD PICKING UP THE DEVICE AND LEARNING IMMEDIATELY AND THEIR -- THEY ARE LIKE LITTLE SPLENDID SPONGES AND IT GOES TO WHAT YOU FOLLOWED WITH COMMISSIONER ROSENWORCEL AND IN TENNESSEE FOR EXAMPLE, PRE- K. STUDENTS ARE NOT ELIGIBLE FOR E-RATE DISCOUNTS BECAUSE OF A GLITCH IN THE LANGUAGE THAT DESIGNATES WHETHER OR NOT A PRE- K. STUDENT IS LEARNING ANYTHING.

AND IT'S JUST A LANGUAGE THING SO IF WE WERE ABLE TO DO AWAY WITH THAT MESSY LITTLE COST ALLOCATION AND A KID IS A KID IS A KIT THAT IS LEARNING AND THEY SHOULD ALL HAVE ACCESS WHETHER THEY ARE ADDRESSED PROPERLY FOR FORMALLY IN THE STATUTES THAT IS REALLY WHAT THE COMMENT WAS.

IT'S IMPORTANT THAT OUR PRE- K. STUDENTS ARE ABLE TO HAVE ACCESS TO THIS DIGITAL LITERACY BECAUSE THAT IS WHERE THEY START.

THAT IS WHERE THE SEED IS PLANTED AND WE HAVE TO GROW THE PLANT.

SO THANK YOU.

>>: SINCE THAT WAS NOT A QUESTION I WILL RESPOND IT'S A GREAT IDEA, WE AGREE.

THERE'S SOME GOOD ONGOING CONVERSATION WE'VE BEEN HAVING WITH THE FOLKS AT THE FCC BUT ALSO WITH OUR HHS, DEPARTMENT OF HEALTH AND HUMAN SERVICES ABOUT HOW MAKING SURE THERE IS SUPPORT FOR CHILDREN THAT ARE YOUNGER EVEN THEN KINDERGARTEN.

SO THANK YOU FOR YOUR CONCERN.

I WOULD LOVE TO ASK YOU TO GIVE A HUGE HAND FOR THE PARTICIPANTS OF OUR PANEL AND THANK YOU FOR BEING HERE.

[APPLAUSE]

AND THANK ALL OF YOU FOR PARTICIPATING TODAY AS WE TRANSITION I LEAVE WITH A FINAL THOUGHT THAT THIS IS A GREAT OPPORTUNITY AND A CHANCE WE HAVE TO TRANSFORM LEARNING AND IF WE END OF DIGITIZING TRADITIONAL PRACTICE WE WILL HAVE MISSED A ONCE IN A GENERATION OPPORTUNITY BUT IF WE USE THIS AS A CHANCE TO RETHINK AND REINVENT AND REIMAGINE LEARNING WE WILL ALL LOOK BACK AS THIS IS ONE OF THE MOST

IMPORTANT THINGS THAT HAPPENED IN OUR LIFETIME CONCERNING EDUCATION.
THANK YOU VERY MUCH.

>>: THANK YOU, RICHARD.

COMMISSIONER AND ALL THE OTHER PANELISTS.

IF I COULD HAVE ALL OF THE PARTICIPANTS FOR THE ROUNDTABLE GATHER AT YOUR SPOTS,
THAT WOULD BE FANTASTIC.

>>: WE ARE GOING TO GO AHEAD
AND START THE ROUNDTABLE
DISCUSSION IF FOLKS COULD TAKE
A SEAT OR TAKE THE
CONVERSATIONS OUT OF THE
ROOM.

GREAT.

THANK YOU.

SO I COULD GO ON FOR A LONG TIME IF I INTRODUCED EVERYBODY ON THIS PANEL AND GAVE
YOU THEIR ENTIRE RESUME, WHICH EVERYONE OF THEM IS QUITE IMPRESSIVE.

I WANT TO INTRODUCE EVERYBODY BY NAME SO YOU THE SENSE OF WHO'S SITTING AROUND
THE TABLE.

WE WILL SPEND THE NEXT HOUR OR SO AND GO INTO LUNCH A LITTLE BIT SO WE GET FULL
DISCUSSION TALKING ABOUT THE NEEDS TO MODERNIZE CONNECTIVITY WITHIN THE WALLS
OF SCHOOLS AND LIBRARIES TAKING SURE EVERYBODY HAS ACCESS TO THAT HIGH
CAPACITY WIRELESS CONNECTIVITY THAT WE'VE HEARD ABOUT THIS MORNING.

WE WILL TAKE A BREAK FOR LUNCH.

LUNCHES ON YOUR OWN.

KEEP IN MIND IF YOU LEAVE THE BUILDING AND GO TO THE CAFETERIA YOU HAVE TO GO
BACK INTO THE MAIN ENTRANCE.

WE WILL TRY TO START ON TIME MAYBE FIVE AFTER ONE TO GET STARTED IN THE
AFTERNOON.

FOR THE REST OF THE DAY YOU WILL HEAR FROM THE FOLLOWING EXPERT LEADERS IN THE
EDUCATION AND LIBRARY SPACE IN ADDITION TO THE STAFF I'VE MENTIONED.

STACEY ALDRICH DEPUTY SECRETARY FOR THE OFFICE OF WIPERS FOR PENNSYLVANIA
DEPARTMENT OF EDUCATION, EMILY ALLMAN, KEEP -- KEITH BOCKWOLDT.

IN ARLINGTON HEIGHTS ILLINOIS, PHIL DIEMER DIRECTOR OF TECHNOLOGY PLANNING AND
POLICY FOR THE FRIDAY INSTITUTE FOR EDUCATIONAL INNOVATION, RICK EVERETT,
PROGRAM COORDINATION FOR THE PANHANDLE AREA EDUCATION CONSORTIUM, JOE
FREDDOSO, PRESIDENT AND CEO OF MCNC, JENNIFER GARDNER DIRECTOR OF I.T. FINANCE
AND SUBSIDIES FOR THE SCHOOL DISTRICT OF PHILADELPHIA, WILL GOODMAN DIRECTOR OF
TECHNOLOGY FOR THE MOUNTAIN HOME SCHOOL DISTRICT IN IDAHO, DAVID LEONARD
DIRECTOR OF ADMINISTRATION AND CTO FOR BOSTON PUBLIC LIBRARY, JEFF LETOURNEAU,
EXECUTIVE DIRECTOR OF NETWORKING, EVAN MARWELL, ADD -- ED MCKAVENEY, GARY
ROSSUM FEDERAL PROGRAMS COORDINATOR FOR THE MISSISSIPPI DEPARTMENT OF
EDUCATION AND SERVICES AND LAST, BUT NOT LEAST ROBERT SWIGGUM WHOSE THE CIO
FOR THE GEORGIA DEPARTMENT OF EDUCATION.

WE APPRECIATE YOU ALL BEING HERE AND LOOK FORWARD TO A ROBUST AND OPEN

DIALOGUE AND THAT'S THE PURPOSE TO HAVE A CONVERSATION ABOUT IMPORTANT ISSUES RELATED TO CONNECTIVITY TO SCHOOLS AND WITHIN SCHOOLS, WHICH WE WILL DO FOR THE REST OF THE AFTERNOON AGAIN YOU CAN PARTICIPATE BY COMING TO THE MICROPHONE AT THE APPROPRIATE TIMES AND LET THE DISCUSSION GERMINATE A LITTLE BIT AND THEN ALSO LIVE QUESTIONS AT FCC.GOV OR #E-RATE MODERNIZATION.

I'LL TURN IT OVER TO CHAS EVERLY OF THE FCC.

>>: THANK YOU AND WELCOME

TOUR EXPERTS ROUNDTABLE.

ONE THING I LEARNED YESTERDAY IS WE WILL BE ABLE TO KEEP THIS GOING IS THE TENT CARD RULE AS WE ARE LOOKING FOR THIS CONVERSATION WHEN YOU WANT TO SPEAK JUST DO THAT AND WE WILL BE SURE EVERYBODY GETS AN INPUT AS THE CONVERSATION MOVES FORWARD.

THE PRESENTATIONS WE JUST SAW DEMONSTRATED THE POTENTIAL OF DIGITAL EDUCATION FOR SCHOOLS AND LIBRARIES HOWEVER, WE ALL KNOW THAT TO UTILIZE THAT THEY NEED LOCAL AREA NETWORKS CAPABLE OF DELIVERING WI-FI TO EVERY STUDENT, TEACHER AND DEVICE.

YOU HEARD THE CHAIRMAN IN HIS OPENING REMARKS TALK ABOUT WHY BROADBAND TO THE INDIVIDUAL.

THE RECORD IN OUR RULEMAKING SHOWS SCHOOLS AND LIBRARIES RECOGNIZE THE IMPORTANCE OF WIFI AND ARE WORKING TIRELESSLY TO UPGRADE EXISTING CAPABILITIES AND DEPLOY WI-FI TO FACILITIES THAT CURRENTLY LACK COVERAGE.

THE RECORD ALSO SHOWS DISTRICTS ARE STRUGGLING TO KEEP PACE WITH THE EXPLODING WI-FI DEMAND DUE TO A RANGE OF FACTORS, FUNDING AND COSTING THE SINGLE BIGGEST.

WE'VE REACHED OUT TO SCHOOL DISTRICTS, STATE AGENCIES AND LIBRARIES TO LEARN MORE ABOUT WI-FI DEMAND, THE CAUSE OF UPGRADING AND DIFFERENT APPROACHES TO PLANNING, PURCHASING AND MANAGING WIRELESS LOCAL AREA NETWORKS.

OUR GOAL IS TO LEARN FROM THE EXPERIENCE OF THIS GREAT GROUP OF SPEAKERS, IDENTIFY THE BEST PRACTICES FOR PROVIDING HIGH CAPACITY COST EFFECTIVE WI-FI. THE PEOPLE AROUND THIS TABLE KNOW THE SUBJECT VERY WELL EMILY WE LOOK FORWARD TO AN INFORMATIVE AND LIVELY CONVERSATION.

I'LL START THINGS OFF BY TURNING TO PHIL EMER OF THE FRIDAY INSTITUTE OF NORTH CAROLINA STATE INSTITUTE.

HE IS EXPENSIVE EXPERIENCE WITH SCHOOL NETWORKING AND HAS WORKED ON PROJECTS IN NORTH CAROLINA.

COULD YOU PLEASE DESCRIBE YOUR EXPERIENCE IN NORTH CAROLINA AND THE LESSONS LEARNED ABOUT WIFI DEMAND, DEPLOYMENT COSTS AND BEST PRACTICES.

>>: SO FIRST I WOULD SAY WE STARTED A SCHOOL CONDUCTIVITY INITIATIVE ABOUT 2006, WHICH IS ABOUT BRINGING CONNECTIVITY TO THE SCHOOLS SO WE DID A LOT OF PLANNING, CONSORTIUM BUYING AND ONE OF THE MOST IMPORTANT THINGS WE DID WAS HAD AN

ENGINEERING SUPPORT CENTER
THAT WE BUILT TO BE ABLE TO
SUSTAIN THE OPERATION.

ONE OF THE KEY THINGS THEY FIND IS THAT IT ENGAGES WITH THE SCHOOL DISTRICT IS WIRELESS IS A HUGE ISSUE SO WE GET ENGAGED ALL THE TIME TO ASSESS THE NETWORK INFRASTRUCTURE AND DO SOME WIRELESS DESIGN.

AT THE SAME TIME, WE WANT A RACE TO THE TOP GRANT AND 70 PERCENT OF THE DOLLARS ARE SPENT ON WIRELESS INFRASTRUCTURE SO WE BUILT ESSENTIALLY A SPEC FOR HOW IT IS YOU CAN DESIGN A COMPLETE ENTERPRISE CLASS WIRELESS INFRASTRUCTURE SO EVERYTHING FROM WHAT IT IS THE SITE SURVEY YOU HAVE TO DO IN THE INITIAL DESIGN, THE WIRE POLE, THE TERMINATION WIRES AND THE INSTALLATION OF ACCESS POINTS, THE INFRASTRUCTURE THAT SUPPORTS THAT, WIRELESS CONTROLLERS AND EVEN THE MEASUREMENT AND MONITORING CAPABILITIES TO TROUBLESHOOT AND MONITOR THE WIRELESS INFRASTRUCTURE.

ALL OF THAT WAS BAKED INTO A BUDGET AND TURNED INTO A PER CLASSROOM KIND OF COST.

SO A COUPLE OF THINGS THAT WERE VERY IMPORTANT, ONE IS THIS INSTALL THAT THE INSTALL COST IS OFTEN WAY MORE THAN FOLKS BUDGET.

A NORMAL DROP, IT'S FIVE OR \$600 A DROP JUST TO SORT OF DEPLOY THE WIRED INFRASTRUCTURE ON BOTH SIDES.

SO THIS IS WITH CABLED NOT IN CONDUIT OR ANYTHING SO IT'S AN IMPORTANT PART AND NOT JUST BECAUSE BUT ACTUALLY THE PERFORMANCE OF THE INSTALLATION.

THERE IS A WHOLE LOT OF VARIABILITY IN TERMS OF HOW THE INSTALLATION GOES BASED ON WHO INSTALLS THE.

THERE ARE GOOD STANDARDS TO DEFINE THAT BUT ACTUALLY HAVING A STANDARD THAT FOLKS FOLLOW AND A SET OF DEPLOYMENT AGENCIES THAT CAN DO IT IS IMPORTANT.

THE LAST THING I WILL MENTION IS COSTING WISE, ARE BUDGETED COST TO PUT ALL OF THAT TOGETHER WITH SOME WERE OF THE 2200-2,500-DOLLAR CLASSROOM RANGE.

WHEN WE LOOK AT ACTUAL COST OF DEPLOYMENT IT'S HARD TO DO APPLES TO APPLES BECAUSE NO ONE DOES EVERYTHING IN THE SPEC BUT WE ARE SEEING \$1,200, \$1,500 OFTEN CLOSE TO \$2,000 PER CLASSROOM AND THAT IS BASED ON WHAT WE WOULD CALL A BASE DANCE DIGITAL LEARNING DEPLOYMENT WHERE THAT IS DEFINED CURRENTLY IS PER CLASSROOM AND THE REALITY IS THE UNIVERSITY ENVIRONMENT WHERE WE WORK IT WOULD BE MORE LIKE FIVE HUMANS.

SO IT'S A RADIO FOR FIVE HUMANS OF GETTING TO ONE AP PER CLASSROOM IS A GREAT START, BUT WE SHOULD HAVE THREE OR FOUR MORE CABLES BECAUSE YOU NEED ABOUT FIVE PER CLASSROOM.

>>: GREAT.

THANK YOU.

WITH THAT IN MIND WE HAVE AROUND THE TABLE SEVERAL SCHOOL DISTRICT TECHNOLOGY DIRECTORS WHO'VE RECENTLY WORKED ON UPGRADING THEIR WIFI AND INSTALLING WI-FI IN NEW BUILDINGS.

I WOULD LIKE TO TURN FIRST TO KEITH FROM TOWNSHIP HIGH SCHOOL DISTRICT IN ILLINOIS TO DISCUSS YOUR EXPERIENCE IN UPGRADING YOUR SCHOOLS BY FEITH, THE CHALLENGES AND WALK US THROUGH YOUR PROCESS.

>>: THANK YOU FOR HAVING ME
HERE TODAY.

I GREATLY APPRECIATE IT.

TO GIVE YOU LITTLE CONTEXT OF OUR DISTRICT WE HAVE ABOUT 12,100 STUDENTS AND I
HEARD EARLIER TODAY IT'S NOT ABOUT THE DEVICE AND THAT IS SO TRUE.

WE ARE GOING INTO OUR FIFTH YEAR OF DEPLOYMENT WITH MOBILE DEVICES.

ONE OF THE THINGS WE'VE HAD TO PLAN FOR ITS ARE INCREASED IN WIRELESS CAPACITY.

STARTING IN 2004 AND BACK IN 2009 WE CHANGED OUR WIRELESS AND NOW IT'S MORE

ABOUT THE SATURATION AND THIS UPCOMING YEAR WE SENT OUT AND WE GOT BIDS ON THE
WIRING ACCESS POINT INSTALLATION AND THOSE COSTS ARE ABOUT A MILLION DOLLARS

AND IT'S REALLY ABOUT HOW DO YOU MANAGE THAT AND HOW DO YOU PAY FOR THAT AND
WE WILL HAVE 90-100 DEVICES OUT THERE, 12,000 SOME DEVICES IN THE FUTURE SO THERE

ARE TWO THINGS THAT COME TO MIND CONSORTIUMS, PULLING SCHOOL DISTRICTS

TOGETHER AND GETTING THEM ON BOARD TO DRIVE DOWN THAT COST OF THE PRICE OF THE
EQUIPMENT AND THE NUMBER TWO, IN OUR DISTRICT WE HAVE NOT HAD A REFERENDUM IN
30 SOME YEARS AND WE ARE PHYSICALLY RESPONSIBLE.

WE DON'T WANT TO GO OUT FOR A REFERENDUM SO DO WE PLAN ON GETTING A LEASE AND
SPREAD THOSE TERMS OUT OVER FOUR YEARS AND THEN DO A BUYOUT AT THE END.

OUR KIDS, THE TEACHERS ARE DEPENDING ON THIS ACCESS IN THE CLASSROOM AND IT
REALLY IS TRANSFORMING THE INSTRUCTION IN THE CLASSROOM AS WE SEE IT TODAY.

IT'S NOT ABOUT SUBSTITUTION IT'S JUST ABOUT A DIGITAL PDF AND PUTTING IT ON A DEVICE
AND THAT'S THE WAY THE KIDS ARE LEARNING NOW DAYS AND ONE OF THE THINGS I ALWAYS

SAY IS THE TEACHERS ARE ALWAYS TEACHING OUR STUDENTS BUT NOW WITH THE WEB THE
KIDS ARE TEACHING EACH OTHER GIVING THEM THE ABILITY TO LEARN AT THEIR OWN PACE

AND HOW WE MAKE THAT HAPPEN IN THE CLASSROOM.

SO AS WE MOVE FORWARD WE ARE WORKING ON THIS PLAN RIGHT NOW AND WE HAVE THE
CABLING PLANS BEING PUT IN.

NOT ONLY IS IT THE CABLING GO TO THE CLASSROOM BUT AS YOU MENTIONED ONE CABLE
OR THREE CABLES OR FIVE CABLES WE ARE PUTTING IN THREE CABLES RIGHT NOW TO
SUPPORT THE ACCESS POINT AND THE PROJECTOR.

AND TO SUPPORT AN APPLE TV.

AND WE HAVE THE INTERACTIVE DEVICE.

AND IT'S NOT ONLY A SMART BOARD, BUT AN INTERACTIVE TABLET TO CONNECTING.

AND FIBER OPTIC BACK BORN PUT IN IN THE DISTRICT IN 20 YEARS AGO.

IT ONLY SUPPORTS UP TO ONE GIGABIT OF TRANSPORT AND NOW WE ARE PUTTING AND

FIBER-OPTIC AND IT WILL SUPPORT UP TO 100 GIG AND CONTINUING FARTHER, AS YOU KNOW
IT'S NOT ONLY ABOUT THE WIRELESS IT'S ABOUT THE REST OF THE INFRASTRUCTURE.

WHEN YOU LOOK AT WHAT WE ARE DOING WE ARE BUILDING OUT OUR OWN PRIVATE WAN,
TEN GIGABITS OF ACCESS AND THEN THE INTERNET ACCESS FOR THE UPCOMING YEAR

WHICH WILL BE TWO GIGS.

500 GIG RIGHT NOW AND LAST YEAR WE HAD TO PUT CACHING IN PLACE BECAUSE E-RATE

DOES NOT ALLOW US TO AFTER-THE-FACT PURCHASE INTERNET ACCESS SO WE WERE SHISH
-- SO WE PURCHASE ACCESS.

IF WE DID NOT HAVE THAT IN PLACE WE WOULD BE STIFLED WITHIN OUR BUSINESS
OPERATIONS.

>>: JENNIFER, I WILL TURN TO
JENNIFER GARDNER FROM
PHILADELPHIA.

AND OBVIOUSLY LARGE DISTRICT UPGRADING WIFI AND BUILDING VARIOUS AGES TO BE SURE
IF YOU COULD DISCUSSED YOUR EXPERIENCE IN PHILADELPHIA WORKING WITH SOME OF THE
OLDER BUILDINGS AND ALSO WHAT YOU'VE SEEN IN THE CHALLENGES YOU HAVE
ENCOUNTERED BUILDING A WIFI TO YOUR STUDENTS.

>>: THE AVERAGE AGE OF OUR
SCHOOLS IS ABOUT 62 YEARS OLD
SO WE HAVE A LOT OF SCHOOL
BUILDINGS WE NEED TO RETROFIT
ESPECIALLY IF WE HAVE SCHOOLS
THAT DON'T HAVE DROP CEILINGS.

OF COURSE THE INCREASED COST FOR OUR WIRING.

WE ARE CURRENTLY DEPLOYING 80211 -- 80211.

A THIRD OF OUR SCHOOLS DONE SO FAR SO WE HAVE AN APPLICATION IN FOR 2014 TO THE
OTHER 2/3 OF OUR SCHOOLS AND WE CONDUCTED A LARGE SCALE RFP TO CONTROL THE
COSTS.

WE GOT A LOT OF RESPONSE, 11 RESPONSES TO THAT AND OUR INTENTION IS TO PURCHASE
ACCESS POINTS THAT COME WITH A LIFETIME WARRANTY WHICH DOES SOLVE THE
HARDWARE REPLACEMENT ISSUE, BUT NOT THE LABOR OR THE TROUBLESHOOTING AND THE
SOFTWARE SO THE BASIC MAINTENANCE IS REALLY A HUGE ASSET WHEN IT COMES TO
DEPLOYING THIS SORT OF INFRASTRUCTURE.

SO AGAIN WE ARE AT THE 80211 STAGE RIGHT NOW THAT EVERY FIVE YEARS OR SO THERE'S
A NEW TECHNOLOGY THAT COMES OUT SO IF THERE IS NOT CONTINUED E-RATE FUNDING
FOR THIS INFRASTRUCTURE WHAT WILL WE DO IN FIVE YEARS WHEN OUR COMPUTERS ARE
REQUIRING MORE AND MORE POWER AND BIGGER BETTER FASTER WE HAVE TO KEEP UP
WITH PACE SO OUR FOLKS CAN CONTINUE TO LEARN.

THERE'S ALSO SOME UNFUNDED CHALLENGES WHEN IT COMES TO WIFI DEPLOYMENT.

WE DO REQUIRE ROBUST AUTHENTICATION PLATFORM SO THERE'S UNFUNDED MANDATES AS
WELL AS FILTERING WE ALL KNOW ABOUT THAT HAS TO BE DONE.

WE NEED TO MAINTAIN THE SERVERS AND WE HAVE TO HAVE ADDITIONAL HARDWARE
PURCHASES FOR THE GUEST ACCESS AND THERE ARE A LOT OF CHALLENGES WITH
ESPECIALLY LARGE URBAN DISTRICTS WHEN WE HAVE 15,000 -- UP WHERE 15,000 ACCESS
POINTS THAT WE HAVE TO MANAGE AND IT'S A HEAVY LIFT AND BASIC MAINTENANCE IS A BIG
HELP, BUT WE HAVE A WIRELESS ENGINEER ON STAFF THAT MAINTAINS EVERYTHING AND IT'S
VERY IMPORTANT FUNCTION FOR OUR SCHOOLS.

WE HAVE OBVIOUSLY ROBUST LANDS THAT ARE LABS ARE WIRED TO BUT WIFI IS THE WAY
EVERYTHING IS GOING.

SO WE ARE HOPING THAT ARE 2014 REQUEST KNOCK ON WOOD WILL BE FUNDED SO WE CAN
CONTINUE TO FILLED OUT THE INFRASTRUCTURE AND THE SCHOOLS.

THE POVERTY RATE IS 85 PERCENT SO WE HAVE A LOT OF VERY POOR SCHOOLS IN POOR
NEIGHBORHOODS IN OUR DISTRICT.

WE HAVE ABOUT 250 BUILDINGS SO WE HAD TO BUILD A ROBUST LAND TO SUPPORT ALL
THOSE PROCESSES.

SO WE HAVE A LOT OF CHALLENGES.

>>: LET ME JUMP IN QUICKLY.

SO FOR BOTH JENNIFER AND KEITH, I'M CURIOUS YOU HAVING DONE THE DEPLOYMENT AND YOU WILL DO DOWN TO THE PER CLASSROOM NUMBER OR SOME OTHER KIND OF METRIC THAT WE COULD THINK ABOUT GIVEN WHAT PHIL SAID AND THE COMMENT IS JUST OUR OBJECTIVE IS NOT TO PLAY PING-PONG FROM THIS END OF THE TABLE TO ALL OF YOU SO ONE OF THE THINGS WE ARE HOPING TO GAIN FROM THIS IS HAVING YOU ALTOGETHER GET A LITTLE BIT OF THE BENEFIT OF LISTENING IN ON YOUR DIALOG SO I WOULD ENCOURAGE FOLKS TO JUMP IN AND REACT TO WHAT YOU ARE HEARING FROM OTHERS.

>>: THAT FIGURE FOR US RIGHT NOW IS \$1,900 FOR A CLASSROOM BUT THAT IS WITH EXISTING INFRASTRUCTURE IN PLACE AS WE BUILDING CURRENTLY WHAT WE HAVE.

IF WE WERE TO START FROM SCRATCH IT WOULD BE UP TOWARD 2500-3,000-DOLLAR PRICE POINT PER CLASSROOM.

>>: ARE ACCESS POINTS HAVE A DUAL RADIUS SO WE WIRED OUR SCHOOLS OVER THE LAST TEN YEARS SO EVERYTHING IS FOR WIRELESS SO WE TAKE ADVANTAGE OF THE DROPS WE PUT IN EACH CLASSROOM SO WE HAVE THE DATA TOOLS WITH DUAL RADIUS TO HELP WITH THE SATURATION ISSUE AND TRY TO KEEP AS MANY KIDS ONLINE AS WE CAN BUT WE HAVE EXISTING INFRASTRUCTURE AND WE TRY TO HAVE A SWITCH WITH INSTALLATION WHICH RUNS UPWARDS OF \$4,000 IN THAT IS WITH A HUMONGOUS DISCOUNT AS WE FILE FOR SOME UPGRADES THAT CAN SUPPORT THE WIRELESS INFRASTRUCTURE SO THERE'S ALWAYS SOMETHING ELSE YOU HAVE TO ADD TO MAKE SURE THE WIFI WORKS.

>>: IS THERE SOME TYPE OF TECHNOLOGY WITH WIRELESS AND THE OTHER IS THE WIRELESS ACCESS POINTS CAN STILL SUPPORT THE WIRELESS.

>>: WE STARTED WIRING SCHOOLS BACK IN 2001 AND 2003 AND YOU

HAD TO PLUG EVERYTHING IN.

WE DID NOT HAVE THE TECHNOLOGY AT THE TIME SO WE ARE KIND OF SAVINGS WHEN IT COMES TO ELECTRIFYING THINGS BUT IT'S SOMETHING YOU HAVE TO TAKE INTO CONSIDERATION AND SCHOOLS THAT ARE 62 YEARS AND OLDER AND THAT'S HARD TO DO.

>>: ONE OF THE THINGS WHEN YOU TALK ABOUT POE IS THAT POWER OF REASONING, AS YOU ADD MORE OF THOSE DEVICES TO THOSE CONTROLLERS AND SWITCHES YOU HAVE TO PUT MORE POWER IN THE CLOSETS BECAUSE YOU HAVE TO POWER UP ALL THOSE DEVICES.

YOU HAVE IP VIDEO, ALL OF OUR AUTOMATION SYSTEMS COMING ON BOARD, EVERYTHING GOING TO IP AND VOICE OVER IP AND EVERYTHING IS ON CONVERSION NETWORK SO THE MORE AND MORE IT'S GETTING PUT ON THESE POE SWITCHES SO YOU HAVE TO PROVIDE MORE ELECTRICAL CAPACITY AND INFRASTRUCTURE WITH THE SCHOOLS THAT BUILD ON THE NEED.

>>: WE HAD TO BUILD THAT AROUND THE CITY AND WE HAVE 20 DIFFERENT LOCATIONS AND WE ARE TRYING TO LEVERAGE THE POWER TO PUT THE CONTROLLERS TO CUT DOWN ON THE COSTS AND AT LEAST MAINTAIN IT THAT WAY.

>>: YOU MENTIONED INSTALLATION COST THAT YOU ALL HAD BUDGETED FOR, DID YOU ALSO -- DO YOU ALSO HAVE FIGURES FOR HOW YOU BUSTED IT -- BUDGETED FOR THE ONGOING MAINTENANCE AND SWITCH OUT OF THE TECHNOLOGY WHEN IT HAS REACHED THE END OF LIFE?

>>: WE HAVE SOME RULES OF THUMBS AS IT RELATES TO THE EQUIPMENT AND THE ACCESS POINTS.

FIVE YEARS IS PROBABLY NOT A BAD NUMBER.

AND THE INFRASTRUCTURE ITSELF IN TERMS OF THE WIRING, SO WE DO AND THE BEST DATA THAT WE HAVE FROM THAT IS COMPARING BACK THE BUDGETARY SPREADSHEET WE BUILT WITH INSTALLS AT CUMBERLAND COUNTY SCHOOLS, WHICH IS A PRETTY LARGE DISTRICT THAT WENT FROM 0-80 SCHOOLS WORTH OF WIRELESS.

AND WE GOT ENOUGH YEARS WORTH THAT WE CAN SEE SOMETHING LIKE A \$4.2 MILLION FIRST-TIME INSTALL COSTS THAT LOOKS LIKE \$1.5 BILLION ON A RECURRING BASIS.

I WOULD REACT A LITTLE BIT TO JENNIFER'S COMMENT AND I ABOUT FELL OUT OF MY CHAIR.

I THINK I HEARD ONE WIRELESS ENGINEER AND SOMETHING LIKE 240 BUILDINGS. I THINK ABOUT RESEARCH TRIANGLE PARK WHERE WE WORK IN A COMPANY OF THAT SIZE WOULD PROBABLY HAVE AN I.T. STAFF OF 50 RUNNING THAT NETWORK JUST AS A GENERAL CONSIDERATION.

>>: I WANT TO BRING IN THE LIBRARIES IN JUST ONE SECOND AND I WANT TO ADD ED MCKAVENEY, JUST FINISHING UP ON THE NOTION OF THE PER CLASSROOM AND RECENT WIFI UPGRADES YOU HAVE DONE.

A MUCH SMALLER DISTRICT IN PHILADELPHIA BUT CAN YOU REACT TO THE OTHER DISTRICTS AND PROVIDE US SOME BACKGROUND ON YOUR WORK.

>>: HAMPTON TOWNSHIP SCHOOL DISTRICT, WHICH IS A MEDIUM DISTRICT 5,000,003,000 STUDENTS.

WE DO NOT RECEIVE PRIORITY 2 FUNDING SO I HAVE TO FIGURE OUT WAYS TO FUND THIS OURSELVES.

BUT WHAT WE HAVE DONE IS I'VE TAKEN A PHASED APPROACH AND UNFORTUNATE FOR MY WIFI CAPACITY BUILDING THAT I DID IT WAS PROBABLY 2006 THAT WE HAD TO UPGRADE OUR PHONE SYSTEM AND THAT'S WHEN I REDID OUR WIRED NETWORK AND SWITCHED OVER TO VOIP SO I HAD SWITCHES IN PLACE AND THOSE SERVICES WERE ALREADY IN PLACE AND THEN WHAT I WAS ABLE TO DO WHEN I BUILD OUT THE WIFI AND WHAT CREATES DIFFICULTIES THERE IS PHASING IN OVER TIME WERE I NOT HAD A ONE-OFF PURCHASE OF EVERYTHING BUT I DON'T HAVE TO REPLACE IT ALL AT THE SAME TIME SO THAT PHASING CREATES SOME BENEFITS, BUT ALSO DIFFICULTIES IN TERMS OF MANAGEMENT BECAUSE THERE'S VARIATIONS AND I PROBABLY ENDED UP MORE IN THE NEIGHBORHOOD OF \$1,300 IN TERMS OF JUST THE WIFI BUILDOUT THAT WAS DONE WHERE WE ALSO USED NOT AN AP PER CLASSROOM BUT LARGE MULTI- RADIO APS THAT TO SPECTRUM AND WE HAVE A NUMBER OF DEVICES AND SOME ARE CONNECTING AND SOME ARE WIRELESS SERVICES AND WHAT WE HAVE BEEN RUNNING INTO -- I'M TRYING TO THINK WHERE WAS GOING WITH THAT BUT WHAT WE HAVE RUN INTO IS DIFFERENT ISSUES WITH CAPACITY, THE HUMAN CAPACITY AND THE SMALLER DISTRICTS, THE NUMBER OF PEOPLE THAT I HAVE TO MAINTAIN IT AND MY NETWORK ENGINEER AND SO I'M RUNNING INTO ALL THOSE DIFFERENT PROBLEMS BEING ABLE TO ISOLATE DIFFERENT INTERFERENCE AND BRING IN HOTSPOTS AND OTHER TYPES OF TECHNOLOGIES.

WE HAVE NEIGHBORHOODS NEARBY WHERE YOU HAVE OVERLAPPED FROM HOUSES AS WELL SO WE HAVE WORKED OUT MOST OF THAT STUFF BUT IN TERMS OF CAPACITY THE SWITCHES ALSO HAVE BIG UPLINK POINTS AND THAT IS IN TURN WHERE I'M NOW FACING UPGRADE CONSIDERATIONS FROM ICORE NETWORK BECAUSE AS I NEED TO SHIFT TEN GIG TECHNOLOGY AND LOOKING HOW BEST TO REPLACE THAT WIRE INFRASTRUCTURE TO MEET THE GROWING DEMAND OF DEVICES BECAUSE ONCE I PUT THAT IN PLACE IT'S TAKEN OFF IN TERMS OF THE FLEXIBILITY AND MOBILITY THE CLASSROOMS AND THAT HAS JUST SKYROCKETED OUR USE.

>>: THANK YOU.

TURNING TO SOME OF THE LIBRARY REPRESENTATIVES HERE AND I WILL GET TO THE QUESTIONS THEY'RE IN A MOMENT.

HAVING HEARD THE EXPERIENCES OF SOME OF THE SCHOOL DISTRICTS ON THE PANEL WE HAVE LOCAL AND STATE LEVEL LIBRARIANS WORKING TO DEPLOY WI-FI AS PART OF THEIR JOB AND DAVID, I WILL TURN TO YOU FIRST TO DISCUSS THE EXPERIENCE IN BOSTON AND WHAT YOU LEARNED.

>>: I'D CAME TO THE LIBRARY ABOUT FIVE YEARS AGO FROM THE PRIVATE INDUSTRY WHERE I WAS USED TO A THREE, FIVE-YEAR UPGRADE SCHEDULE FOR EQUIPMENT AND WAS KIND OF SURPRISED AT WHAT I FOUND.

LUCKILY MY PREDECESSOR HAD LINED UP A SERIES OF APPLICATIONS THAT WERE IN FACT, APPROVED FOR E-RATE FUNDING AMONG PRIORITY TO FOR THE 90 PERCENT LEVEL SO WE DID QUITE A SERIES OF UPGRADES.

WE HAD ABOUT 170 HAD PUT 200 ACCESS POINTS EMPLOYED OVER 28 LOCATIONS AND THAT SEEMED GREAT.

OVER THE FOLLOWING YEAR AS WE BUILT OUR INTERNET ACCESS CAPACITY FOR THE WHOLE SYSTEM TO ABOUT 400 MEGABITS OF SECOND IN AGGREGATE, TWO WEEKS AGO I GOT A CALL FROM A REPORTER SAYING I AM DOING A STORY ON WHY WIRELESS ACCESS IS SO POOR AT THE BOSTON PUBLIC LIBRARY.

WHAT CAN YOU TELL ME ABOUT THAT.

SO I WAS AGHAST AGAIN TO REALIZE THAT THERE ARE MULTIPLE UNDERLYING PROBLEMS HERE THAT REALLY NEEDED TO HAVE US ON A SCHEDULE AND WE'VE NOT HAD PRIORITY TWO FUNDING SINCE THEN SO THERE'S NOT BEEN AN OPPORTUNITY TO KEEP PACE WITH THE DEMAND.

ON THE REGULAR UPGRADE SCHEDULE LET ALONE THE DEMAND FOR ALL OF WHAT WE HEARD ABOUT IN THE PREVIOUS PANEL FOR NOT JUST COOL, BUT RADICALLY IMPORTANT EDUCATIONAL SERVICES THAT WE ALL NEED TO BE PROVIDING AS LIBRARIES AND SCHOOLS WHETHER IT IS SUPPORT FOR OUT OF SCHOOL PROGRAMS FOR THE KIDS, WHETHER IT IS THE LIFELONG LEARNING PROGRAMS THAT LIBRARIES PROVIDE TO SENIORS, THE UNEMPLOYED, THE HOMELESS, THOSE LIVING IN POVERTY THAT DO NOT HAVE ACCESS ANYWHERE ELSE.

SO IT'S KEEPING OUR COMPETITIVE EDGE IN MIND, BUT ALSO SERVING THE UNDERSERVED. SO HOW DO I DO THIS?

HOW DO I GO FORWARD FROM HERE AND THAT IS REALLY WHY TODAY IS AN EXCITING OPPORTUNITY TO SHAPE THAT.

IT'S ALSO BEWARE OF OVERSIMPLIFICATION.

NOT ALL BUILDINGS ARE CREATED EQUAL.

166-YEAR-OLD HISTORIC BUILDING PROVIDES MOST HORRID CHALLENGES FOR WIRELESS ACCESS DEPLOYMENT IN COMBINATION WITH A BUILDING THAT WAS BUILT IN THE LAST YEAR OR TWO BUT REALLY NEEDS ACCESS POINTS THAT CAN PROVIDE 20-30 INDIVIDUALS AND NOT A ROW OF FIVE SEATS WE HEARD ABOUT IN THE CLASSROOM SO THERE ARE DIFFERENT TECHNOLOGIES.

I WOULD BE AWARE OF THE SIMPLIFICATION HERE INTO THIS IS WHAT IT COST FOR ONE ROOM, ONE CLASSROOM, ONE CHILDREN'S LIBRARY SPACE. WE HAVE TO BRING THE SUBTLETIES OF AROUND HOW WE DO THAT NOT JUST WITH THE CHALLENGES, BUT ALSO WITH THE TECHNOLOGY CHOICES. IS IT A LOT OF DENSELY DEPLOYED ACCESS POINTS OR IS IT A COUPLE OF REALLY SUPER POWERFUL ONES THAT CAN HANDLE GREATER CAPACITY AND MULTIPLE CONNECTIONS.

>>: THAT WAS A THOROUGH OVERVIEW OF WHERE THE LIBRARIES ARE AND THE LIBRARY PERSPECTIVE.

I'D LIKE TO TURN TO SOME OF THE STATE LEVEL FOLKS HERE REPRESENTING LIBRARIES AND ALSO JEFF LETOURNEAU WHO HAS WORKED ABOUT WITH LIBRARIES IN MAINE AND I WILL ASK JEFF FIRST TO SORT OF REACT TO THE COMMENTS HEARD AROUND THE TABLE ON WIFI AND LIBRARIES AND PROVIDE YOUR OWN INSIGHT.

>>: ONE OF THE THINGS WE ARE LOOKING AT --

>>: I'VE ALSO BEEN ASKED EVERYONE TO SPEAK INTO THE MICROPHONE.

>>: ONE OF THE THINGS WE ARE LOOKING AT RIGHT NOW IS TO DO WITH OUR PUBLIC LIBRARY AND MUCH OF WHAT WE'VE DONE WITH OUR MIDDLE SCHOOLS AND HIGH SCHOOLS AND THAT IS TO FOCUS ON THINGS AT A STATE LEVEL TO LEVERAGE WHAT TECHNICAL RESOURCES WE HAVE AND THE SIZE OF CONSORTIUMS AND UNDERSTAND BY AND LARGE AT LEAST IN MAINE, LIBRARIES HAVE LITTLE TO KNOW FUNDING AVAILABLE TO PUT TOWARD INFRASTRUCTURE SO TRYING TO FIND THAT.

TO GIVE YOU A SENSE OF SOME OF THE THINGS WE'VE DONE IN THE STATE, IN THE PAST YEAR WE'VE HAD A ONE-TO-ONE PROGRAM FOR OVER 12 YEARS NOW IN OUR MIDDLE SCHOOLS AND HIGH SCHOOLS AND WE HAVE WATCHED FROM THE STATE NETWORK SIDE THAT MATURE FROM WE PUT IT THIS WAY IN THE STAFF, THE FIRST DEPLOYMENT WAS ACCESS POINTS, THE SECOND DEPLOYMENT WAS CADILLACS CONFIGURED AS YUGOS, AND THIS TIME AROUND, WE GOT INVOLVED BECAUSE WHAT WE ARE FINDING IS THE DEMAND IS SO MUCH HIGHER THAN IT WAS IN THE INITIAL ROUNDS SO WITH THE NEED TO BE ABLE TO DEEP DIVE INTO THAT ENVIRONMENT REMOTELY TO TELL WHAT IS GOING ON AND TROUBLESHOOT PROBLEMS, FIND ROGUE ACCESS POINTS AND ALL OF THAT STUFF IS VERY IMPORTANT.

SO NETWORK MAINE APPROACHED THE VENDOR THAT DOES MOST OF THE ONE-TO-ONE INITIATIVE AND STEPPED UP AND SAID WE WILL MANAGE THIS FOR YOU AND THAT WAY WE CAN HAVE A MANAGED ENVIRONMENT FROM A STUDENT DEVICE ALL THE WAY OUT TO THE INTERNET AND BE ABLE TO SEE THAT AND TO END.

TO GIVE YOU A SENSE WE ADDED ONE STAFF MEMBER, ONE ENGINEER TO BE ABLE TO PICK UP WIRELESS AT 239 SCHOOLS, WHICH REPRESENTS ALMOST 4,000 ACCESS POINTS AND OVER -- SUPPORTING OVER 80,000 DEVICES, ONE ENGINEER.

SO YES, WE HAVE A NETWORK OPERATIONS CENTER WITH SOME BUILT-IN CAPACITY ALREADY THERE SUPPORTING OTHER PARTS, BUT IT REALLY -- YOU CAN REALLY LEVERAGE SKILL SET AND KNOWLEDGE BY WORKING TOGETHER RATHER THAN TRYING TO HAVE EVERY LITTLE DISTRICT AND EVERY LITTLE LIBRARY TRY TO REINVENT THE WHEEL OVER AND OVER AGAIN.

>>: I PICKED UP ON THE CHAIRMAN'S ANNOUNCEMENT FROM THIS MORNING.

CONGRATULATIONS TO THE 28 LIBRARIES IN THE STATE OF MAINE THAT WILL NOW GET A ONE GIGABIT CONNECTION THROUGH NETWORK MAINE.

FOR THOSE 28 LIBRARIES AND LIBRARY SYSTEMS, HOW ARE YOU NOW TAKING THE NEXT STEP FOR WIRELESS DEPLOYMENT WITHIN THE LIBRARIES, IS IT A STATEWIDE EFFORT AND ARE THE LIBRARIES TESTING EQUIPMENT OFF A STATE CONTRACT THAT YOU PROVIDED TECHNICAL SUPPORT?

HOW DOES THAT WORK AS A PRACTICAL MATTER?

>>: TODAY INSIDE THE LIBRARY, SO

TO THE PATRON, IT'S ALL BEEN

LOCALLY DONE AND QUITE

HONESTLY IT'S BEEN DONE IN THE

SENSE OF YOU HAVE A PATRON

WHO HAS AN OLD LINKSYS ROUTER

THAT THEY ARE NO LONGER USING

AT HOME, THEY THROW IT IN.

IT'S NOT QUITE MEETING THE NEEDS.

ONE OF THE THINGS THAT WE HAVE FOUND IS THERE TENDS TO BE AT LEAST ONE YEAR LATE TIME BETWEEN PROVIDING HIGH-SPEED CONNECTIVITY TO THE OUTSIDE WALL BEFORE THEY FIND THE NEXT BOTTLENECK AND ARE ABLE TO ADDRESS IT INSIDE THE BUILDING.

SO ONE OF THE THINGS THAT WE HAVE DONE IS TRY TO STREAMLINE.

TO GIVE YOU A QUICK EXAMPLE, JUST HAPPENED LAST WEEK.

ONE OF THE LIBRARIES CLOSE TO MY HOMETOWN.

NOT MY HOMETOWN I SWEAR.

NEEDS SOMEONE IN THE GROCERY STORE AND SAID I THOUGHT YOU BROUGHT A GIGABIT TO THE LIBRARY, WHY IS THIS SO SLOW?

A GIGABIT IS NOT ANYTHING SO YOU VISIT YOU FIND OUT CABLE COMPANY GAVE THEM FREE CABLE MODEM AND THE LIBRARY AND THOUGHT IT WAS FREE I WILL HAVE TO USE IT AND PUT ALL THE WIFI ACCESS POINTS ON THAT CABLE MODEM.

20 MINUTES LATER WE HAD IT CHANGED OVER AND WE ARE SHOWING 300 MEGABITS A SECOND DOWNLOAD.

SO IT'S A LOT OF OUTREACH, A LOT OF EFFORT AND COORDINATION.

I DON'T KNOW HOW TO RUN THE LIBRARY.

DON'T ASK ME.

I DON'T KNOW THE DEWEY DECIMAL SYSTEM.

BUT I KNOW THE NETWORK.

DON'T EXPECT LIBRARIANS TO KNOW NETWORKING.

>>: ANOTHER STATEWIDE LIBRARY

EXPERT WE HAVE FROM

PENNSYLVANIA STACY COMPARE

AND CONTRAST YOUR EXPERIENCE

WITH WHAT YOU'VE HEARD AND

WHAT EXACTLY IS PENNSYLVANIA

DOING TO WORK ON WIFI IN THE

LIBRARIES.

>>: GOOD TO BE WITH EVERYBODY

AND I'D LIKE TO BUILD OFF WHAT

HAS BEEN SAID ABOUT LIBRARIES.

IN PENNSYLVANIA JUST TO SEND SOME CONTEXT WE HAVE OVER 600 BUILDINGS MANY OF, WHICH ARE IN RURAL PARTS OF THE STATE.

97 PERCENT OF THE BUILDINGS ARE OFFERING WI-FI ACCESS AND AT ANY GIVEN TIME YOU

CAN SEE WHAT I LIKE TO CALL THE WIFI OF LEAN WHERE PEOPLE LEAN UP AGAINST

BUILDINGS OUTSIDE WITH THEIR DEVICES OR THEY ARE IN THEIR CARS AND IN SOME PLACES

I'VE BEEN THE POLICE HAVE ASKED LIBRARIES TO SHUT THEIR WIFI OFF BECAUSE IT'S

CONSIDERED TO BE A PUBLIC PROBLEM TO HAVE IT ON AND PEOPLE PARKING IN THE

PARKING LOTS BUT PEOPLE ARE USING THE LIBRARY FOR ACCESS.

I'D LIKE TO BUILD OFF MAIN AND JEFF I BELIEVE THAT WE DO HAVE LIBRARIES WHO HAVE WIFI.

AGAIN 97 PERCENT BUT MANY OF THEM MIGHT HAVE A ROUTER THAT WAS DONATED TO

THEM.

THEY ARE NOT THINKING ABOUT UPGRADING AND THEY ARE -- THE WIFI CONNECTIVITY ON

TOP OF NETWORKS THAT ARE NOT ROBUST SO NOT ONLY DO THEY HAVE PEOPLE COMING IN

AND USING THEIR PCS THAT ARE ON MAYBE A T-1 LINE OR A DSL LINE, BUT THEY NOW HAVE

WIFI SITTING ON TOP OF THAT AND WONDERING WHY IT IS SLOW AND THAT'S BECAUSE

LIBRARIANS ARE NOT NETWORK ENGINEERS AND THEY ARE FIGURING HOW TO SUPPORT

THEIR COMMUNITIES AND RIGHT NOW THE ASSESSMENT POINT WE ARE DOING

ASSESSMENTS WITH FIBERS ACROSS THE STATE AND WE ARE LEARNING WE HAVE THE

CARNEGIE LIBRARIES OF OVER 100 YEARS OLD THAT WERE NOT DESIGNED FOR

CONDUCTIVITY OR POWER AND WE ARE DOING A DEEP DIVE AND A PERCENTAGE OF OUR

BUILDINGS TO FIGURE OUT WHERE ARE THE FIBERS IN TERMS OF BUILDING CAPACITIES AND

IN TERMS OF THEIR NETWORK CAPACITY AND ON TOP OF THAT HOW DO YOU FIGURE OUT

HOW TO PROVIDE BETTER TECHNICAL SUPPORT TO THESE LIBRARIES SO THEY CAN FACE

BETTER DECISIONS TO SHAPE THEIR NETWORKS AND OFFER MORE WIFI INCLUDING BUILDING

UPGRADE PLAN SINCE MANY DO NOT HAVE UPGRADE CAPABILITIES.

>>: I WOULD LIKE TO BUILD OFF

THAT LAST POINT FOR A QUESTION

FOR EMILY FROM GEORGIA.

YOU MENTIONED IN OUR DISCUSSION THE GEORGIA PUBLIC LIBRARY SERVICE HOSTS BEST PRACTICES FOR WIFI ON ITS WEBSITE AND IS WORKING WITH FIBERS ACROSS THE STATE. WE HEAR A LOT OF VARIATIONS ON HOW LIBRARIES ARE TACKLING THE PROBLEM SO IF YOU COULD REACT TO THE GENERAL STATEMENTS WE'VE HAD BUT ALSO SPECIFICALLY SORT OF WHAT YOU HAVE LEARNED TO PROMOTE BEST PRACTICES FOR LIBRARIES IN GEORGIA.

>>: SURE THING.

TO BUILD ON WHAT STACY AND JEFF SAID.

IN TERMS OF WHAT LIBRARIANS DO WHAT THEY HAVE TO DO I HAVE A GREAT STORY.

A LIBRARY DIRECTOR CALLED ME AND SAID THE NETWORK IS DONE.

I SAID OKAY, I WILL MAKE SOME CALLS AND SHE CALLED ME RIGHT BACK AND SAID IT'S OKAY I CONNECTED EVERYBODY ON MY PHONE.

AND I AM LIKE THROUGHOUT THE LIBRARY AND SHE SAID YES, I HAVE UNLIMITED DATA PLAN IT WILL BE OKAY FOR TODAY.

[LAUGHING]

AND I LOVE LIBRARIANS, I DO.

SO IN TERMS OF WIFI, WE WENT THROUGH A STATEWIDE UPGRADE, IN THE MIDDLE OF IT, MOST EVERYONE I KNOW HAS HEARD ABOUT IT AND IN TERMS OF WIFI IT VARY SO DRAMATICALLY PER SYSTEM AND BRANCH AND IT DEPENDS ON FUNDING AND EVERYTHING EVERYONE HAS TALKED ABOUT AND ONE OF THE THING OUR STATE LIBRARIAN DID WHEN WE WERE IN THE MIDDLE OF THE UPGRADE IS GO TO THE GOVERNOR AND ASKED FOR SOME INFRASTRUCTURE MONEY AND DID IT SO SKILLFULLY THAT WE GOT SOME.

IT WAS \$2 MILLION WHICH SOUNDS LIKE A LOT TO LIBRARIANS, BUT IT IS 400 TO BRANCHES SO IT'S NOT A WHOLE LOT.

SO ONE OF THE THINGS WE RECOMMENDED TO OUR LIBRARIANS IN TERMS OF THE INFRASTRUCTURE LIKE STACY AND JEFF AND SO MANY HAVE ELOQUENTLY TALKED ABOUT WE ARE NOT NETWORK ENGINEERS AND WE CAN'T AFFORD ONE AND ARE BUILDING MANY OF OUR BUILDINGS ARE NOT BUILT FOR THIS IN THE FIRST PLACE SO ONE OF THE BEST PRACTICES THAT WE HAVE ADOPTED IN GEORGIA IS RENT, DO NOT BUY.

THE TECHNOLOGY EVOLVES SO QUICKLY AND IS SO EXPENSIVE AND IT GOES DOWN EVERY YEAR THAT THE COST OF OWNERSHIP FOR OUR LIBRARIES IS TOO GREAT.

SO WE LOOK TO THE INTERNET SERVICE PROVIDER OR A LOCAL NETWORK COMPANY AND THE STATE LIBRARY SERVICE, ME AND MY TEAM WE LARGELY WORK THESE DEALS TO RENT THE EQUIPMENT AND THE REPLACEMENT DEAL, THE REPLACEMENT COST AND THE UPGRADE COST ARE NOT OURS BUT WE DO TRY TO BAKE THEM INTO SERVICE CONTRACTS INSTEAD. THAT HAS PROVEN ADVANTAGEOUS AND THE WAY AROUND THE COST OF OWNERSHIP AND THAT'S NOT AN OPTION FOR SCHOOLS, BUT FOR LIBRARIES, FOR US TO GET BY FOR THE NEXT YEAR, TO THE NEXT SOLUTION THAT HAS WORKED SO FAR.

>>: I'M GOING TO PUT A PLACEHOLDER ON THAT RENT DON'T BUY DISCUSSION FOR A FEW MINUTES FROM NOW.

AND INITIALLY HE PUT HIS CART UP DURING THE DISCUSSION SO.

>>: THANK YOU VERY MUCH.

SO WHAT CAUGHT MY ATTENTION WAS THE 11 BIDDERS IN THE RFP.

AS WE HAVE TRAVELED AROUND TALKING TO SCHOOL DISTRICTS, ONE OF THE THINGS WE

FIND IS THE MORE COMPETITION YOU HAVE, THE BETTER PRICING YOU ULTIMATELY GET BUT WE SEE MANY CASES WHERE SCHOOLS ARE NOT TAKING ADVANTAGE OF THAT SO FOR BOTH KEITH AND JENNIFER AND ANYONE ELSE WHO WANTS TO CHIME IN, THERE ARE TWO QUESTIONS THAT I LOVE YOUR PERSPECTIVE ON, ONE IS WHEN WE LOOK AROUND DISTRICTS THAT ARE BROUGHT -- BUYING PRIORITY TO EQUIPMENT IS THAT THEY ARE OVER BUYING AND THEY DON'T KNOW WHEN THEY WILL GET MONEY SO THEY WILL BUY THE BEST THEY CAN AND HOPE THAT IT LASTS UNTIL THE NEXT TIME.

PARTLY THEY ARE OVER BUYING BECAUSE VENDORS ARE SELLING THEM THE BEST THEY CAN SELL THEM, WHICH IS THEIR JOB SO IN YOUR PROCESSES TWO PERSPECTIVES, ONE, HOW DID YOU MANAGE A PROCESS THAT GOT 11 BIDDERS AND HOW DID YOU FIND THEM AND WHAT DID THAT ULTIMATELY RESULTS IN IN TERMS OF THE DISCOUNTS YOU ARE ABLE TO GET OFF THE NORMAL PRICING AND NUMBER TWO, HOW DID YOU DEAL WITH THIS OVER BUYING QUESTION TO MAKE SURE IN YOUR PROCESS YOU BOUGHT WHAT YOU NEEDED NOT NECESSARILY WHAT THEY WANTED TO SELL YOU?

>>: I SHOULD SAY THAT IN OUR LARGE URBAN DISTRICT WE ARE LUCKY BECAUSE WE HAVE A STRONG TECHNICAL STAFF AND A LOT OF SCHOOL DISTRICTS IN GENERAL DON'T HAVE THE BENEFIT OF HAVING PEOPLE THAT UNDERSTAND THE PROGRAMS AND ARE HIGHLY TECHNICAL.

WE'VE HAD WIRELESS ACCESS POINTS AND UPWARDS OF 13,000 CLASSROOMS FOR OVER TEN YEARS SO WE ARE WELL AWARE OF WHAT WE REQUIRE FROM THE CAPACITY STANDPOINT AND THE 11 BIDDERS WE HAVE A GREAT PROCUREMENT DEPARTMENT AND I SHOULD COMPLEMENT OUR STAFF THAT WE WROTE A GREAT RFP AND WE HAD TECHNICAL FOLKS ON THE EVALUATION COMMITTEE SO WE LOOKED AT A LOT OF DIFFERENT PROPOSALS.

I'M NOT TECHNICALLY WAS NOT PART OF THE EVALUATION COMMITTEE THANK GOODNESS. BUT WE KNEW WHERE WE WANTED TO GO.

SO WE WERE LOOKING TOWARD THAT AND WE ALSO HAD SOME ISSUES WHERE VENDORS MAY HAVE BEEN PROPOSING TECHNOLOGY THAT WAS NOT IN THE MARKET YET AND WE WERE SURE WE DID NOT WANT TO GET BURNED BY SOMETHING THAT WAS BRAND KNEW THAT WAS NOT TESTED IN THE REAL WORLD.

BUT ALONG THOSE LINES AND I THINK JEFF, YOU SPOKE ABOUT IT EARLIER, IN MAINE YOU HAVE THE BENEFIT OF STANDARDIZING ACROSS ALL YOUR SCHOOLS AND THE FCC REGULATIONS DON'T ALLOW US TO DO THAT.

WE CAN'T STANDARDIZE AND ASK FOR SPECIFIC BRAND SO IT DIMINISHES OUR COST OF SCALE.

WE ARE NOT ABLE TO PURCHASE -- WE HAVE TO DUCT TAPE OUR AUTHENTICATION SYSTEMS TO BE ABLE TO ACCOMMODATE DIFFERENT MANUFACTURERS AND VENDORS SO WITH THAT CHANGE IN POLICY AND LIMITED OUR POTENTIAL TO MAXIMIZE OUR NETWORKS AND WHAT WE ARE ABLE TO DO.

[APPLAUSE]

>>: I WANT TO TURN TO RICK TO HEAR FROM THE PANHANDLE EDUCATION CONSORTIUM IN FLORIDA.

>>: A COUPLE OF PERSPECTIVES ON THE TABLE THAT WE'VE NOT TALKED ABOUT BUT THEY ARE CLOSELY RELATED.

LISTENING TO OUR PANEL THIS MORNING, OUR DISTINGUISHED PANEL, A COUPLE OF THINGS THAT WAS SAID THAT GOES BACK TO THE WIRELESS PART.

ONE IS 1 PERCENT MATTERS.

AND THE SUPERINTENDENT TALKED ABOUT THEIR GOAL IS TO REACH 100 PERCENT OF THE STUDENTS AND THE OTHER COMMENT WAS ONE OF THE PANELISTS HAD TO DRIVE 25 MILES TO STARBUCKS TO GET ACCESS TO THE INTERNET.

AND THE THIRD COMMENT IS ABOUT THE BUDGET BEING ADEQUATE ENOUGH TO BUY CHALK. ROLLING ALL OF THOSE DISCUSSIONS INTO A REALIZATION OF FUNDING AND PLANNING AGREEMENTS THAT HAVE TO BE IN PLACE TO BUILD BEYOND THE SCHOOL WALLS AND NETWORKS IS KIND OF WHERE I WANTED TO POINT TO IS THAT IN FLORIDA THERE ARE REALLY KIND OF TO FLORIDA'S, THE RURAL FLORIDA THAT MAKES UP 5 PERCENT OF THE STATE POPULATION AND IN FLORIDA, LIKE MOST STATES, YOU ARE FUNDED ON THE NUMBER OF STUDENT SEATS IN YOUR DISTRICT SO BASICALLY THESE 32 DISTRICTS GET 5 PERCENT OF THE STATEWIDE DOLLARS TO BUILD TECHNOLOGY NEEDS.

THE OTHER PART IS THAT THE COST OF THAT TECHNOLOGY IS EQUALLY DISTRIBUTED ON THE SQUARE MILEAGE AND DISTANCE BETWEEN THESE AREAS SO MY POINT IS AND I WILL SUMMARIZE.

WE'VE TALKED AFTER LUNCH, BUT MANY OF THESE SCENARIOS, BUT MY POINT IS THERE IS A DIFFERENT APPROACH THAT HAS TO BE DEVELOPED ACROSS SCHOOL NETWORKS AND HAVE SCHOOLS THAT THINK BEYOND AND OUTSIDE OF THE WALLS OF THE SCHOOL.

IN OUR AREA IN FLORIDA, THERE ARE 67 DISTINCT SEPARATE AGENDAS FOR TECHNOLOGY. ESSENTIALLY THESE SUPERINTENDENTS HAVE THEIR OWN AGENDA.

IN OUR AREA, 32 OF THOSE SUPERINTENDENTS OUR PUBLICLY ELECTED OFFICIALS WHICH HAS A SOMEWHAT DIFFERENT PERSPECTIVE.

MANY OF THEM WITHIN THE CLASSROOM THE YEAR BEFORE THEY BECAME A SUPERINTENDENT.

SO OUR CHALLENGE IS TO TAKE THE INFORMATION AND TO BREAK THROUGH THOSE BARRIERS WHERE WE ACTUALLY START PLANNING.

THERE'S NOT A LOT OF SUCCESS STORIES I SHARE, BUT ONE OF THE MOST SIGNIFICANT THINGS IS THAT TODAY WE ARE PUTTING TOGETHER ALL OF OUR RURAL SCHOOL DISTRICTS TO START DEVELOPING THAT PLAN TO PULL THESE KINDS OF RESOURCES INTO HER DISTRICTS.

>>: I WILL PULL THE PIN OUT OF RENT NOT BUY AND I WILL TURN TO BILL GOODMAN WHO'S HERE WITH US FROM IDAHO.

WI-FI IS A MANAGED SERVICE IS ANOTHER CONCEPT DISCUSSED IN A RULEMAKING THAT

WE'VE HEARD ABOUT THAT PICKS UP ON A LOT OF THOSE THEMES AND HE COMES FROM A DISTRICT WHERE THEY'VE WORKED WITH WIFI TO MANAGE SERVICE AND IF YOU COULD EXPLAIN TO US YOUR DISTRICTS STORY AND WHY YOU WENT THAT ROUTE AND WHAT YOU LEARNED.

>>: THANK YOU.

FIRST OF ALL, SURE WITH YOUR LITTLE BIT ABOUT IDAHO IT'S A LARGE STATE AND VERY MOUNTAINS AND WE HAVE MULTIPLE IT CLIMATE ZONES FROM DESERTS TO THE VERY, VERY HIGH MOUNTAINS OVER MILE HIGH CITY'S AND WE ARE VERY, VERY RURAL.

THE TOTAL NUMBER OF STUDENTS IN THE STATE OF IDAHO IS LESS THAN SOME OF YOUR SCHOOL DISTRICTS SO WE HAVE VERY, VERY STUDENT -- FEW STUDENTS AND WE ARE THE 48TH LOWEST FUNDED SO WE ARE ALSO KIND OF TOWARD THE BOTTOM OF THAT AND THAT MAKES THE REALITY OF NETWORK ENGINEERS AND WIRELESS ENGINEERS NON-EXISTENCE. IT'S NOT SOMETHING THAT WILL BE AFFORDED.

I THINK WE HAVE TWO OR THREE DISTRICTS CAPABLE OF AFFORDING THAT END IN THAT CASE THEY ARE ONE OR TWO IF THEY ARE LUCKY SO AGAIN VERY LOW FUNDED AND VERY RURAL.

IDAHO DECIDED TO GO ABOUT A COUPLE OF YEARS AGO AND PUT BROADBAND IN EVERY HIGH SCHOOL IN THE STATE.

WE AT HIGH SCHOOLS STILL ON DIAL-UP AND WE ARE TALKING 2007-2008.

WE AT HIGH SCHOOLS THAT COULD NOT EVEN GET DIAL-UP.

NOT EVEN OFFERED BY THE LOCAL TELCO SO NO ACCESS AT ALSO THE GOVERNOR'S OFFICE -- OFFICE WAS ABLE TO SECURE FUNDING AND PUT TOGETHER A PROGRAM TO RUN FIBER TO THOSE HIGH SCHOOLS NOT ONLY TO HELP THE HIGH SCHOOLS, BUT TO BRING IN THE LIBRARIES AND THE SERVICES AND OTHER STATE ENTITIES AND HELPING EACH COMMUNITY BY HAVING THE FIBER.

EVEN WITH THAT WE HAD AREAS THAT WERE NOT CAPABLE OF IT.

THEY HAVE SEVEN OR EIGHT MICROWAVE ANTENNAS SHOOTING THE INTERNET DOWN TO THEIR COMMUNITY AS THE ONLY POSSIBLE WAY TO ACCESS THAT.

THAT WAS PHASE ONE AND THAT WAS DONE THROUGH MANAGED SERVICE THEN ONE PROVIDER AND A SIDENOTE, THAT PROJECT IS IN JEOPARDY RIGHT NOW AND WHEN E-RATE DOES AUDIT THEY DISCONTINUE FUNDING FOR THE LEGISLATOR GOT A BILL SEVEN TIMES MORE EXPENSIVE THAN THEY PLAN TO PAY AND NEARLY CANCELED THE PROJECT SO IF THERE'S ANYBODY AT THE FCC THAT CAN SPEED THAT UP A LITTLE BIT, WE'D APPRECIATE THAT.

THE SECOND PART OF THE PROJECT IS TO PUT A MANAGED WIRELESS SERVICE INTO EVERY HIGH SCHOOL.

WE LOOKED AT THAT FOR THE REASONS WE'VE MENTIONED.

HAVING NETWORK ENGINEERS AND HAVING THEM ABLE TO SUPPORT AND ASSIST SCHOOLS WAS UNREALISTIC.

NONE OF THE SCHOOLS WILL BE ABLE TO AFFORD IT AND MOST CANNOT PUT IN THEIR OWN WIRELESS NETWORKS AND THAT WAS AP PER SCHOOL DISTRICTS OF THE STATE PUT OUT TO BID USING THE PURCHASING POWER FOR A STATEWIDE MANAGED SERVICE THAT WOULD TAKE CARE OF ALL THE NEEDS FOR THE LOCAL SCHOOL DISTRICT SO IF THE LOCAL TECH DIRECTOR YOU ARE NOT MANAGING EQUIPMENT THAT YOU'VE NOT SEEN BEFORE OR NOT HAD THE TIME TO SEE BECAUSE YOU ARE TEACHING IN THE BASKETBALL COACH AND

EVERYTHING ELSE IN THE SMALL COMMUNITIES.

SO THE STATE PUT OUT FOR BID \$21 PER STUDENT SO FOR \$21 PER STUDENT THEY WERE ABLE TO NEGOTIATE A CONTRACT AND THERE WERE TEN BIDDERS FROM AROUND THE COUNTRY THAT BID ON IT.

THE SERVICE REQUIRES A MINIMUM OF NEGATIVE 70 DB THAT EDUCATION TAKES PLACE AND THAT INCLUDES LIBRARY HALLWAYS, AND ALL HAVE TO BE COVERED.

THE PROJECT ALSO REQUIRES THAT IF STUDENTS HAVE DIFFICULTY CONNECTING MEANING IF EVERY STUDENT CAN'T BE CONNECTED ALL THE TIME THAT THE SERVICE PROVIDER IS REQUIRED TO COME IN AND INCREASE THE NUMBER OF ANTENNAS WITH THE APS THEY PLACED IN AND THE SERVICE ALSO REQUIRES TECH SUPPORT AND REQUIRES THEM TO HAVE A BACKUP WITHIN 24 HOURS ARE 7:00 A.M. THE NEXT MORNING SO BY GOING WITH THE MANAGED SERVICE ROUTE WE ARE ABLE TO GUARANTEE THAT ALL HIGH SCHOOLS IN THE STATE WILL HAVE WIRELESS, WILL HAVE IT UP 99 PERCENT OF THE TIME AND IF IT GOES DOWN IT WILL BE UP BY THE NEXT MORNING BEFORE SCHOOL STARTS ALL WITHOUT ADDING ADDITIONAL COST TO THE DISTRICT AND ALLOWING A REFRESH CYCLE THAT MOST DISTRICTS CAN'T AFFORD TO DO OF ALL THOSE WIRELESS APS REQUIRING THE NEW STANDARDS AS THEY COME OUT SO WE ARE ABLE TO WRAP IT UP INTO A CONTRACT THAT AS LONG AS IT CONTINUES TO BE FUNDED WE ARE ABLE TO GUARANTEE WIRELESS ACCESS FOR ALL OF OUR STUDENTS.

>>: GREAT.

THANK YOU.

JENNIFER, REACTION TO THAT.

>>: THAT SOUNDS FANTASTIC.

WE SPECIFICALLY STAYED AWAY FROM ANY CLOUD BASED SOLUTIONS BECAUSE WHAT HAPPENS IF THEY DON'T FUNDED ANYMORE, THEN WE HAVE NOTHING.

>>: I WOULD ADD THAT ENTIRE MANAGED WIRELESS SOLUTION BECAUSE OF THE WAY YOU ARE ABLE TO HAVE IT WRITTEN AND THAT'S ONE OF THE THINGS WE'D LIKE TO SEE CHANGED TO MAKE SURE THAT MANAGED SERVICE COULD BE PROVIDED.

>>: ANY REACTION TO THIS?

>>: I WAS WONDERING IF THAT INCLUDES THE INTERNET CONNECTION OR IF THE INTERNET CONNECTION IS SEPARATE FROM THE MANAGED WIRELESS SOLUTION?

>>: IT'S A SEPARATE PROJECT.

TWENTY-ONE DOLLARS FOR THE MANAGED WIRELESS AND THE BROADBAND PIECE IS COMPLETELY SEPARATE AND INTERESTINGLY ENOUGH THE GOVERNOR'S OFFICE, THE WIRELESS PIECE AND THE STATE SUPERINTENDENT'S OFFICE.

>>: SO IS THERE -- SO ARE THERE

INSTANCES OF FINGER-POINTING IN THAT SENSE WHERE THE WIRELESS PROVIDER THAT HAS STRICT SERVICE AGREEMENT MIGHT COMPLAIN THE ISSUE FOR THE INTERNET CONNECTION AS OPPOSED TO THE PROBLEM?

>>: IT COULD POSSIBLY HAPPEN.

AT THIS TIME BOTH CONTRACTS ARE HELD BY BOTH COMPANIES SO THEY CAN POINT TO THEMSELVES BUT IT IS A VERY REAL POSSIBILITY THAT IF THE COMPANY DOES NOT GET BOTH CONTRACTS IN THE FUTURE WE COULD HAVE THAT ISSUE.

>>: JOE.

>>: I HAD ONE MORE QUESTION, THE MANAGED WIRELESS SERVICE, WHAT IF YOU RUN INTO AN ISSUE WITH A PARTICULAR SCHOOL BECAUSE OF THE AGE OF THE BUILDING WHEN YOU INSTALL IT.

THE DROPS QUESTION MORE TO PUT THAT IN IS THAT INCREMENTAL TO THE COST?

>>: THE \$21 PER STUDENT IS ALL-INCLUSIVE SO THEY ARE REQUIRED TO PUT IN DROPS AND PUT IN THEIR OWN SWITCHERS AND NETWORK AND FIBER TO THE ACTUAL APS AND IT IS ALL THERE.

SO THE CONTRACT THAT WAS NEGOTIATE REQUIRES THEY TAKE CARE OF THAT IF THEY RUN INTO A BUILDING TOO OLD TO HANDLE THAT THEY HAVE TO FIND A SOLUTION AND IT'S THEIR JOB TO FIND A SOLUTION IN EACH SCHOOL HAD TO HAVE A SITE SURVEY WHERE THEY WENT THROUGH AND MANAGE THE DENSITY OF THE WALLS AND HOW WELL IT PENETRATES AND THEN THEY OF COURSE WENT IN AND INSTALL THE APS AND HAD TO DO A SECOND SITE SURVEY BEFORE THE STATE WOULD SIGN OFF AND PAY THE BILL TO MAKE SURE THAT COVERAGE REACHED EVERYBODY EVERYWHERE.

>>: IS THE DATA FROM THE SITE SURVEY PUBLIC RECORD?

>>: I DON'T KNOW THAT.

>>: THAT WOULD BE VALUABLE INFORMATION AND IF YOU GET THAT ACROSS FOUR OR FIVE STATES OR ACROSS A MAJOR CITY LIKE PHILADELPHIA BECAUSE WE COULD PUT SOME WOOD BEHIND THE ARROW OF THE TRENDS AND COSTS.

>>: EMILY FROM GEORGIA.

>>: A QUICK QUESTION ABOUT

ANALYTICS THE VENDOR, DO THEY PROVIDE REPORTS ALONG METRICS THAT YOU DESIGNED AHEAD OF TIME FOR USAGE OR HOW DOES THAT WORK?

>>: AS PART OF THE CONTRACT WE REQUIRE PRETTY EXTENSIVE REPORTING AND IT SCHOOLS CAN OFTEN DO A CONTENT BUILDER THAT THE STATES PROVIDE AND ALL THE REPORTING AROUND THE USAGE EVERY TYPE OF USAGE YOU COULD THINK OF AND THEY'VE GIVEN EVERY SCHOOL DISTRICT THEIR OWN LOGIN TO SEE THEIR OWN DATA AND SEE THAT MANAGED AND LOOK AT THAT BUT THEN THE STATE HAS HIGH-LEVEL ACCESS TO SEE ALL THE DISTRICTS SO THEY CAN MONITOR THE VENDORS DOING THEIR JOB AND THE DISTRICT CAN INDIVIDUALLY MONITOR THINGS ARE BEING TAKEN CARE OF IN THEIR OWN DISTRICT.

>>: MICHAEL, DID YOU WANT TO JUMP IN?

>>: I WILL DO OUR FIRST TWITTER QUESTION.

AND MAYBE A GOOD SEGUE SO I WILL LEAD OFF WITH THIS AND THEN FOLKS FROM THE AUDIENCE, IF ANYONE WANTS TO COME TO THE MIC WE WOULD INVITE THAT. WE KNOW THERE ARE PLENTY OF EXPERTISE OUT IN THE ROOM HERE AS WELL AS AROUND THE TABLE.

THIS IS FROM DOUG WHO IS HERE IN THE ROOM SO HE WILL JUMP UP IF I GET IT WRONG OR HE WILL ASK A FOLLOW-UP BUT THE QUESTION IS HOW CAN IT INCENT BETTER LONG-TERM PLANNING AND DECISION-MAKING IN TERMS OF LEARNING.

THAT'S A RELEVANT QUESTION AND DO SOME PEOPLE SAID YOU STRUGGLE WITH THIS THAT IT COMES IN THAT IT DOESN'T COME AND HOW YOU ALL HAVE THOUGHT ABOUT PLANNING FOR YOUR WI-FI -- WIFI NETWORK AND IN CERTAIN SITUATIONS WHERE YOU'VE NOT LOOKED AT E-RATE.

SO IF YOU CAN JUMP IN.

>>: VERY BRIEFLY, THE MOST IMPORTANT THING WE TALKED ABOUT IT EARLIER TODAY ABOUT A MULTIYEAR AWARD.

IT TAKES SOMETIMES TO TURN THAT AROUND AND WE TALKED A LOT ABOUT WIRELESS BUT

BACK UP A LITTLE BIT AND WE ARE LOOKING AT 17 MEGS PER SCHOOL AND 299 SCHOOLS AND WE WOULD BE TALKING ABOUT WIRELESS CLASSROOM AT MOST OF OUR SCHOOLS RIGHT NOW IF WE WERE MOVING IN THAT DIRECTION SO THERE ARE SOME ISSUES OUT THERE BUT A MULTIYEAR E-RATE CONTRACT THAT ALLOWS SCHOOLS TO PURCHASE BANDWIDTH AND INFRASTRUCTURE WHERE NONE WERE AVAILABLE WOULD BE ABLE TO MOVE FORWARD TOWARD A REASON FOR THEM TO GET TOGETHER AND PLAN ACROSS THE LINES.

>>: I AM STRUCK NOT JUST IN TERMS OF ANSWERING THIS QUESTION, BUT MANY OF THE COMMENTS MADE EARLIER POINT TO IF WE ARE TALKING SPECIFICALLY ABOUT WIFI OR ANY OTHER ASPECT OF THE PROGRAM WE ARE ONLY OUT FOR AS STRONG AS THE WEAKEST LINK IN THE ENTIRE CHAIN AND USUALLY THAT MEANS IN THIS CONTEXT WE ARE ONLY EVER AS FAST AS THE SLOWEST LINK IN THE ENTIRE CHAIN.

SO WHEN WE TALK ABOUT PLANNING, IT HAS TO BE COMPREHENSIVE FROM INTERNET ACCESS, THROUGH INTERNAL CONNECTIONS WHETHER THAT'S CONDUCTIVITY OR EQUIPMENT AND DOWN TO THE ENDPOINT AND THE ENDPOINT IS NOT HOW MUCH CAPACITY IS AVAILABLE THEORETICALLY TO THE END USER WHETHER IT'S A WIRED DESKTOP OR A WIRELESS CONNECTION POINT BUT WHAT IS THE ACTUAL CAPACITY IF YOU HAVE 20 STUDENTS ARE 29 STUDENTS OR 100 PATRONS THERE, HOW MUCH CAPACITY CAN YOU DELIVER?

SO THE PLANNING HAS TO BE COMPREHENSIVE.

AND UNFORTUNATELY IT ALSO MEANS PLANNING AROUND THE E-RATE PROGRAM INSTEAD OF THROUGH THE E-RATE PROGRAM BECAUSE OF THAT FUNDING RISK THAT IT INTRODUCES ON THE MULTIYEAR PROCESS.

ADDITIONALLY WE CAN TALK ABOUT STANDARDS FOR DENSITY OR IF IT'S A FIVE MEGABITS PER SECOND DOWNLOAD CAPACITY TO THE INDIVIDUAL.

WE CAN DECIDE WHETHER THAT IS TOO MUCH OR TOO LITTLE OR SHOULD IT BE THAT BUT WHAT SHOULD IT BE THREE YEARS FROM NOW OR FIVE YEARS FROM NOW SO THE OTHER CRITICAL PLANNING CHALLENGE IS HOW DO WE BUILD IN THE ABILITY AND THIS SERVICE SEEMS LIKE THEORETICALLY IT ANSWERS A PIECE OF THAT BY PLACING THE BURDEN SOMEWHERE ELSE BUT AS YOU SAID IT'S NOT REALLY A FUNDED SERVICE RIGHT NOW AND I DON'T KNOW THAT THAT ANSWERS IT ENTIRELY FROM THE.

YOUR ABILITY POINT OF VIEW SO THERE ARE SOME THOUGHTS.

>>: IN MY AREA, WHAT WE HAVE DONE IS IN TERMS OF THE BROADBAND PIECE, WE HAVE DEVELOPED A CONSORTIUM SO WE HAD A STATE BROADBAND GRANT

THAT WE TOOK BACK THE APPLICATION TO WHERE WE BUILD A GIGABIT NETWORK THROUGHOUT THE WHOLE COUNTY AND SO THAT IS SUBSEQUENTLY TAKING CARE OF THE BROADBAND PIECE BUT AT THE SAME TIME, DISTRICTS NOW HAVE THE INTERNET FILTERING AND THE OTHER ASPECTS OF THINGS IN TERMS OF THAT FOR SOME PEOPLE THAT FIREWALL AND SECURITY ASPECT IS STRONG AND THE INTERNET FILTER BECOMES A BOTTLENECK SO I HAD TO UPGRADE THAT ASPECT OF THINGS WHICH FOR ME WAS NOT A FUNDED PIECE OF THAT IN IN ANY WAY BUT THEN THE WIDE BY CAPACITY IT'S INTERESTING HOW TODAY ARE ACTUALLY JUST LAST NIGHT I HAD SOMEBODY COMMENT ON THE WIFI IN THE AREA AND I WAS ON WIFI IN MY HOTEL AND I COULD NOT SKYPE I WAS TRYING TO TALK TO MY DAUGHTER AND WE TALKED ABOUT EARLY LEARNING AND THINGS AND I SWITCHED TO THE LTE NETWORK AND ACTUALLY WITH CLEAR VIDEO, CLEAR AUDIO WAS ABLE TO TALK AND ALL THAT STUFF.

BUT AT THE SAME TIME IN MY CLASSROOMS, I HAVE TEACHERS TRYING TO DO A PROJECT AND WE DO A LOT OF GLOBAL VIDEOCONFERENCING AND INTERACTING ONLINE AND I HAVE WHOLE CLASSROOMS TRYING TO DO LANGUAGE LEARNING WHERE THEY ARE INTERACTING WITH THEIR COUNTERPARTS IN GERMANY AND THEY ARE ACTUALLY INDIVIDUALLY TRYING TO SKYPE IN A WHOLE CLASSROOM SETTING WITH INDIVIDUAL STUDENTS TO LEARN LANGUAGE AND THINGS LIKE THAT SO HOW WE SCALE THAT UP AND HOW I PIGGYBACK ON STATEWIDE CONTRACTS FOR PURCHASING THE EQUIPMENT BECAUSE I'M NOT PRIORITY FUNDED I CAN'T MANAGE IT AND KEEP IT UNIQUE BUT I STILL HAVE TO FOLLOW BIDDING RULES AND THINGS LIKE THAT THEY'RE SO IT'S CONVOLUTED BUT THERE ARE MULTIPLE WAYS TO ACCOMPLISH SOME OF THOSE AND TO MEET CONSORTIUM PURCHASING HELPS WITH THAT.

>>: I WOULD ASK THE THREE OF YOU TO HOLD ONTO YOUR POINTS AND GET A QUESTION FROM THE AUDIENCE MEMBER PLEASE.

>>: I'M JULIE AND I'M THE STATE

E-RATE COORDINATOR FROM THE DEPARTMENT OF EDUCATION AND THE CONSENSUS SEEMS TO BE THE ISSUE WITH WHO IS GOING TO MANAGE OUR WIRELESS INTERNET WITHIN THE SCHOOLS AND THAT IS SOMETHING WE FACE IN WEST VIRGINIA AS WELL.

WHEN YOU HAVE A STATE INITIATIVE WHERE WE HAVE TECHNOLOGY SYSTEM SPECIALISTS THAT ARE AMONG MANY OF OUR SCHOOLS AND THEIR FUNCTION IS TO NOT ONLY DEAL WITH WIRELESS BUT ALSO COMPUTERS AND THE CLASSROOMS BUT WE HAVE THIS ISSUE WITH FUNDING AND WE ALSO HAVE AN ISSUE WITH EXPERTISE.

SCHOOLS DO NOT PAY EDGE MUCH AS THE CORPORATE WORLD.

SO WE LOSE A LOT OF THE EXPERTISE THAT WE HAVE BUILT UP WITH OUR TECHNOLOGY SPECIALISTS TO HIGHER PAYING JOBS, EVEN JOBS OUT OF STATE.

SO WHAT WE ARE LOOKING AT IS TO IMPLEMENT A STATEWIDE CONTRACT FOR MANAGED WIFI AND AS THE GENTLEMAN FROM IDAHO HAS STATED CURRENTLY IT'S NOT ELIGIBLE FOR E-RATE WORK.

MOST LIKELY WHEN WE GO OUT TO BUILD IT WILL PROBABLY NOT BE ELIGIBLE FOR E-RATE SUPPORT AND I GUESS ONE OF MY QUESTIONS IS IS THERE A WAY THAT THE FCC COULD TAKE THAT INTO CONSIDERATION THAT COMPETITIVELY BID CONTRACTS HAVE MET ALL OF THE REQUIREMENTS OR IF WE PUT IT OUT UNDER A 470 SO WE DON'T HAVE TO DO A SECOND COMPETITIVE BID AND EVEN AT THE SCHOOL DISTRICT LEVEL IS AN ONEROUS PROCESS ANYWAY SO WE WOULD NOT HAVE TO COMPETITIVELY BID IT TO MAKE IT ELIGIBLE FOR SUPPORT IF IT WERE ADDED TO ELIGIBILITY AS PART OF 2.0.

>>: LET ME FOLLOW UP WITH A QUESTION I THINK YOU SAID THEY ARE GETTING \$21 FOR MANAGED SERVICE AND IS AT ABOUT THE AMOUNT YOU ARE EXPECTING FROM BIDS OR WHAT ARE USING.

>>: WHAT WE ARE PLANNING IS TO ASK FOR A MULTIPLE PHASED APPROACH BECAUSE WE HAVE THE MAJORITY OF OUR SCHOOLS GET A BUDGET AND WE HAVE A STATE CONTRACT FOR P2 SO WE'VE DONE IN THE LAST TWO YEARS 150 SCHOOLS WITH E-RATE FUNDING JUST TO GET THEM WIRED FROM 1-WAS SO WE HAVE SOME SCHOOLS WITH EXISTING WIRELESS ACCESS, THEY JUST DON'T HAVE THE STAFF TO BE ABLE TO MANAGE THAT WIFI SO WHAT WE ARE LOOKING AT IS

THE ABILITY TO HAVE JUST THE SERVICE PIECE OR TO DO A MODEL SIMILAR TO THAT AND I WOULD LIKE TO GIVE YOU MY CARD SO I COULD GET A COPY OF YOUR RFP BUT WE ARE LOOKING AT A MULTI- PHASED APPROACH AND WE HAVE A LOT OF DIFFERENT SCENARIOS AND SOME PEOPLE WITH HALF THE SCHOOL BUILDING HAS NEW FIGHT AND HAVE HAS OLD BECAUSE THEY HAVE TO FACE IT IN WITH NO SUPPORT.

>>: BEFORE WE GO TO THE NEXT QUESTION STACY AND I WANT TO GIVE YOU A CHANCE TO REACT TO THIS QUICKLY.

>>: GREAT DISCUSSION. I'M LEARNING A LOT.

I THINK I WOULD LIKE TO REITERATE WHAT DAVID SAID ABOUT FLEXIBILITY WE NEED SCALABILITY ON CONNECTIVITY AND IN LANCASTER I GOT A REPORT OF HOW PEOPLE ARE USING THAT CONNECTIVITY AND THEY WERE TALKING ABOUT THE IMPACT OF DEVICES PEOPLE ARE BRINGING INTO THE BUILDING AND THOSE DEVICES ARE DOWNLOADING UPGRADES AND ALL KINDS OF THINGS THAT ARE NOT NECESSARILY THE WORK DONE BUT MULTIPLE DEVICES ON TOP OF ALL THE OTHER KINDS OF ACTIVITIES AND ALSO THINKING ABOUT MEASUREMENT.

HOW DO WE CONTINUE TO MEASURE THE CONDUCTIVITY AND THE CAPACITY SO WE CAN FIGURE OUT HOW WE CAN CONTINUE TO GROW THAT CAPACITY BECAUSE AS WE ARE SEEING AS THEY INCREASE THE CAPACITY THEY ARE FILLING THE PIPE SO AGAIN SCALABILITY AND THEN ALSO MEASUREMENT FOR HOW WE CONTINUE TO GROW THE NETWORKS.

>>: ONE MORE QUESTION FROM THE AUDIENCE.

>>: MY NAME IS FRED BREAK THEN I'M PRESIDENT OF THE BOARD OF E-RATE MANAGEMENT PROFESSIONAL ORGANIZATIONS AND WE ARE A TECHNOLOGY DESIGN FIRM AND THE ONLY THING I WOULD CAUTION OR WOULD HOPE THAT THE FCC WOULD TAKE INTO CONSIDERATION ON ALL THESE NEW RULES IS FIRST AND FOREMOST CAN YOU TELL US IN ADVANCE, MUCH IN ADVANCE WHAT THE PROCESS WILL BE BECAUSE AS WE MENTIONED EARLIER THIS

MORNING THE BUDGETING
PROCESS STARTED A LONG TIME
AGO FOR WHAT WILL BE HAPPENING
IN THE FUTURE.

AND THE SECOND PART OF THAT IS I WOULD HOPE AS YOU CONSIDER YOUR RULES AND
WE'VE HEARD RUMORS POSSIBLY THAT YOU WERE CONSIDERING EVEN FUNDING SOME OF
THE WIRELESS PARTS AND CONDUCTIVITY ON THE SCHOOL SIDE, MAYBE A DIFFERENT
FUNDING MODEL OR SOMETHING LIKE THAT, I DON'T KNOW HOW THAT WILL EVOLVE BUT I
WOULD HOPE THAT ANY RULES CHANGES THAT YOU HAVE WILL ALLOW US THAN TO KNOW
THAT THERE IS A STATEWIDE NETWORK OR A STATEWIDE BUYING CONSORTIUM OR SOME
SORT OF A CONSORTIUM OPPORTUNITY THERE THAT TYPICALLY IS A MULTIYEAR CONTRACT,
THREE, FIVE AND IN ONE OF MY CASES IN CALIFORNIA A STATEWIDE CONTRACT FOR
BROADBAND CONNECTIVITY THAT GOES OUT EIGHT YEARS.

I WOULD HOPE YOU WOULD ALLOW US TO KNOW THAT ONCE WE FIND THAT CONTRACT IT
WILL GO FOR THE LENGTH OF WHAT OUR CONTRACT WOULD BE.
INSTEAD OF CHANGING IT AT SOME POINT IN TIME IN THE FUTURE SO JUST SOME WORDS OF
CAUTION.

I WOULD HOPE YOU WOULD START THINKING AND WHILE YOU ALWAYS HAVE AND HAVE BEEN
VERY GOOD AND SUPPORTIVE OF THE PROGRAM THAT YOU WOULD HELP US TO KNOW WHAT
SOME OF YOUR THOUGHTS ARE AND THEN COMMIT TO IF THERE ARE GOING TO BE ANY
CHANGES ON THE PRIORITY TYPE OF A PROCESS THAT SCHOOL DISTRICT OR CONSORTIUM
WOULD KNOW THAT FUNDING IS GOING TO BE THERE THROUGH THE LENGTH OF THEIR
CONTRACT.

>>: THANKS FOR THE COMMENT.

WE ARE GOING TO GO A COUPLE MORE MINUTES.

I'M GOING TO LET WILL AND EVAN PUT A BOW ON OUR EARLIER DISCUSSION AND THEN EVAN
HAS HAD HIS CART UP AND THAT WE WILL WRAP UP FOR LUNCH.

>>: I WAS JUST GOING TO ADD THAT
THE CONTRACT ARE AVAILABLE ON
THE STATE WEBSITES IF YOU ARE
LOOKING FOR THOSE GO TO OUR
WEBSITE AND FROM THERE I'M NOT
SURE, PROBABLY TECHNOLOGY
SERVICES OR THERE'S A SEARCH
BOX ON THE PAGE TO FIND THAT
RFP AND THE SIGNED CONTRACT.

THE SECOND THING WHEN WE ARE TURNING ABOUT SCALABILITY, I KNOW THIS HAS BECOME
AN ISSUE ESPECIALLY WITH TESTING AND THINGS LIKE THAT WHERE WE ARE PLANNING 18
MONTHS AHEAD, WE FIGURE WHAT WE ARE GOING TO NEED THIS YEAR AND UPGRADE OUR
BANDWIDTH AND WE FOUND OUT THAT WHEN WE GET INTO STATE TESTING WE MAX IT OUT
AND THE ABILITY TO INCREASE THAT AS NEEDED VERSUS WAITING POTENTIALLY ANOTHER 18
MONTHS BECAUSE WE PASS THE WINDOW AT THAT POINT TO MAKE NECESSARY CHANGES I
WOULD JUST ADD TO THAT THAT WOULD BE VERY NICE TO HAVE.

>>: I JUST WANTED TO ADD THAT
CLEARLY ONE OF THE ISSUES WE

ARE FACING IS HOW DO WE PROVIDE EXPERTISE AROUND MANAGING WIRELESS NETWORKS SOME DISTRICTS ARE FORTUNATE ENOUGH TO STAFF THAT KNOW HOW TO DO THAT AND MANY OTHER LIBRARIES ARE NOT AND IT SEEMS LIKE THERE ARE POTENTIALLY THREE DIFFERENT MODELS WE TALKED ABOUT SO ONE IS THE MODEL OF THE DISTRICT DOING IT THEMSELVES IN THE SECOND IS THE MANAGED SERVICES MODEL AND THE THIRD IS WHICH WE ALLUDED TO EARLIER IS SORT OF THE OUTSOURCING OF THAT EXPERTISE MODEL WHETHER IT'S TO A STATE ORGANIZATION LIKE DONE IN NORTH CAROLINA OR MAINE OR TO APPROVE -- COMMERCIAL PROVIDER AND I WOULD LOOK AT MY HOTEL LAST NIGHT, I HAD PROBLEMS WITH THE WIFI AND CALLED THE FRONT DESK AND THEY HANDED ME THE NUMBER FOR THEIR COMMERCIAL PROVIDER WHO ARE CALLED AND THEY TOOK CARE OF THE SERVICE SO THERE ARE ACTUALLY A COMMERCIAL SERVICE PROVIDERS TO PROVIDE THAT PIECE.

IT DOES NOT HAVE TO BE IN A MANAGED SERVICE AND THERE ARE MULTIPLE OPTIONS OUT THERE IN HOTELS OR GREAT EXAMPLE THAT IT WOULD BE WORTH LOOKING AT FOR SCHOOLS.

>>: THANK YOU ALL VERY MUCH.

WE WILL GO OUT GO AHEAD WE ARE ONLY 12 MINUTES BEHIND SCHEDULE SO GOOD JOB TEAM.

I WILL PLAY PATRICK'S ROLE BRIEFLY.

WE WILL RECONVENE FOR LUNCH AT 1:00 O'CLOCK, THE NEARBY OPTIONS HE REVIEWED EARLIER AND WE WILL HAVE ANOTHER GOOD DISCUSSION SHORTLY AFTER LUNCH.

THANK YOU VERY MUCH.

PLEASE STAND BY.

PLEASE STAND BY.

PLEASE STAND BY.

>>: IF EVERYBODY COULD GRAB THEIR SEATS, WE WILL GO AHEAD AND GET STARTED. THERE ARE SOME FOLKS STILL COMING BACK THROUGH SECURITY BUT WE NEED TO GET STARTED.

BEFORE I FORGET, I WANT TO THANK THE FOLKS ON OUR STAFF, ROGER AND KAYLA AND JEFF AND RICHARD AND EVERYBODY ELSE BEHIND THE MAGIC WINDOW OVER THERE WHO SET THE ROOM UP TO MAKE SURE EVERYTHING WORKS.

THANK YOU FOR ALL THE WORK THEY DO EVERY DAY.

AND ALSO I WANT TO ANNOUNCE THAT AT THE END OF THIS ROUNDTABLE WE WILL HAVE A CRAZY GAME OF DUCK DUCK GOOSE SINCE THIS IS AN EDUCATION EVENT SO IF EVERYONE WANTS TO STICK AROUND IT WILL BE FUN.

BUT BEFORE WE DO THAT IT'S MY PLEASURE TO INTRODUCE COMMISSIONER MICHAEL O'RIELLY.

[APPLAUSE]

>>: THANK YOU.

VERY KIND OF YOU.

I APPRECIATE YOUR TIME.

THE LAST TIME I SPOKE, THE TABLE WAS COMPLETELY EMPTY, JUST CHAIRS AND I SPOKE TO AN EMPTY ROOM SO THIS TIME I'M A LITTLE MORE PLEASED TO SEE WHERE ABLE TO MAKE IT BACK FROM LUNCH.

I HOPE YOU ARE ATTENTIVE AFTER LUNCH TIME.

I'M PLEASED TO PARTICIPATE IN THIS WORKSHOP AND I APPRECIATE THE TREMENDOUS OPPORTUNITY THAT CONNECTIVITY CAN OFFER STUDENTS AND LIBRARY TEACHERS.

I WAS IN THE PORTIONS OF THE WEBCAST IS RUNNING A WAS IMPRESSED TO HEAR HOW TECHNOLOGY IS TRANSFORMING HOW WE ACCESS INFORMATION AND EDUCATE OUR CHILDREN.

AS MANY OF YOU HAVE RECOGNIZED, THE E-RATE PROGRAM IS DUE FOR AN OVERHAUL. IT'S HELPFUL TO HEAR FROM TODAY'S PANEL IS HOW THE PROGRAM COULD BE REFORMED TO PROVIDE BETTER CONNECTIVITY AND HOW TO DO SO IN A MORE COST EFFECTIVE MANNER.

I'M GRATEFUL TO MY COLLEAGUES COMMISSIONER PAI AND COMMISSIONER ROSENWORCEL WHOSE THOUGHTFUL PERSPECTIVES HAVE INFLUENCED MY OWN THINKING IN THIS SPACE.

I'VE DEVELOPED SOME PRINCIPLES THAT I HOPE WILL BE PART OF THE DISCUSSION AND REFLECT MANY NEW RULES THE COMMISSION ADOPTS.

I WOULD SUGGEST THAT THESE ARE EASILY ACHIEVABLE GUIDEPOST TO HELP ME JUDGE MY VIEWPOINT ON ANY REFORM.

FIRST,, E-RATE REFORM MUST NOT INCREASE THE COST CONSUMERS WHO PAID FEES ON THEIR PHONE BILL AND GIVEN THE DEMAND FOR E-RATE SERVICES ALREADY OUTSTRIPS THE SCARCE DOLLARS BUDGETED FOR THE PROGRAM I WOULD BE PARTICULARLY CONCERNED ABOUT DIVERTING LIMITED FUNDING TO THE NEW E-RATE PILOT PROJECTS.

SECOND, E-RATE MUST BE REFOCUSSED ON BROADBAND ACCESS TO FORM BETTER CONNECTIVITY TO THE SCHOOLS AND LIBRARIES.

THE FCC CAN PLAY AN IMPORTANT ROLE IN ENSURING THAT ALL SCHOOLS HAVE ACCESS TO BROADBAND AND THAT WOULD LEAVE THE DECISIONS ABOUT AND FUNDING FOR

TECHNOLOGY USE WITHIN THE SCHOOLS TO THE LOCAL OFFICIALS THAT UNDERSTAND THE NEEDS OF THEIR COMMUNITIES, THE STUDENTS AND TEACHERS.

THIRD, E-RATE MATCHING REQUIREMENTS, WHICH ARE AS LOW AS 10 PERCENT MUST BE MADE CONSISTENT WITH OTHER FEDERAL PROGRAMS TO HAVE CONTROL COSTS AND STRETCH AVAILABLE DOLLARS.

FOURTH, E-RATE FUNDING MUST LEVERAGE THE PRIVATE SECTOR NETWORKS AND SERVICES NOT OVERBUILD THEM.

FIFTH, THE E-RATE PROGRAM MUST NOT OVERSUPPLY BUT RATHER GIVE SCHOOLS THE FLEXIBILITY TO CHOOSE THE SPEED, THE BEST MEETS THEIR NEEDS AND OF COURSE,, E-RATE PROGRAM ADMINISTRATION MUST BE REVISED.

WHAT CONCEPT CANNOT BE OVERLOOKED IS THE CONCEPT TO PROVIDE BETTER PRICING INFORMATION TO SCHOOLS AND LIBRARIES.

TO THE EXTENT THE COMMISSION CAN EDUCATE, NO PUN INTENDED, TO OUR SCHOOLS THAT ARE HERE, THAT FELL FLAT.

[LAUGHING]

AND WHAT OTHERS ARE PAYING FOR CONDUCTIVITY, THAT WOULD BE HELPFUL.

BUT WE SHOULD BE EXTREMELY LEERY IN CONTEMPLATING THE COMMISSION SETTING SUCH PRICES.

REFORMING THE E-RATE PROGRAM WILL HAVE A POSITIVE EFFECT THROUGHOUT OUR NATION.

I LOOK FORWARD TO HEARING FROM TODAY'S PANEL IS, THOSE REMAINING IN WORKING WITH MY COLLEAGUES IN THE MONTHS AHEAD TO COMPLETE THE TASK OF MODERNIZING E-RATE PROGRAMS.

THANK YOU SO MUCH AND I LOOK FORWARD TO PARTICIPATING FROM THE SIDELINES.

[APPLAUSE]

>>: WELCOME BACK EVERYONE.

IT IS MY HONOR TO PLAY CHESS FOR THIS AFTERNOON SO I WILL KICK US OFF AND THEN OUR HOPE, AS WE DID THIS MORNING IS TO PRETTY QUICKLY TRANSITION TO A RELATIVELY OPEN CONVERSATION WHERE WE CAN GET THE BENEFIT OF WHAT YOU ALL ARE DOING.

SO JUST TO RECAP.

THIS MORNING WE TALKED ABOUT HOW THE WORLD OF EDUCATION IS CHANGING, THE INCREDIBLE PROMISE OF DIGITAL LEARNING AND THE GROWING IMPORTANCE OF WIFI IF WE ARE GOING TO SEE THOSE OPPORTUNITIES TO PARAPHRASE THE PRESIDENT, IN A WORLD WHERE WE EXPECT FREE WIFI WITH OUR COFFEE WE SHOULD HAVE WORLD-CLASS WIFI FOR OUR STUDENTS.

AND IN OUR LIBRARIES.

AND I THINK WE HAD A GREAT VERY THOROUGH DISCUSSION OF HOW TO GET THAT CONNECTIVITY AT AFFORDABLE PRICE POINTS, BUT WE WILL SHIFT GEARS AND WE'VE GOTTEN THE TRAFFIC FROM THE STUDENT OR THE PATRONS TO THE PROMISE AND NOW WE WILL GET IT OUT TO THE DISTRICT AGGREGATION POINTS AND ULTIMATELY OUT TO THE INTERNET.

WE HAVE HEARD THROUGH THIS PROCEEDING FROM TECH DIRECTORS FROM EDUCATORS AND LIBRARIANS ACROSS THE COUNTRY AND I EXPECT THIS PANEL WOULD AGREE THAT BANDWIDTH NEEDS ARE GROWING RAPIDLY AND THAT AS THAT HAPPENED, MANY SCHOOLS AND LEVERS ARE FINDING IT HARD TO KEEP UP AND IF WE ARE SUCCESSFUL IN GETTING WIFI

IN OUR SCHOOLS AND LIBRARIES IT'S REASONABLE TO EXPECT THAT THOSE TRENDS ARE ONLY GOING TO CONTINUE TO ACCELERATE.

SO AS WE MODERNIZE E-RATE IT'S CLEAR WE HAVE TO DO EVERYTHING IN OUR POWER TO CONNECT LIBRARIES TO HIGH-CAPACITY SCALABLE CONNECTIONS AND MAKE SURE THAT THE PRICES THAT THEY ARE PLAYING BOTH FOR E-RATE AND SCHOOLS AND LIBRARIES TO STAY AFFORDABLE AS THE BANDWIDTH NEEDS GROW AND IT'S FAIR TO SAY THAT'S BEEN A POINT OF CONSENSUS IN THIS PROCEEDING.

AND IN LIGHT OF THAT, WHEN WE KICKED OFF THIS PROCEEDING LAST YEAR, ONE OF THE FIRST THINGS WE DID IS WE SAW A LOT OF VARIATIONS IN WHAT PEOPLE ARE DOING BUT WE ALSO SAW SOME COMMONALITY AND SOME BEST PRACTICES AND EVEN SOME COMMONALITY IN SOME OF THE PRICE POINTS THAT EFFECTIVE DISTRICTS AND STATES WERE ABLE TO REALIZE TO SAY ENTER THIS NEGOTIATION AND THAT INCLUDED STATES AND CONSORTIA THAT WERE PROVIDERS TO REALLY SCALE SOME MORE STANDARDIZED PRICING ACROSS LARGE GEOGRAPHIC AREAS.

SO OUR GOAL FOR THE NEXT HOUR 1/2 IS TO TALK IN SOME DETAIL ABOUT THOSE STRATEGIES AND THE PRICING MODELS THAT PEOPLE HAVE FOUND THAT HAVE WORKED FOR THEM.

JUST AS WE DID THIS MORNING, AT LEAST INITIALLY WE WILL TRY TO FOCUS LESS ON THE SORT OF DETAILS OF THE E-RATE MECHANICS AND MORE ON WHAT YOU ALL AS THE EXPERTS ON THE GROUND ARE ACTUALLY DOING TO GET THIS CONDUCTIVITY, WE'VE HAD LOTS OF DISCUSSION ON THE POLICY RECORD, MOVING MORE TO COMMENTS WE CAN GET TO THAT AT THE END, BUT WE ALL WANT TO START BY LAYING THE FOUNDATION WITH SOME OF THE PRACTICE OUT THERE.

AND WITH THAT IN MIND, I WILL TRY TO DO A FEW WORDS ON TERMINOLOGY TO TRY AND LEVEL SET A LITTLE BIT IN THIS AREA WHICH AS WE'VE TALKED TO PEOPLE, IT'S CLEAR THAT PEOPLE USE WORDS IN DIFFERENT WAYS IN THIS SPACE SO I WILL TRY TO DO SOME LEVEL SETTING AND WE WILL SEE WHERE THE CONVERSATION TAKES US.

WE HAVE COME TO THINK ABOUT THIS PROBLEM OF CONDUCTIVITY OF THE PROMISE IN 2 CHUNKS IN MANY CASES.

ONE IS THE WIDE AREA NETWORK, WHICH IS FROM A SCHOOL TO A DISTRICT POINT OF AGGREGATION, COULD BE THE HIGH SCHOOL OR A DATA CENTER OR EVEN THE CENTRAL OFFICE.

AND IF IT'S TELCO KIND OF NETWORK AND THEN THE SECOND IS GETTING FROM THAT DISTRICT POINT OF AGGREGATION OUT TO THE BROADER WORLD.

THERE'S A LOT OF VARIATION IN HOW THAT PROBLEM IS SOLVED.

IT COULD BE INTERNET CONNECTION OR INTERNET TO THE CENTRAL OFFICE OR CONNECTIVITY THROUGH WIRING OR DIRECT CONDUCTIVITY AND A LARGE URBAN POINT OF PRESENCE.

IT COULD BE THROUGH A RENT MODEL AND WE HAVE SOME HERE THAT WE ARE LOOKING FORWARD TO HAVING THAT CONVERSATION.

BUT AS WE HAVE LOOKED AT THOSE IT IS CLEAR TO US THAT THOSE TWO PIECES HAVE SOME DISTINCT CHARACTERISTICS ON PRICING AND MARKETS AND I WANT TO SORT OF LEVEL SET THERE AND OBVIOUSLY THAT IS NOT UNIVERSAL.

SOME SCHOOLS CONNECT DIRECTLY, SOME DISTRICTS ARE SINGLE BUILDING DISTRICTS IN SOME LIBRARIES, WHICH HAVE THEIR OWN MODEL AND WE ARE INTERESTED TO TALK ABOUT

THAT BUT IT IS A FRAMEWORK WHICH HOPEFULLY WE CAN DO SOME WORK.
SO WITH THAT LEAD IN, I WANT TO START WITH A QUESTION TO AVEN.
EVAN, YOU IN YOUR TEAM AT EDUCATION SUPER HIGHWAY HAVE DONE A VERY IMPRESSIVE,
VERY DETAILED STUDY OF THE 2013 E-RATE SPENDING ON WIDE AREA NETWORKS AND
INTERNET ACCESS.
REALLY DIGGING IN AND A GRANULAR WAY THAT'S NEVER BEEN DONE BEFORE AND IN YOUR
REPORT, YOU HAVE SAID AFFORDABILITY WAS THE NUMBER ONE CHALLENGE TO BANDWIDTH
UPGRADES.
I THINK THAT IS CONSISTENT WITH OTHER FINDINGS WE HAVE SEEN IN PROCEEDINGS,
THINGS LIKE THE QUOTIENT SURVEY LAST YEAR.
SO BASED ON YOUR ANALYSIS, JUST TO KICK US OFF, WHAT WERE SOME OF THE BEST
PRACTICES YOU SAW TO SOLVING THAT CHALLENGES THEM WHAT WERE SOME OF THE PRICE
POINTS THAT THE MORE SUCCESSFUL SCHOOLS AND DISTRICTS WERE ABLE TO HANDLE?
>>: THANK YOU, MICHAEL.
AS WE HEARD EARLIER THIS MORNING DIGITAL LEARNING IS TRANSFORMING EDUCATION
AROUND OUR COUNTRY ALREADY TODAY.
EVERY TIME I START TALKING, I JUST LIKE TO REMIND EVERYONE THAT THERE ARE STILL
40 MILLION OF OUR KIDS WHO DON'T HAVE THE BANDWIDTH THEY NEED.
AND HOPEFULLY HERE WE WILL HAVE THE OPPORTUNITY TO MAKE A DIFFERENCE FOR
THOSE KIDS.
AND AS I THINK ABOUT THE QUESTION THAT YOU ASK, WE IDENTIFIED TWO KEY FACTORS IN
OUR REPORT THAT NEED TO BE ADDRESSED IF WE ARE GOING TO SOLVE THIS PROBLEM.
THE FIRST IS WE NEED TO CONNECT 98 PERCENT OF OUR SCHOOLS TO FIBER.
AND WE NEED TO DO THAT FOR TWO REASONS.
ACCESS TO FIBER IS CRITICAL NOT ONLY BECAUSE IT'S THE ONLY WAY WE WILL GET THE
CAPACITY THAT WE NEED TO MEET THE PRESIDENT SCHOOL OF A GIGABIT OF BANDWIDTH IN
EVERY SCHOOL, BUT IT'S ALSO THE MOST COST-EFFECTIVE WAY OF PURCHASING
BANDWIDTH.
WHAT OUR STUDY FINDS IS THAT SCHOOLS WITH FIBER PAY ONE QUARTER OF THE PRICE
AND GET NINE TIMES THE BANDWIDTH OF SCHOOLS THAT DON'T HAVE FIBER.
SO WE NEED TO MAKE SURE THAT EVERY SCHOOL WITH MORE THAN 100 KIDS HAS A FIBER
CONNECTION AND I TALK A LOT ABOUT SCHOOLS, BUT LIBRARIES ARE OBVIOUSLY A KEY PART
OF THIS.
BECAUSE OUR STUDY WAS FOCUSED ON DATA FROM SCHOOLS AND TO DO THAT WE WILL
HAVE TO SUBSIDIZE INVESTMENTS AND FIBER DEPLOYMENTS WHERE COMMERCIAL
PROVIDERS ARE UNWILLING TO BUILD OUT BECAUSE THERE'S NOT ENOUGH REVENUE
POTENTIAL OR THEY DON'T OFFER AFFORDABLE CONNECTIONS.
BUT SECOND, WE FOUND IN OUR STUDY, GETTING ALSO TO THE AFFORDABILITY POINT THAT
WE NEED TO DRAMATICALLY LOWER THE COST OF SCHOOLS AND LIBRARIES BANDWIDTH.
AND THE E-RATE PROGRAM ALSO NEEDS TO DRAMATICALLY LOWER THE COST BECAUSE
OTHERWISE IT WON'T BE ABLE TO AFFORD THE BANDWIDTH THAT OUR SCHOOLS NEED.
SO FROM A PROGRAM PERSPECTIVE, WHAT THAT MEANS IS WE NEED TO GET THE COST OF A
ONE GIGABIT WAN CONNECTION FROM THE SCHOOLS IN THE DISTRICT OFFICES DOWN
40 PERCENT TO ROUGHLY \$750 PER GIGABIT CONNECTION.
AND FOR INTERNET ACCESS, THAT MEANS WE NEED TO TAKE THE COST OF INTERNET

ACCESS DOWN TO ABOUT \$3 PER MEGABIT FROM THE \$22 WHERE IT STANDS TODAY. THAT WOULD ALLOW EVERY SCHOOL IN THIS COUNTRY TO BE ABLE TO AFFORD THE BROADBAND THAT THEY NEED TO MEET THE CONNECT ED WAN AND INTERNET ACCESS GOALS WITH A BUDGET THAT SUMMER APPROXIMATES THE E-RATE BUDGET TODAY. AND THE OTHER THING IS WE KNOW THESE PRICES ARE POSSIBLE. IF YOU LOOK AT THE PRICES THAT ARE BEING PAID BY THE TOP QUARTILE OF SCHOOLS IN OUR STUDY, ONE GIGABIT WAN CONNECTION WAS ONLY \$322 PER MONTH. AND THE AVERAGE AT THE TOP HALF WAS JUST UNDER \$600 PER MONTH. SO WE KNOW WE CAN GET THERE. SIMILARLY FOR INTERNET ACCESS, THE TOP QUARTILE IS CURRENTLY PAYING JUST UNDER \$4 PER MEGABIT. SO WELL WITHIN REACH OF THAT 3-DOLLAR TARGET ESPECIALLY AS WE CONSIDER HOW PRICES WILL FALL OVER TIME. SO YOU ASKED ABOUT BEST PRACTICES AND WHAT OUR DISTRICT IS DOING TO GET THOSE. FIRST THING THEY'RE DOING IS TAKING ADVANTAGE OF ECONOMIES OF SCALES AND BUYING MORE BANDWIDTH. THE FACT IS BANDWIDTH IS BASICALLY A FIXED COST FOR PROVIDERS AND ONCE THE FIBER CONNECTION IS IN PLACE, IT COST THEM VIRTUALLY NOTHING TO GIVE MORE BANDWIDTH FOR THE SAME PRICE AND I THINK THERE ARE DISTRICTS AROUND THIS TABLE WHO CAN ATTEST TO THAT. ONE GREAT EXAMPLE OF THAT IS THE SCHOOL DISTRICT IN INDIAN PRAIRIE ILLINOIS. THEY WERE OFFERED OPTIONS FOR 500 MEGABITS, A GIGABIT INTO GIGABIT LAN CONNECTION FOR PRICES RANGING FROM \$610 A MONTH FOR THAT GIGABIT -- 500 MEGABIT CONNECTION, TO \$690 A MONTH FOR THAT TO GIGABIT CONNECTION. IN OTHER WORDS, FOR \$80 MORE THEY WERE OFFERED FOUR TIMES AS MUCH BANDWIDTH. WHEN YOU THINK ABOUT WHAT THAT MEANS, THESE ARE INCREMENTAL COSTS THAT WERE OFFERED AT WAS JUST OVER 1 PENNY PER MEGABIT. SO BUYING IN SCALE REALLY MATTERS. THE SECOND THING THAT SCHOOLS DO BEST PRACTICE RULES AS THEY RUN BETTER PROCUREMENT PROCESSES. THEY DO THEIR HOMEWORK UPFRONT TO UNDERSTAND WHAT OTHERS ARE PAYING AND IDENTIFY ALL THE VENDORS WHO ARE VIABLE. WARREN BUFFETT LIKES TO SAY THAT COMPOUND INTEREST IS THE MOST POWERFUL FORCE IN THE UNIVERSE BUT WHEN IT COMES TO LOWERING BANDWIDTH PRICES, I WOULD VOTE FOR COMPETITION AND TRANSPARENCY. SIMPLY HAVING ONE NONINCUMBENT PROVIDER, I.E. NOT THE LOCAL TELCO OR CABLE COMPANY IN A BIDDING PROCESS HELPS TO LOWER PRICES AS MUCH AS 50 PERCENT. SO COMPETITION AND TRANSPARENCY ARE VERY IMPORTANT. THIRD, TAKE ADVANTAGE OF ALL THE AVAILABLE OPTIONS YOU HAVE. FOR WAN THAT MEANS FIBER WHICH HAS BECOME ONE OF THEIR PRIMARY SERVICES THAT CLECS ARE SELLING TO SERVICES AND BUSINESSES AND CAN LOWER COSTS BY UP TO 70 PERCENT EVEN FOR THOSE TOP QUARTILE PURCHASERS. FOR INTERNET ACCESS IT MEANS LEVERAGING GONE IN, BACKHAUL PROVIDERS SUCH AS ARNIE NETWORKS TO CUT THE COST OF TRANSPORT TO INTERNET EXCHANGE POINT WHERE BANDWIDTH AND INTERNET ACCESS COSTS AS LITTLE AS 50 CENTS PER MEGABIT.

SO \$22 IS WHAT WE SEE AS THE AVERAGE AND INTERNET EXCHANGE POINT [INAUDIBLE] AND FINALLY FOR THOSE THAT CAN'T GET AFFORDABLE BANDWIDTH FROM CARRIERS, IT MEANS SELF PROVISIONING THEIR OWN FIBER NETWORKS.

AND WE SEE THAT BEING DONE MORE AND MORE OFTEN WHEN PEOPLE DON'T HAVE AN ALTERNATIVE.

FINALLY,, THE LAST THING THAT THEY DO IS THEY LEVERAGE THE CONSORTIA AND THEY DO THIS IN PART TO AGGREGATE DEMAND AND IN PART TO MAKE THEIR RFP PROCESS MORE ATTRACTIVE TO POTENTIAL NEW ENTRANTS THE WAY OF GETTING MORE PEOPLE TO THE TABLE, BUT ALSO, AND I THINK THIS IS VERY APROPOS GIVEN THE DISCUSSION THIS MORNING TO AGGREGATE EXPERTISE.

WHEN YOU HAVE A CONSORTIA IT MEANS YOU CAN AFFORD THE KIND OF EXPERTISE THAT JENNIFER HAS IN PHILADELPHIA BECAUSE SHE'S A LARGE DISTRICT OR THAT PHIL AND JOE HAVE BEEN ABLE TO PROVIDE IN NORTH CAROLINA OR JEFF IN MAINE BECAUSE YOU AGGREGATE THAT EXPERTISE AND WHEN YOU HAVE THAT EXPERTISE YOU WILL RUN A BETTER PROCUREMENT PROCESS.

SO OUR STUDY SHOWS IF WE WANT EVERY TEACHER AND STUDENT TOOK THE OPPORTUNITY TO TAKE ADVANTAGE OF THE POWER OF DIGITAL LEARNING WE NEED TO LOWER THE COST OF WAN CONNECTIONS TO \$750 FOR GIGABIT AND INTERNET ACCESS TO \$3.

PRICES AT THE TOP QUARTILE DISTRICTS IN OUR STUDY ARE ALREADY ACHIEVING AND PRICES IN WHICH THE COMMISSION CAN MAKE AVAILABLE TO ALL OF OUR SCHOOLS AND LIBRARIES BY ENSURING THEY CAN GET THE BENEFITS OF ECONOMIES OF SCALE, BY INCREASING TRANSPARENCY AROUND COST AND POTENTIAL SUPPLIERS AND BY ENHANCING COMPETITION AND MAKING IT EASIER FOR NON-INCUMBENTS TO PARTICIPATE IN BIDS, BY ENABLING SCHOOLS TO TAKE ADVANTAGE OF ALL THE OPTIONS OUT THERE INCLUDING DARK FIBER AND BY ENCOURAGING CONSORTIA PURCHASING.

THAT'S WHAT WE FOUND.

>>: THAT'S SUPER HELPFUL OVERVIEW TO START OFF WITH.

I WANT TO MAYBE IN THE SAME VEIN GO NEXT TO SOME OF THE STATES WHO ARE WORKING ON THIS.

I THINK YOU GUYS HAVE SORT OF A CROSS DISTRICT PERSPECTIVE OVER BROAD AREAS SO GARY, JEFF, JOE, I WOULD LOVE TO GET YOUR PERSPECTIVES ON THIS PIECE OF THE PUZZLING GARY STARTING WITH YOU BECAUSE I KNOW YOU JUST DID A BIG STATEWIDE PROCUREMENT ON THIS.

>>: I PROMISE YOU I DID NOT PAY MARGIN TO SAY THIS.

BUT ANYWAY WE HAVE \$750 OR GATE CONNECTION AND HOW DO WE GET THERE.

WE STARTED OUT IN 2006 WITH AN RFP FOR STATEWIDE SERVICES AND LET ME IDENTIFY THAT.

STATEWIDE MEANS STATE GOVERNMENT, UNIVERSITIES, COLLEGES, EVERYBODY IN THE STATE AND STATE GOVERNMENTS.

K.-12 FALLS WITHIN THAT GOVERNING AUTHORITY SO WE COULD OFFER THE SERVICES TO THEM.

MANY OF THEM CHOSE THAT.

SO OVER TIME WE DID THIS CONTRACT IN 2006 AND WE ALSO REVIEW THAT EVERY TWO YEARS SO PRICES DROPPED EVERY TWO YEARS.

I DON'T KNOW IF I CAN SAY SERVICE PROVIDER NAMES IN HERE SO I'LL JUST GIVE THE

INITIALS, THE INITIAL AT&T BUT WHAT WE DID WITH AT&T, THEY SAY THEY DID NOT GET A TEN YEAR CONTRACT, THEY GOT FIVE TWO YEAR CONTRACTS BECAUSE EVERY TWO YEARS WE RENEGOTIATE AND IF YOU DON'T GIVE US BETTER PRICING THEN WE WILL CANCEL THE CONTRACT AND WE DID.

HOW DID WE LEARN FOR PRICING, WE TALKED TO PEOPLE JUST LIKE WE TALKED TO OTHER STATES AND WE FOUND OUT THAT NEBRASKA HAS 2-DOLLAR A MAKE INTERNET AND WE GO TO OUR VENDOR AND SAY WHY CAN'T WE GET THAT.

SO THAT DRIVES THE PRICING DOWN FOR INTERNET SO HOW DO YOU DROP THE PRICING DOWN FOR CONDUCTIVITY YOU DO THAT THROUGH LOCAL COMPETITION AND WE HAVE SOME TREMENDOUS COMPETITION THAT IS STEADILY DRIVING PRICING DOWN BECAUSE YOU HAVE THE STATE MASTER CONTRACT RATE AND COMPETITION COMES TO YOU.

THEN WE HAVE TWO-YEAR REDETERMINATION AND COMPETITION SAID WE HAVE TO BEAT THAT SO IT GOES HERE AND YOU SEE WHAT IS HAPPENING.

COMPETITION IS DRIVING THE RATES DOWN.

AND SOONER OR LATER SOMEBODY IS GOING TO HAVE TO SCREAM UNCLE OR SOMETHING BECAUSE IT CAN ONLY GO SO FAR BUT THAT IS HOW WE HAVE DONE THAT IS MADE AVAILABLE TO THE SCHOOLS AT THEIR CHOICE TO USE THE STATE MASTER CONTRACT. THEY DON'T HAVE TO DO IT.

THEY CAN DO THEIR OWN PROCUREMENT.

WE DO OUR BEST TO MAKE THAT EASY FOR THEM AND WE DID HANDLE THE CONTRACT ISSUES AND THEY HAVE TO FILL UP BEFORE 71.

AND USE OUR CONTRACT AND THEN WE MAINTAIN THE CONTRACT IN THE SENSE THAT AS TECHNOLOGY CHANGES, THE CONTRACT CHANGES.

WE DON'T HAVE TO GO OUT AND REBID BECAUSE YOU GO FROM A FRAMED ATM TO METRO, THAT JUST CHANGES THE TECHNOLOGY AND THEREFORE, THAT IS WITHIN THE SCOPE OF THE CONTRACT, BUT WITHIN THE SCOPE OF THE ORIGINAL PROCUREMENT.

SO THAT IS HOW WE LEVERAGE IT AND HAVE DRIVEN PRICES DOWN AND CONTINUE TO DRIVE IT DOWN.

EVERY TWO YEARS WE REDO IT.

>>: IT'S A PLEASURE TO BE HERE TODAY.

I'M GOING TO TRY TO GIVE YOU AN OVERVIEW BECAUSE WE ARE A PRIVATE NONPROFIT AND IT'S ONE OF THE ORGANIZATIONS THAT WAS INVOLVED IN THIS PARTICULARLY TODAY FROM PHIL AND MIKE IS HERE WHO IS OUR CIO AND JANINE WHO IS OUR COORDINATOR SO YOU HAVE PUBLIC AND PRIVATE ORGANIZATIONS THAT HAVE BEEN PART OF THIS.

IN 2005 WE CRAFTED A VISION FOR THE STATE AND THAT VISION WAS TO GET BACK WOULD'VE LEVEL OF CONDUCTIVITY TO ALL OF OUR SCHOOLS IN NORTH CAROLINA AND TODAY WE STAND WITH 98 PERCENT OF OUR SCHOOLS SERVED BY DEDICATED FIBER AND WITHIN THE NEXT COUPLE OF YEARS WE ARE WAITING FOR WIDE AREA NETWORK CONTRACTS TO RUN OUT IN A COUPLE OF DISTRICTS AND WE WILL BE 100 PERCENT.

WHAT WERE THE ELEMENTS OF THAT?

THE ELEMENTS WERE TO FIGURE OUT WHO NEEDED TO BE AT THE TABLE.

THE PRIVATE SECTOR SERVICE PROVIDERS, WE OPERATE THE BACK BONE EDUCATION NETWORK IN THE STATE, PLANNING ORGANIZATIONS CREATED A MASTER PLAN AS PART OF HIS ORGANIZATION AND THE DEPARTMENT OF PUBLIC INSTRUCTION AND ALSO THE STATE I.T. US, WHICH IS OUR CONSORTIUM ALL NEEDED TO BE AT THE TABLE NINE YEARS AGO WHEN

WE STARTED THIS JOURNEY, BUT WE START WITH A GOAL AND A JOURNEY.
AND WE HAD TO PUT INCENTIVES IN THERE FOR EVERYONE SO OUR INCENTIVE FROM THE STATE LEVEL WAS TO APPROPRIATE A STATE CONDUCTIVITY FUND THAT REIMBURSED THE STATES AND THE SCHOOL DISTRICTS FOR THEIR OUT OF POCKET FOR WAN AND INTERNET CONNECTIVITY FROM THE STATES OF THEIR OUT OF POCKET THAT E-RATE DID NOT COVER AND THAT WAS KEY TO GETTING THEM TO ADOPT AND MOVE FORWARD.
WE TOOK ADVANTAGE OF OPPORTUNITIES THAT WERE THERE.
WE HAD MUCH OF OUR NETWORK WAS LEASED BEFORE THE BEAT-UP PROGRAM.
WE WON TWO LARGE VTOP AWARDS AND RAISED \$40 MILLION OF PRIVATE FUNDING INCLUDING \$10 MILLION FROM MCNC ENDOWMENT.
THAT WAS NOT ALONE.
WE DO NOT HAVE TO SELL A FIBER TO GET IT AND WE BUILT IN 1800-MILE NEW FIBER NETWORK THROUGHOUT THE STATE TO SERVE THE ANCHOR INSTITUTIONS AND GET TO THAT IN A MINUTE.
THE SECOND PIECE WAS NO WE HAVEN'T OWNED NETWORK WE CAN SCALE.
THE THIRD PIECES WE ALREADY HAD INCUMBENTS PEOPLE ON THE NETWORK.
WE HAVE THE UNIVERSITY SYSTEM IN THE STATE AND THE COMMUNITY COLLEGE SYSTEM AND WE WERE ALSO THE ENTITY THAT WON THE BID TO DISTRIBUTE HEALTHCARE FUND REIMBURSEMENT IN THE STATES TO THE RURAL HEALTHCARE PILOT PROGRAM AND WE AGGREGATED ALL OF THAT DEMAND ON ONE NETWORK AND WHAT WE'VE BEEN ABLE TO DO AS A RESULT OF THAT IS SEE THE RESULTS WE HAVE, 90 PERCENT OF THE SCHOOLS DEDICATED FIBER.
EVERYBODY OPTED IN.
ALL PUBLIC SCHOOL DISTRICTS OPTED INTO THE CONSORTIA AND WE WERE ABLE TO LOWER PRICES TO THE POINT STATEWIDE THAT EVAN WAS TALKING ABOUT FOR CONDUCTIVITY AND FOR INTERNET.
WE ARE PRETTY MUCH AT THOSE LEVELS NOW, NOT SOME OF OUR GIG CONNECTIONS WE ARE DEPENDENT ON SERVICE PROVIDERS IN RURAL AREAS BUT WE ARE CLOSER THAN \$750 PER GIG PER CIRCUIT AND WE WORKED TOGETHER TO MAKE SURE THAT HAPPENED.
MY LESSON IN THIS IS THE MORE YOU CAN AGGREGATE, THE BETTER.
THE MORE YOU CAN AGGREGATE THE BETTER.
THINK ABOUT THE ANCHOR INSTITUTIONS, YOU DON'T JUST THINK ABOUT K-12 IN A SILO. DON'T THINK ABOUT LIBRARIES IN A SILO BUT THINK ABOUT UNIVERSITY SYSTEM SCHOOLS AND NONPROFIT HOSPITAL'S, GETTING THEM IN THE SAME BACKGROUND AND FOR THE RURAL AREA THE INFRASTRUCTURE HAS TO GET BUILT ONCE IT WILL NOT BE BUILT THREE TIMES TO SATISFY [INAUDIBLE] IT'S GOING TO GET BUILT ONCE.
SO YOU HAVE TO BRING ALL THOSE PEOPLE TO THE TABLE, HAVE INCENTIVE FOR EACH OF THEM AND THEN INCENT THEIR COLLABORATION.
AGAIN, I THINK THE END RESULT OF WHAT WE'VE DONE ACROSS TWO ADMINISTRATIONS AND A CHANGING PARTY IN THE GOVERNOR'S OFFICE IS WE'VE BECOME, AS EVAN SAID, SMART BUYERS.
WE'VE AGGREGATED DEMAND AT THE STATE LEVEL.
WHEN YOU DEAL WITH THE STATE OF NORTH CAROLINA OR US THAT'S A LARGE CONTRACT TO GET FOR PRIVATE SECTOR SERVICE SUPPLIER.
AND WHEN YOU GO AFTER THAT LARGE CONTRACT YOU WILL GET BEST PRICE.

AS GARY SAID, YOU WILL GET INCENTIVE TO KEEP THAT PRICE COMPETITIVE BECAUSE IT IS SUCH A LARGE CONTRACT.

SO WE JUST BECOME SMART BUYERS BY BUILDING THAT COLLABORATION [INAUDIBLE] AND AGAIN IT IS ACROSS THE GOVERNOR'S OFFICE, THE STATE LEGISLATURE WHO HAD TO APPROPRIATE THE FUNDS FOR THE COMIC TO THE INITIATIVE, IT'S ACROSS PRIVATE ORGANIZATIONS, ALL OF OUR LARGE SERVICE PROVIDERS THAT OPERATE IN THE STATE. IT'S PUBLIC ENTITIES LIKE N. C. STATE UNIVERSITY AND THE PRIVATE ORGANIZATION AND THE BACKBONE NETWORK AND IT'S BEEN VERY HARD TO DO.

IT'S VERY COMPLEX BUT THERE IS NO EXCUSE FOR NOT DOING IT.

THE MODEL IS THERE AND YOU GOT TO AGGREGATE.

YOU'VE GOT TO THINK OUTSIDE YOUR SECTOR AND COMMUNITY ANCHOR ORGANIZATIONS AND WORK TOGETHER.

>>: A SIMILAR QUESTION TO YOU AS WE HEARD FROM THE CHAIRMAN THIS MORNING, YOU SUCCESSFULLY CONNECTED A LOT OF SCHOOLS AND INCREASINGLY LIBRARIES ACROSS THE RURAL STATE.

AS WE UNDERSTAND THAT YOU'VE DONE IT WITH A MIX OF DIFFERENT TYPES OF PROVIDERS AND SO INTERESTED IN SORT OF YOUR STRATEGY AND YOUR REACTION TO SOME OF THE PRICE NUMBERS.

>>: WE ARE NOWHERE NEAR AS DESCRIBED AND PROBABLY 70 TO 80 PERCENT OF OUR LOCATIONS ACROSS THE STATE.

PRIMARILY BECAUSE WE ARE IN THE END OF A MULTIYEAR CONTRACT AND I SUSPECT THESE WILL GO DOWN.

ONE OF THE THINGS, SOME OF US CAN ALL COMPETE ABOUT HOW RURAL OUR STATES ARE AND WHO HAS THE BIGGEST CHALLENGES, LOTS OF CHALLENGES IN THE COUNTRY, NO QUESTION ABOUT IT.

THEY JUST VARY FROM PLACE TO PLACE IN THE SAME THING WITH DETROIT POLITICS ARE LOCAL SO THE SOLUTION OF HOW YOU ORGANIZE WILL BE DIFFERENT FROM STATE TO STATE.

THE KEY POINT IS YOU NEED TO GET ORGANIZED AND YOU NEED TO AGGREGATE AS EVERYBODY HAS BEEN SAYING TODAY THAT DEMAND AND HAVE SOME BUYING POWER AND LEVERAGE BEST PRACTICES.

WE'VE ALSO LEVERAGED A BEAT-UP AWARD IN THE STATE THAT BUILT THE MIDDLE MILE BACKBONE TO THE RURAL PARTS OF THE STATE AND IT STARTED TO DELIVER TO OUR FIBER CONNECTIONS TO THE VARIOUS SCHOOLS AND LIBRARIES.

LIGHTING THOSE DARK FIBER STRANDS UP OURSELVES.

AND YOU NEVER WANT TO FORGET THE LIBRARIES.

THE KEY PART THERE IS WHAT WE ARE FINDING IS IN THIS CASE, VTOP FEDERAL FUNDS PROVIDED THAT INITIAL INVESTMENT SO WE GET AN IMMEDIATE RETURN ON INVESTMENT. WHEN THE PRIVATE SECTOR DOES IT, THEY NEED TO MAKE A RETURN.

THAT'S THE AMERICAN WAY.

SO WHAT WE FIND IS THEY HAVE TO HAVE AN OPPORTUNITY, BUSINESS OPPORTUNITY TO NOT ONLY RETURNED, GET THEIR RETURN ON THE INITIAL INVESTMENT BUT MAXIMIZE PROFIT FROM THAT POINT FORWARD SO WE DON'T SEE THE BANDWIDTH COST DROPPING ONCE THEY HAVE RECOVERED THEIR BUILD UP COSTS.

WHAT WE SEE IS THERE TENDS TO BE, THINGS GET PRICED AND YOU GET A THREE YEAR

RETURN ON THAT INVESTMENT.

BUT IT'S NOT A DRAMATIC DROP IN PRICE AFTER THAT THREE YEARS AND THAT'S THE PRIMARY DIFFERENCE FOR HOW TO APPROACH THIS.

IN OUR CASE, WE ARE SMALL.

GEOGRAPHICALLY LARGE, FINANCIALLY AND PEOPLE COME TO SMALL.

WE DID NOT HAVE STATE FUNDS.

WE DID NOT HAVE UNIVERSITY FUNDS TO DO THE MATCH FOR THE VTOP PROGRAM SO WE FOUND PRIVATE INVESTORS TO GO OUT AND MAKE THAT 20 PERCENT MATCH.

IT WORKS OUT WELL FOR ME BECAUSE ONE OF THE THINGS WE ARE DOING WHEN WE LEASE DARK FIBER FROM THEM AND THEY BUILD IT OUT AND THAT THEY HAVE A MARKETING ARM TO GO RESELL THAT TO OTHER SERVICE PROVIDERS SO WHEN A COMMUNITY ANCHOR ENTERS INTO A CONTRACT TO HAVE FIBER INSTALLED TO THE LIBRARY OR TO THE SCHOOLS, THE SERVICE PROVIDER, THE DARK FIBER SERVICE PROVIDERS HAVE THAT ANCHOR CUSTOMER TO GO AND BUILD THAT ROUTE SUCH THAT IT CAN BE AN ADVANTAGE TO THE ENTIRE COMMUNITY.

THE SECOND PART THAT IS GOOD FOR US ON THAT IS I'M A REALIST.

I'VE BEEN INVOLVED K.-12 AND PUBLIC LIBRARY NETWORKS FOR 25 YEARS I'M NOT FOOLISH ENOUGH TO THINK IT WILL BE THAT WAY FOREVER.

THE WORLD CHANGES AND OPEN ACCESS FIBER TO THE SCHOOLS AND LIBRARIES, WHEN WE DISAPPEAR AND WHEN THE CONSORTIUM BREAKS UP AND WHATEVER HAPPENS IN THE FUTURE, THEY ARE NOT TIED TO THE SERVICE PROVIDER THAT GOT THE FUNDS FROM THEM TO BUILD OUT.

THEY HAVE THE OPPORTUNITY TO HAVE COMPETITION TO PROVIDING THEIR SERVICES BECAUSE THE FIBER IS OPEN ACCESS AND NONDISCRIMINATORY.

PRIVATE INVESTMENTS GO IN AND YOU ARE LOCKED INTO THAT FROM THAT POINT FORWARD.

>>: WE WILL JUMP INTO THE LIBRARY CONVERSATION AND THEN JOE, COME BACK.

>>: WHAT JEFF AND GARY ARE SAYING, IN GEORGIA WE'VE HAD THE ADVANTAGE AND THE DISADVANTAGE OF BEING IN A STATEWIDE CONSORTIUM FOR OVER TEN YEARS.

AND WHAT WE DID FIND, AS GARY WAS SAYING IS THAT WHEN WE WOULD GO TO THE VENDORS AND ONE VENDOR AT THE TOP THEN ONE VENDOR AT THE BOTTOM AND WE WOULD GO TO THE VENDORS WHEN IT WAS TIME TO TALK ABOUT COMPETITION AND INCREASING THE BANDWIDTH WE ARE SAYING IT'S NOT THE COMPETITION GUIDE, JUST LIKE YOU ARE SAYING AND THEY BASICALLY SAID TOUGH.

AND SO WE WALKED LAST YEAR.

AND WE BROKE UP OUR CONSORTIUM AND THEN WE SAW IT GOING WELL FOR TEN YEARS BUT IT WAS GOING WELL TEN YEARS AGO AND OUR BANDWIDTH NEEDS TO INCREASE INCREMENTALLY AS EVERYONE'S DOES SO WE FOUND THERE WERE OVER 200 VENDOR CONSORTIA SO WE TOOK ADVANTAGE OF THE MARKET.

WE PUT THE SYSTEM SO FORBID, WE FINALLY WRAPPED UP ALL THE CONTRACTS AND IT WAS PAINFUL ADMINISTRATIVELY BUT WHAT WE HAVE BEEN ABLE TO DO IS CREATE MANY CONSORTIA ALONG GENDER LINES COME IN A GEOGRAPHIC LINES AND THAT OUT OF FISCAL WORK.

IT'S AN EXPERIMENT, BUT WHAT WE HAVE BEEN ABLE TO DO IS GO FROM AN AVERAGE OF 3 MEGABYTES PER BRANCH TO AN AVERAGE OF -- WE INCREASED OUR BANDWIDTH 28 TIMES IN GEORGIA FOR HALF OF WHAT WE WERE SPENDING.

BECAUSE OF COMPETITION.

AND I WANTED TO TAKE ADVANTAGE OF THE MARKET.

I DID NOT WANT TO BE BEHOLDING TO A VENDOR TO DICTATE TO ME WHAT I CAN AFFORD IF THE MARKET SAYS SOMETHING ELSE.

THIS IS NOT A SUSTAINABLE MODEL.

WE HAVE TO BE ACTIVE AND FLEXIBLE AND BE ABLE TO TAKE ADVANTAGE OF POSSIBILITIES TO JUMP ON THAT AS SOON AS IT'S AVAILABLE BUT NOW WE CAN.

WE ARE FLEXIBLE ENOUGH BECAUSE TO FOLLOW-ON WHAT EVAN SAID, WE ARE ABLE TO AGGREGATE AT THE STATE LEVEL.

WE HAVE THE BUYING POWER BECAUSE BE THE EXPERTISE BECAUSE WE KNOW THE LANDSCAPE AND WE ARE ABLE TO NEGOTIATE ON BEHALF OF EVERY SYSTEM.

AND WE COVER THE BALANCE OF THOSE RATES, BUT THAT IS SECONDARY TO THE BUYING POWER THAT WE HAVE THROUGH LIAISON IN WITH EVERY LIBRARY ON THEIR BEHALF.

SO I KIND OF THINK OF IT AS A MODEL, MAYBE 3.0 SO THERE WAS A LESSON LEARNED THERE FOR US AND I JUST WANTED TO PUT THAT OUT THERE.

>>: SO NO PRESSURE, BUT WE HAVE OUR FIRST TWEAKED AND IT'S FROM SENATOR ANGUS KING AND HIS STAFF.

[LAUGHING]

THAT I'M ACTUALLY NOT GOING TO DIRECT A QUESTION TO YOU BECAUSE IN SOME WAYS YOU AND GARY AND JOE HAVE ALREADY ANSWERED THIS QUESTION FOR YOUR STATE I'M GOING TO DIRECT IT TO FLORIDA SO WHAT THEY HAVE ASKED IS HOW DO WE ENSURE THAT E-RATE MONITORIZATION PROVIDE ADEQUATE RESOURCES FOR SCHOOLS AND LEVERS TO COMPLETE AND WE'VE HEARD FROM NORTH CAROLINA AND MAINE IN MISSISSIPPI ALL WHO HAVE SUBSTANTIAL RURAL REPRESENTATION THAT IT IS POSSIBLE BUT I KNOW RICK, YOU ARE STRUGGLING WITH THIS IN THE PANHANDLE OF FLORIDA CITY WANT TO TALK TO THIS ISSUE.

>>: I'LL TAKE A MINUTE TO EXPLAIN RURAL FLORIDA ACTUALLY THERE ARE THREE EDUCATIONAL CONSORTIA IN FLORIDA, THE NORTHEAST EDUCATION CONSORTIUM IN THE CENTRAL PART OF THE STATE IN HEARTLAND EDUCATIONAL CONSORTIUM IN THE SOUTHERN PART OF THE STATE AND THE PANHANDLE AREA AND THESE NUMBERS ARE IMPORTANT AND ALL THREE OF THOSE CONSORTIA MAKE UP 32 OF THERE 67 SCHOOL DISTRICTS. WITHIN THAT 32 SCHOOL DISTRICTS IT COMPRISED 5.8 PERCENT OF THE STUDENT POPULATION IN THE STATE OF FLORIDA.

IT'S DRIVEN BY SEATS AND THE NUMBER OF STUDENTS.

AND WE WOULD LIKE TO SHARE WITH YOU ONE QUICK SCENARIO AND ALL 32 OF THOSE DISTRICTS WE HAVE 154,000 STUDENTS SO EVERY DOLLAR THAT COMES OUT OF TALLAHASSEE WHICH THEY JUST GOT THROUGH WITH THEIR LEGISLATIVE SESSION WE GET 5 CENTS OF THAT DOLLAR.

AND WE TOLD THE LEGISLATURE THIS YEAR LOOKING AT SOME OF THE DISCUSSIONS THAT WE NEED \$500 MILLION TO CONNECT THE SCHOOLS WITHIN THIS CONSORTIUM.

THERE ARE 289 SCHOOLS AND WE DID A DETAILED STUDY TO LOOK AT WHAT YOU ARE TALKING ABOUT THERE AND WE LOOKED AT RUNNING FIBER AND THE COST IS 500 MILLION FOR THOSE 289 SCHOOLS AND THE FLORIDA LEGISLATURE FUNDED \$250,000 PER DISTRICT TO SPEND ON WIFI AND TECHNOLOGY AND THE WISH LIST THEY HAVE.

OBVIOUSLY, WITH THAT TYPE OF FUNDING SCENARIO, WE WILL NEVER GET THERE IN THE

STATE OF FLORIDA.

MANY PEOPLE LOOK AT FLORIDA AS BEING ORLANDO, TAMPA AND THOSE AREAS BUT WHEN YOU LOOK AT THOSE THREE CONSORTIA AVERAGE SCHOOL IS AROUND 500 OR 600 STUDENTS.

THEIR 390 SCHOOLS IN THOSE CONSORTIA BUT WHAT'S SIGNIFICANT IS THERE IS ONE DISTRICT IN THE SOUTHERN PART OF THE STATE THAT HAS 320 SCHOOLS AND IT HAPPENS TO BE ONE DISTRICT IN ONE OF THE LARGEST IF NOT THE LARGEST IN THE NATION.

IN AN APPROPRIATIONS COMMITTEE FUNDING WAS DISCUSSED.

AND YOU REMEMBER WE MENTIONED 500 MILLION, THAT PARTICULAR DISTRICT LEVIED A BOND ISSUE AND GENERATED 1.5 MILLION TO TAKE CARE OF THERE 320 SCHOOLS.

ALL 32 SCHOOL DISTRICTS IN THE CONSORTIA WAS TO POOL ALL OF THEIR TAX REVENUE, EVERY PENNY THAT BY LAW THEY COULD APPLY AND PUT IT IN A BUCKET FOR A WHOLE YEAR THEY WOULD NOT GENERATE WHAT THAT SCHOOL DISTRICTS COULD IN ONE MONTH.

SO WHEN WE TALK ABOUT THAT, AND I LIKE TO MENTION -- JUST REALLY QUICKLY A COUPLE OF SCENARIOS AND HOW THAT PLAYS OUT, TUBMAN COUNTY THE HOME DISTRICT FOR NORTHEAST EDUCATION CONSORTIA, THE INDUSTRY STANDARD TO RUN FIBER IS \$26,250 PER MILE.

IN SUTTON COUNTY THERE'S 223.71 MILES OF FIBER THAT IS NEEDED TO DELIVER THE 100 MEGABIT TARGET AND BY THE WAY,, ALL THREE CONSORTIA ON AVERAGE 17 MEGS AVERAGE. SO WE ARE WAY BELOW THE TARGET RIGHT NOW.

BUT TO GET TO THAT TARGET, THE COUNTY OF PIKEMEN WOULD HAVE TO COME UP WITH \$5,872,375.

REMEMBER WITH THE STATE APPROPRIATION OF 250,000.

THEY ARE NOT GOING TO GET THERE.

OUR DISCOUNT RATE FOR E-RATE IS 80 PERCENT IN THAT PARTICULAR DISTRICT WHICH MEANS EVEN WITH E-RATE DOLLARS WE WOULD HAVE TO COME UP WITH \$1,174,474 JUST FOR THE E-RATE.

PROVIDED WE COULD USE E-RATE FUNDS FOR INFRASTRUCTURE WHICH CURRENTLY UNDER THE RULES, WE CAN'T.

ANOTHER SCENARIO QUICKLY IS ANOTHER SUPERINTENDENT WHO RESIDES IN A COUNTY WHERE \$350 MILLION OF SIMMONS MONEY WAS GIVEN TO A CARRIER TO RUN FIBER.

AND THAT CARRIER RAN IT RIGHT BY THE SCHOOL, BUT NOW THEY WANT, THEY WON'T ALLOW THE SUPERINTENDENT OF SCHOOLS TO TAP IT.

THE CHARGE PER MEGABIT FOR THAT RIGHT NOW IS APPROXIMATELY 25-30 PERCENT MORE THAN THE STATE CONTRACT IS PRICED.

WE FIND THROUGHOUT ALL THOSE RURAL SCHOOLS THAT STATE CONTRACTS, PROVIDERS, THERE ARE THREE SCENARIOS THAT DRIVE THIS.

ONE ACCESS.

IN THIS CASE THE SUPERINTENDENT HAS ACCESS, BUT HE'S NOT ALLOWED TO GET ON THERE BECAUSE IT'S CONTROLLED AND WE'VE NOT BEEN ABLE TO BE TOLD OR IDENTIFY WHY.

NUMBER TWO, IS THAT SOME DISTRICTS HAVE ACCESS TO THE DISTRICT OFFICE, BUT NOT CONNECTIVITY BETWEEN THE SCHOOLS AND USING THE PUTMAN COUNTY STORY.

ANOTHER DISTRICT IS WASHINGTON COUNTY, AND I JUST DID THREE SCENARIOS AND ALL THREE CONSORTIA WHERE THERE ARE TWO HIGH SCHOOLS IN THAT COUNTY, WASHINGTON COUNTY AND IN WASHINGTON COUNTY FROM THE DISTRICT OFFICE TO THE SECOND HIGH

SCHOOL IS 15 MILES AND IF WE WERE TO RUN FIBER IT WOULD COST \$390,000 TO RUN THAT ONE PIECE OF FIBER.

ALL THE CARRIERS WE HAVE APPROACHED AND ASKED TO DO THIS HAVE SUMMARIZED THEIR FUTURE BUSINESS PLANS LIKE THIS, WE ARE NOT BUILDING BRIDGES TO NOWHERE.

AND WE HAVE DETERMINED THAT THE 287 OF THE 299 SCHOOLS ARE BY DEFINITION NOWHERE IN THEIR FUTURE PLANNING SO WE KNOW THAT TWO THINGS HAVE TO HAPPEN EITHER WE HAVE TO ENGAGE A HIGHER LEVEL OF COMPETITION WITHIN THE CARRIER OR WE HAVE TO ASK UNIVERSAL SERVICE FUNDS TO AMEND THE RULES WHERE WE ARE ABLE TO OBTAIN FUNDING TO EITHER BUILD IT OURSELVES OR CONTRACT WITH -- OR PARTNER WITH THE VENDOR TO DRIVE THE PRICE I LOVE YOUR SCENARIO AND YOUR DATA AND WE SEE ALL OF THAT COMING AND WE SEE THE POTENTIAL THERE.

WE CANNOT DO THAT THOUGH AND FLORIDA IT'S VERY SIMILAR TO CURRENT FCC PROGRAM, WE GET BUDGETS ANNUALLY IN FLORIDA SO WE GO INTO A MULTIYEAR BUDGET AND WE ALWAYS HAVE TO PUT AT THE END OF THAT SUBJECT TO STATE FUNDING AND IT GIVES VENDORS A LITTLE PAUSE WHEN WE START LOOKING AT CONTRACTS.

ONE LAST THING I'D LIKE TO MENTION, WE ARE PART OF AN ASSOCIATION OF EDUCATION PURCHASING AGENCIES.

26 STATES BUYING SCHOOL SUPPLIES RIGHT NOW.

THERE IS NO REASON WHY WE ALL CAN'T WORK TOGETHER TO DRIVE THE PRICES DOWN NOT ONLY STATE-BY-STATE, BUT NATIONALLY, THANK YOU.

>>: A LOT ON THE TABLE.

THANK YOU.

I SEE JOE NOTTING.

LET ME FOR THE RECORD CLARIFY THAT E-RATE DOES PROVIDE SUPPORT FOR BUILDING FIBER TO SCHOOLS.

SO HAPPY TO FOLLOW UP WITH YOU.

I UNDERSTAND THERE'S A LOT OF MONEY YOU HAVE TO COME UP UNDER YOUR CURRENT DISCOUNT RATE, BUT I WANT TO CORRECT THE RECORD SINCE THERE SO MANY PEOPLE WATCHING ON THE WEB AND IN THE ROOM THAT WE DO PROVIDE INFRASTRUCTURE SUPPORT.

AND ACTUALLY WHILE I'M AT IT, IN AN EARLIER PANEL SOMEONE SUGGESTED THAT THE ACTIVE USE OF AN AUDIT WAS TO HOLD UP FUNDING.

THAT'S NOT CORRECT EITHER.

I JUST DON'T WANT ANYONE WHO GETS A NOTICE THEY ARE BEING AUDITED TO THINK THERE'S A HOLD ON THEIR FUNDING.

THAT'S NOT HOW IT WORKS.

SO JOE.

>> THREE POINTS I WANTED TO MAKE LISA.

FIRST OF ALL, JEFF AND I DID NOT MENTION IT BUT MAINE, NORTH CAROLINA AND ABOUT 20 OTHER STATES PARTICIPATE IN WHAT WE CALL THE QUILT CIS BID COMMODITY INTERNET SERVICE AND WE AGGREGATE INTERNET DEMAND ACROSS ABOUT 20-25 STATES SO WE ARE BUYING TERABITS OF INTERNET AND GETTING PRICES BETTER THAN THE \$3 PER MAKE, WHICH IS GREAT.

THE SECOND THING IS JEFF BROUGHT UP A REALLY GOOD POINT AND THEN EMILY KIND OF CONFIRMED IT, WE ARE SEEING CASES NOW WHERE E-RATE FUNDING WAS USED TO BUILD

FIBER IN THE DISTRICT FIVE YEARS AGO AND IT'S NOW PASSING ALONG THE RECOVER COST TO THE DISTRICT AND IS CLEC IS COMING IN AND UNDERBIDDING SUBSTANTIALLY THAT FIRST FIBER BUILDER AND THAT CLEC IS NOW COMING IN AND REBUILDING FIBER THAT THE ORIGINAL VENDOR BUILT FIVE YEARS AGO AND THIS IS SUPPOSED TO BE A 20 YEAR ASSETS OF SEEMS TO BE SOMETHING IN THE PROGRAM NEEDS TO ADDRESS THAT BECAUSE WE ARE SPENDING CAPITAL TWICE IN FIVE YEARS THAT FOR A 20 YEAR ASSETS AND THAT DOES NOT MAKE SENSE.

I CAN POINT TO TEN DISTRICTS IN NORTH CAROLINA WHERE THE CLEC VENDOR BIT ABOUT 1/3 OF THE COST FOR A YEARLY WAN MANAGEMENT AND BUILDING THE FIBER THAT THE ENCUMBER WHO HAD THE FIBER IN THE GROUND BID.

WE NEED TO LOOK AT THAT BECAUSE THAT'S NOT AN EFFICIENT WAY AND WE WILL NOT SCALE THE PROGRAM WITH THAT.

THE LAST POINT I WANTED TO MAKE IS, EMILY YOU TOOK A BIG RISK WHEN YOU BROKE THE CONTRACT, BUT WHAT WE FOUND IS WE HAVE A REALLY ROBUST CLEC AND TELEPHONE COOPERATIVE GROUP IN NORTH CAROLINA AND WE FOUND THOSE ARE LOCALLY OWNED AND LOCALLY OPERATED IN DIFFERENT RETURN ON CAPITAL CALCULATION.

THEIR BOARDS ARE LOCAL AND THEY ARE GREAT GROUP OF FOLKS TO DEAL WITH TO INCENT AND CREATE COMPETITION.

>>: STACY AND WILL AND THEN SOME OF THE DISTRICTS IN THIS CONVERSATION AT THE STATE AND REGIONAL LEVEL.

>>: LISTENING TO ALL THE DIFFERENT MODELS.

BEFORE I WORKED FOR PENNSYLVANIA I WAS A LIBRARIAN AND IN 2000 WE RECEIVED A GRANT FROM THE GATES FOUNDATION THAT HELPED US LOOK AT HOW LIBRARIES WERE CONNECTED AND TO BRING TOGETHER PARTNERS ACROSS THE STATE WHO HAD THAT TO FIGURE OUT HOW COULD WE'VE LEVERAGED NETWORKS ALREADY INVESTED IN BY THE STATE TO ALSO SUPPORT OTHER ANCHOR INSTITUTIONS LIKE LIBRARIES.

MY COLLEAGUES CONTINUED THE WORK AND RIGHT NOW WE ARE LOOKING AT HOPEFULLY BUDGETING PAST TO SUPPORT THE CONNECTING OF PUBLIC LIBRARIES TO THE SCENIC BACKBONE, WHICH IS THEIR EDUCATION NETWORK.

SO AGAIN LEVERAGING A STATEWIDE NETWORK.

PENNSYLVANIA, WE ARE CURRENTLY MAPPING WHERE ALL THE LIBRARIES ARE LOCATED AND LOOKING AT WHAT ARE THE NETWORKS THAT CURRENTLY EXIST WHERE WE COULD LEVERAGE CONNECTIVITY.

SO WE ARE LOOKING AT OUR TIMBER NETWORKS AND THEIR ACADEMIC NETWORKS AND SEEING WHERE WE CAN CONNECT LIBRARIES AND WE ARE LOOKING AT THE EMERGENCY NETWORKS BECAUSE OUR LIBRARIES ARE FIRST RESPONDERS WHEN THERE ARE EMERGENCIES.

PEOPLE GO TO THE LIBRARY FOR CONDUCTIVITY AND POWER AND WE ARE ALSO LOOKING AT THE OTHER EDUCATION NETWORKS AND THROUGH THOSE WE ARE HOPING WE CAN LEVERAGE PARTNERSHIPS AND ALSO BRING BETTER CONDUCTIVITY TO COMMUNITIES.

>>: THANK YOU.

I'LL START OFF MY CLEAR -- MY EARLIER POINT AND THEN ASK MY QUESTION.

THE STATE OF IDAHO IS HAVING A CONTRACT REVIEW AND THEY DID CUT OFF FUNDING AS THE FCC INVESTIGATES THE CONTRACT SO WE DID LOSE \$6 MILLION IN E-RATE FUNDING FOR THE CURRENT YEAR BECAUSE OF THAT REVIEW PROCESS FOR OUR STATE.

NOW MY QUESTION, I HEARD A LOT OF TALKING ABOUT ONE GIG TO SCHOOL OR 100 MAKES TO SCHOOLS IN DIFFERENT THINGS LIKE THAT.

I'M CURIOUS WHAT GOAL YOU SET FOR EACH SCHOOL AND SPECIFICALLY IF YOU SET A PER STUDENT RATE.

IDAHO WE SET A PER STUDENT RATE OF ABOUT 35 PER STUDENT, WHICH IS IN THE EARLY 90 BALLOTS SPEED FOR STUDENTS SO IF YOU'RE LOOKING AT A 1-1 INITIATIVE I'M CURIOUS IF YOU SET GOALS IN THAT MANNER.

>>: GREAT QUESTION.

I WANT TO GET THE DISTRICT AROUND THE TABLE INTO THIS SO MAYBE JENNIFER AND KEITH, MAYBE KEITH, STARTING WITH YOU SINCE I KNOW YOU ALSO JUST RAN A COMPETITIVE PROCUREMENT.

SORT OF TALK ABOUT YOUR EXPERIENCES ALONG THE SAME LINE AND MAYBE WORK IN THIS QUESTION ABOUT WHAT YOUR TARGETS ARE AT THE DISTRICT LEVEL.

>>: FIRST I WANT TO ECHO WHAT GARY AND EVANS SAID ABOUT DRIVING MORE COMPETITION TO SCHOOL DISTRICTS.

WE WENT OUT WITH AN RFP THIS LAST YEAR FOR OUR WHITE AREA NETWORK -- WIDE AREA NETWORK.

AND INSTEAD OF JUST SENDING OUT THE FORM WE SENT IT OUT TO OTHER VENDORS BECAUSE THEIR LIMITATIONS WHEN YOU SEND OF THE 470, ONLY CERTAIN PROVIDERS WILL PUT THAT IN THE SCHOOL DISTRICTS.

WHAT HAD HAPPENED OUT OF THAT WAS A VERY COMPETITIVE PROCESS.

WE WERE ABLE TO GET DARK FIBER THAT WILL BE LIT AT TEN GIGABITS TO START OFF WITH THE CAPACITY TO CARRY 100 GIGS IN THE FUTURE.

ONE OF THE PROVIDERS THEY WANTED \$80,000 PER MONTH, WHICH WAS COST PROHIBITIVE. SO RIGHT NOW WE EMBARKED ON A CONTRACT WITH A COMPANY AND WE WILL HAVE THE FIBER FOR \$23,500 PER MONTH WITH REDUNDANCY BUILT IN WITH THE CAPACITY TO INCREASE IT IN THE FUTURE YEARS.

ONE OF OUR CHALLENGES WAS ALWAYS TRYING TO FIGURE OUT HOW MUCH BANDWIDTH THAT WE NEED.

TO GIVE YOU SOME CONTEXT TO BACKUP, SIX COMPREHENSIVE HIGH SCHOOLS AND 4 ALTERNATIVE PROGRAMS 1800-2200 SCHOOLS PER STUDENT SO OUR NEEDS ARE GREAT AS WE ROLL OUT 121 DEVICES AND AS SOMEONE MENTIONED EARLIER, IT'S MORE THAN A ONE TO ONE ENVIRONMENT NOW, IT'S MORE LIKE 2-1 OR 3-1 ENVIRONMENT STUDENTS BRINGING IN ALL THESE DIFFERENT DIVIDE -- DEVICES.

SO FOR US IT WAS ABOUT DRIVING DOWN COMPETITION AND GETTING MORE VENDORS TO COME IN AND GOING OUTSIDE THE BOX CAN GET THE RFP OUT WITH IT AND LETTING VENDORS KNOW THAT THIS RFP IS ON THE STREET TO SUBMIT PROPOSALS.

>>: TO SORT OF GET THE NUMBERS CONVERSATION CENTERED AROUND METRICS, YOU SAID 23,000500 THAT IS PER MONTH FOR SIX SITES AND ABOUT -- WHAT IS THE SPEED OF THOSE CONNECTIONS.

>>: TEN GAMES.

>>: THAT'S 4,000 PER MONTH, TEN GAMES AND ABOUT HALF OF ABOUT HALF OF WHAT EVAN WAS THING IS THE TARGET.

AND WHAT'S THE CAPACITY TO GO TO 100 GIG.

>>: HAVE TO REDO THIS IN THE NEXT COUPLE OF YEARS.

>>: CONTINUE ON IT WILL BE AHOLD OF A CONVERSATION WHERE WE CAN DRIVE SOME COMPETITION AS WELL.

>>: IN 2001 WE STARTED PLANNING FOR TWO GIGS BETWEEN SCHOOLS AND WE DID AN RFP AND SECURED CONTRACTS IN 2014 WE ARE LOOKING AT 20 GIGS BETWEEN OUR SCHOOLS SAME FIBER AND PRICE SO WE HAVE LEVERAGED -- OUR PROVIDER HAD A PRESENCE OUTSIDE OF PHILADELPHIA AND AS YOU WERE SAYING EARLIER, YOU WANT A RETURN ON INVESTMENT AND THEY HAD SKIN IN THE GAME, WE NEEDED THE FIBER SO IT WAS AN EFFECTIVE AGREEMENT FOR BOTH OF US SO WE ARE LOOKING AT 13 YEARS AND NOW GOING TO 20 GIGS SO WITHOUT THE ELECTRONICS AND NOW WE ARE REALLY WHERE WE NEED TO BE.

THERE WAS TALK EARLIER ABOUT CONSORTIUM AND WITH A LARGE URBAN SCHOOL DISTRICTS SUCH AS PHILADELPHIA WE HAVE A CONTRACT.

WE ARE OUR OWN BEHEMOTH AND WE HAVE THE BUYING POWER SO I THINK WHAT IS UNFORTUNATE IS WE HAVE 88 CHARTER SCHOOLS IN PHILADELPHIA THAT HAVE 60-70,000 STUDENTS AND WE CANNOT OFFER -- WE DON'T HAVE THE RESOURCES TO BECOME A SERVICE PROVIDER OR TO BECOME A LEADER OR TO RESPOND TO RFPS SO A CHARTER SCHOOL HAS TO PUT OUT A 470 FOR ACCESS OR CONDUCTIVITY, WE HAVE FIBER IN THE NEIGHBORHOOD, WE HAVE FIBER SITTING AT THE POLE BUT WE DON'T HAVE THE RESOURCES TO BECOME A SERVICE PROVIDER OR TO EVEN PLAY THE CONSORTIUM LEADER AND CONSORTIUMS FOR LARGE URBAN DISTRICTS LIKE OURS, IT'S ALMOST A LIABILITY AND IT'S A SHAME BECAUSE WE WOULD LIKE TO OFFER THAT SERVICE BECAUSE THEY ARE KIDS FOR JUST IN CHARTER SCHOOLS AND SOAP THERE WAS A WAY THE FCC COULD FIND A WAY FOR SMALLER ENTITIES TO TAKE ADVANTAGE OF CONTRACTS WHERE THEY COULD TAKE ADVANTAGE OF ECONOMIES OF SCALE WITHOUT HOLDING US LIABLE FOR ANY TROUBLE BECAUSE WE'VE SEEN MANY TIMES IN A CONSORTIUM REGARDLESS OF THE SIZE IF THERE'S ONE BAD ACTOR THE REST OF THE CONSORTIUM CAN SUFFER AND WE DON'T WANT TO TALK ABOUT FUNDING BEING HELD UP THAT EVERYONE IN THAT CONSORTIUM IS SCRUTINIZED BECAUSE OF THEIR ASSOCIATION SO NOT GUILTY BY ASSOCIATION BUT CERTAIN CIRCUMSTANCES WHERE THAT HAS HAPPENED.

SO THAT WOULD BE INTERESTING IF THERE WAS A WAY WE COULD HELP THE LITTLE FOLKS WITH OUR ECONOMIES OF SCALE.

>>: YOU KNOW IF YOU ARE SERVICE PROVIDERS INTERESTED IN SERVING THAT CHARTER SCHOOLS BECAUSE IT ALREADY HAS SERVICE TO ALL THE SCHOOLS IT SHOULD HAVE SERVICE CLOSE TO THOSE CHARTER SCHOOLS.

DID THEY DID THAT ON THEIR 470?

>>: I AM NOT SURE LISA.

I THINK THE CONVERSATIONS WERE HAD ALONG THE WAY.

I DON'T KNOW EXACTLY WHAT SORT OF TECHNOLOGY EXPERTISE ARE AT THE CHARTER LEVEL WHICH OFTEN CASES THEY ARE TEACHERS AND EDUCATORS AND DON'T HAVE THE TECHNOLOGY TO SAY WE WILL GO TO THE CLEC AND PAY WHAT THE MARKET VALUE IS AND WE WILL GET 100 MEGS TO OUR BUILDING, WHICH IS A SHAME.
FOR LESS PRICE.

>>: IN MY SECTION OF PITTSBURGH AND BUILDING OFF OF WHAT STACY SAID, AND PARTNERING WITH DIFFERENT NETWORKS, WHAT WE HAVE DONE IS OUR REGIONAL EDUCATION SERVICE AGENCY FORMED A CONSORTIUM WHICH ENCOMPASSES THE HOLE

COUNTY ENCOMPASSES PITTSBURGH PUBLIC SCHOOL SO WITHIN OUR AREA, WE HAVE 42 SCHOOL DISTRICTS THAT ARE GROUPED TOGETHER AS A CONSORTIUM.

WE ENDED UP AGGREGATING THE COSTS.

AND I SWITCHED FROM MULTIPLE T-1'S AND I THOUGHT IT WAS GREAT WHEN I GOT TEN MEGS OF ETHERNET SERVICE FOR \$2,000 A MONTH AND THAT WAS A NUMBER OF YEARS AGO AND CURRENTLY I AM PAYING \$3,100 FOR A GIG CONNECTION BUT WITHIN THAT CONNECTION IS A REGIONAL NETWORK SO IT HAS MULTIPLE PIPES WITHIN THAT WERE I HAVE TO PURCHASE SIX MEGS OF PUBLIC INTERNET OUT OF THAT AND THEN I PAY FOR THAT \$10 PER MEGABIT. SO WE ARE TIED INTO THIS SUPERCOMPUTING CENTER AND THE CENTERS AND THE STATEWIDE I YOU NETWORKS AND THAT WILL SOON BE TIED INTO THE OTHER NETWORKS WITH DIFFERENT COMBINATIONS.

SO NOT ALL MY TRAFFIC GOES THROUGH THAT COMMODITY INTERNET PIPE SO AS EDUCATIONAL RESOURCES GET PULLED INTO THAT NETWORK, THE QUESTION OF HOW MUCH BANDWIDTH YOU NEED PER STUDENT AND THE CALCULATIONS ARE DIFFERENT BECAUSE THE VIDEO SERVICES DON'T COME THROUGH THE PUBLIC INTERNET SITES AND THEN WITHIN MY DISTRICT, I HAVE THE TWENTY-YEAR FIBER BUILD, AND TEN YEARS INTO THAT FOR MY OWN FIBER WAY AND WITH CONNECTING TO MY BUILDINGS TOGETHER AND THAT BUILD PORTION OF THAT THE CAPITAL INVESTMENT IS PAID OFF AND NOW I AM DOWN TO PROBABLY \$400 FOR EACH OF MY WAN CONNECTIONS.

AND ONE OF THOSE BECAUSE IT'S CLOSE TOGETHER I OWN THE FIBER SO I HAVE THAT LIT UP AT THE MOMENT.

BUT AS WE TALK ABOUT WIFI EARLIER AND JUST THE SCALE OF DEVICES, THE TYPES OF VIDEO, AS PEOPLE WERE DOING, IT GOES FROM EVERYBODY DOWNLOADING A WEBPAGE TO GRAPHICS HAVE INCREASED TWO I MENTIONED TO SOMEBODY ELSE, THERE IS FOR KK STREAMING.

AND THE BAR WILL KEEP MOVING AND I SEE THAT MOVING THE BAR SO WE TALK ABOUT 40 GIGS OR 100 GIG NETWORKS AND I CAN'T DO THAT ON MY OWN FOR THE FORESEEABLE FUTURE.

SO THAT'S WHERE I LOOK AT PARTNERING IN DIFFERENT WAYS AND HOW DO YOU BUILD THOSE PARTNERSHIPS AND GET THOSE GROUPS TO WORK TOGETHER IN SOME WAYS AND THAT'S HOW IT BENEFITS FOR ME.

>>: I WOULD LIKE TO GET YOUR COMMENT WHEN YOU LATE RAISED YOUR CARD AND THE BACK-AND-FORTH ABOUT THE BENEFITS AND THE DRAWBACKS OF CONSORTIA AND I KNOW GEORGIA IS PURSUING A LITTLE BIT OF EVERYTHING STRATEGY RIGHT NOW WITH THE INTERNET AND VARIOUS APPROACHES SO PROVIDE YOUR ACTION TO THE INITIAL COMMENTS BUT ALSO GO OVER YOUR EXPERIENCE IN GEORGIA.

>>: I RAISED MY CARD BECAUSE WE WERE TALKING ABOUT TARGETS AND WE DID NOT DO IT PER STUDENT BUT I'LL GO TO HOW IT STARTED AT GEORGIA, WE GOT A GRANT FOR \$400 MILLION WE GOT A GRANT FOR A SYSTEM SO WE STARTED BUILDING THE STATE WIDE TOOLS AND THAT'S WHAT'S DRIVING DEMAND FOR INFRASTRUCTURE.

WE ACTUALLY HAVE A NEED TO DELIVER THESE TOOLS STATE WIDE.

SO THAT IS THE QUESTION THAT RICHARD TALKED ABOUT THIS MORNING, WE NEED TO PUT INFRASTRUCTURE IN PLACE SO WE CAN DELIVER THESE TOOLS.

SO WE PICKED 100 MEGS BECAUSE WE CAME UP WITH THAT AS A STANDARD FOR THE CURRENT STATE.

WE ARE IN A STATEWIDE CONSORTIUM AND WE'VE BEEN IN THAT CONSORTIUM FOR MULTIPLE YEARS BUT THE BIG MOMENT FOR US IS SOMETHING THAT NORTH CAROLINA FIGURED OUT MANY YEARS AGO, LEVERAGE YOUR STATE UNIVERSITY SYSTEM SO WE HAVE SOMETHING CALLED PEACH NET, WHICH IS ALLOWING US TO RIDE ON THEIR BACKBONE.

WE WILL STILL USE THE LOCAL PROVIDERS FOR THE LAST MILE BUT THAT LOCAL BACKBONE BASIC OR YOU WILL DRIVE OUR COSTS DOWN BY ABOUT 90 PERCENT.

OBVIOUSLY NORTH CAROLINA HAS FIGURED THAT OUT IN GEORGIA IS FIGURING THAT OUT NOW AND THE GOVERNOR HAS INVESTED \$45 MILLION OVER THE NEXT BUDGET CYCLE TO CONNECT NOT ONLY THAT INFRASTRUCTURE BUT ALSO CONNECT ALL THE WAY DOWN TO THE COMPUTING DEVICES SO YOUR POINT ABOUT WE ARE DOING MULTIPLE THINGS AND ADDRESSING ALL 4 TIERS COMING INTO THE SCHOOL DISTRICT AND GOING FROM THE SCHOOL DISTRICT TO THE SCHOOL AND FROM THE SCHOOL DOWN TO THE CLASSROOM AND THE CLASSROOM DOWN TO COMPUTING DEVICE SO WE HAVE AN ARCHITECTURE ADDRESSING ALL OF THOSE IN BRINGING TOGETHER WHAT WE CALL THE CONVERGENCE, WHICH IS BASICALLY THE SOFTWARE TOOLS, TRAINING AND SUPPORT MECHANISM ALONG WITH THE INFRASTRUCTURE.

INFRASTRUCTURE BY ITSELF WON'T DO IT SO WE NEED ALL THREE OF THOSE THINGS COMING TOGETHER AND THAT'S WHAT WE ARE DOING IN GEORGIA.

>>: FOR A WHILE I THOUGHT WE WOULD HAVE EVERYBODY.

WE STILL HAVE A GOOD NUMBER SO LET'S GO DOWN THE LINE STARTING WITH DAVID.

>>: THANKS.

I WANTED TO OFFER ONE MORE MODEL FOR COMPETITION SO IN ADDITION TO MANAGING THE BOSTON PUBLIC LIBRARY PROCUREMENT PROCESS FOR THESE GOALS WE ALSO LEAD A CONSORTIUM, WHICH IS ONE OF NINE AUTOMATED NETWORKS IN MASSACHUSETTS SO ANOTHER VARIATION OF THE MODEL THAT FURTHER SUPPORTING THAT WHERE COMPETITION IS ACTUALLY AVAILABLE IT REALLY ABSOLUTELY DOES DRIVE THE PRICES DOWN.

WHEN YOU GET INTO THE PROBLEM THE EXTREME RURAL OR EXTREME URBAN CONDITIONS THAT PREVENT TRUE COMPETITION OTHER THAN RESELLING BEING AVAILABLE.

SO TO THE EXTENT THERE IS ROOM FOR ADVOCATING FOR GREATER COMPETITION AT THAT LEVEL, BEING AN OLD CITY WITH VERY SPECIFIC LEGACY INFRASTRUCTURE FOR PIPES AND WIRING AND SO ON, THAT DOES BECOME A PROBLEM AND HAS LIMITED OUR COMPETITION POSSIBILITIES FOR SOME OF THE NEIGHBORING CITIES.

THE OTHER POINT I WANTED TO MAKE IS THAT THE EXPENSE IS A WAY TO HAVE SCHOOLS, LIBRARIES AND THEIR TOWNS OR CITIES PARTNERS WORK EVEN MORE CLOSELY TOGETHER. IT STRIKES ME THERE'S MORE OPPORTUNITY THERE FOR A PILOT PROGRAMS OR IDEAS THAT COULD FURTHER TAKE THAT TO THE NEXT LEVEL.

JUST A GENERALIZED CONCEPT I WANTED TO PUT UP THERE AT THIS POINT BUT IT'S NOT JUST SCHOOLS GROUPING TOGETHER OVER HERE AND MY FIRST GROUPING TOGETHER OVER HERE.

LIBRARIES NOT BEING SURE WHETHER THEY ARE IN ONE OR BOTH AND HOW DO WE SOLVE AND THE TOWNS, CITIES AND OTHER LOCAL ADMINISTRATIONS THAT COULD PLAY A ROLE.

>>: A COUPLE OF COMMENTS AND RANTS.

THE FIRST IS, WHERE THE INTERNET STARTS AND STOPS IS A VARIABLE IN THE CONVERSATION WE ARE HAVING TODAY.

A STATEWIDE BACKBONE ESSENTIALLY WHAT YOU ARE DOING IS HE RAISING THE BACKHAUL SO YOU'RE BRINGING THAT TO THE DISTRICT SO YOU HAVE THE BACKHAUL ACROSS THE STATE AND EVEN THERE'S MORE TO THIS CONVERSATION, WHAT INTERNET ACCESS MEANS IS A VARIABLE, WE JUST NEED TO KEEP THAT CONSIDERED WHEN WE START WRITING NUMBERS DOWN BECAUSE FOR SOME, THE INTERNET STARTS AT THE END OF THE SCHOOL AND FOR SOME WITH THE DEVICE AND FOR SOME OF THE SERVICES IT STARTS FURTHER IN THE NETWORK IT'S JUST AN IMPORTANT DETAIL WHEN TALKING ABOUT COSTS.

SO ANOTHER DETAIL, IN NORTH CAROLINA THE ISSUE OF HOW MUCH WAS THE RIGHT NUMBER ON BANDWIDTH AND WE DON'T KNOW, YOU COULD SPEND ALL YEAR TRYING TO CALCULATE WHAT THE RIGHT ANSWER IS SO INSTEAD YOU PICK A PIPE SIZE AND THEN MONITOR.

SO WE MONITOR THE USAGE OF ALL OF OUR DISTRICT LEVEL CONNECTIONS AND WHEN THEY HIT 60 PERCENT WE INITIATE AN UPGRADE.

THE WAY WE DO IT WE ARE ABLE TO INITIATE THAT UPGRADE WITHIN THE CONTRACT SO WE ARE NOT WORRIED ABOUT E-RATE BOUNDARIES AND IT PROVIDES BANDWIDTH PAST THE SUPPORT UPGRADES AND BY WAY OF EXAMPLE, I THINK WE UPGRADED 16 DISTRICTS THIS PAST YEAR SO NEAR CONSTANT MEASURE OF UPGRADES AND IT HAPPENS ALL THE TIME, BUT TO THE POINT OF EVERYONE HERE, IF YOU HAVE FIBER, MOST OF THE TIME IT'S A CONFIGURATION AND IT'S NOT THIS IS A NICE THING TO BE ABLE TO DO.

AND ANOTHER DETAIL, I HEARD SOME THINGS ABOUT CACHING SO THE NICE THING ABOUT HAVING AN EDUCATION NETWORK IS IT CAN CENTRALIZE CACHING, TRAPPING OFFLOADS, ALL THOSE KINDS OF THINGS, WHICH IS VERY, VERY IMPORTANT PARTICULARLY WHEN THE SLOPE OF THE USAGE CURVE AND THE SLOPE OF THE COST INCREASE CURB ARE NOT THE SAME.

COSTS ARE GOING DOWN BUT WHEN YOU APPLY MONEY AND UPGRADE EVERYBODY'S PIPES AT THE SAME TIME IT GOES INTO LEARNING AND UPGRADE TO WIRELESS NETWORKS, YOUR USAGE WILL GROW.

IN NORTH CAROLINA WE WENT FROM 2009, ALL THE DISTRICTS AND WE HAVE AN AGGREGATED BOAT OF ABOUT THREE GAMES NOW THAT'S WELL OVER 40 GIGS AND IT'S GROWN PRETTY HEAVILY.

AT THE SAME TIME, JUST OVER HALF OF MCNC BANDWIDTH, THOSE BITS FLOW OVER THREE LINKS IN THOSE KINDS OF THINGS, THAT TREND HAS TO CONTINUE OR EVENTUALLY YOU JUST OPEN UP THE PIPES AND THEN JUST THE FINAL COMMENT ABOUT CHARTERS CHARTERS CAN EASILY -- A CHARTER LOOKS LIKE A SCHOOL DISTRICT SO IN SOME WAYS YOU COULD EASILY SPEND AS MUCH MONEY TO CONNECT A CHARTER AS YOU DO A DISTRICT SO IT REQUIRES SOME FINESSE SO CHARTERS ARE INCLUDED IN THE STATE FUNDING SCHOOL CONNECTIVITY IN NORTH CAROLINA AND IT'S BECOME HARDER.

WE USED TO HAVE A CAP ON THE NUMBER OF CHARTERS AND THAT WAS REMOVED AND WE ARE NOW ADDING 25 OR SO CHARTERS A YEAR.

I WOULD SAY MOST OF THOSE CHARTERS ARE PRETTY SMALL SO IF YOU ARE SITTING AT 150 KIDS IT'S ALMOST IMPOSSIBLE TO JUSTIFY.

YOU DON'T GET THE BENEFITS OF THE DISCOUNT AND THE OVERHEAD OF THE PROGRAM.

>>: THOSE ARE ALL SUPER HELPFUL SO GARY, WE WILL GO TO NEXT AND IF I COULD TEE UP TO SPECIFIC QUESTIONS INCLUDED IN YOUR REMARKS AND ONE IS ON THE ISSUE OF THE VERY HARD TO SERVE SCHOOLS THAT ARE THE MORE RULES SCHOOLS HOW DO YOU

APPROACH THAT AS PART OF THE RECENT BID YOU DID IN MISSISSIPPI SCHOOLS WHERE THEY DID NOT HAVE FIBER TODAY AND WAS THERE SOME EXPLICIT NEGOTIATION ABOUT THE CHARGES?

AND THEN THE SECOND QUESTION IS YOU MENTIONED YOUR WIDE AREA NETWORK PRICING AND YOUR TRANSPORT PRICING THAT WAS MENTIONED AT THE OUTSET AND IF YOU COULD SAY HOW YOU THOUGHT ABOUT CON ACTIVITIES IN THE DISTRICT GETTING OUT TO THE INTERNET THAT WOULD BE HELPFUL AND INTERESTING.

>>: FIRST I WANT TO ADDRESS JENNIFER'S POINT ABOUT GETTING THE CHARTERS.

THERE ARE MANY FLAVORS OF THE CONSORTIUM BUT ONE IS THAT YOU HAVE A CONSORTIA ESTABLISHING THE CONTRACT WHERE YOU COULD INCLUDE CHARTERS IN THE BUILDING OF YOUR CONTRACT AND THEN THE SECOND CONSORTIA COULD BE SERVICES, WHICH WOULD NOT HAVE TO INCLUDE YOU.

THEY COULD GET THEIR SERVICES FROM YOUR CONTRACT, BUT YOU WOULD NOT HAVE ANY LEGAL OR FINANCIAL RESPONSIBILITY TO THEM.

WE HAVE DONE THE SAME, WE CAN'T USE THE SAME CONTRACT FOR PRIVATE SCHOOLS, BUT WE ESTABLISHED THAT IF THE LAW WERE EVER CHANGED THAT THEY COULD USE THE STATE CONTRACT AND RIGHT NOW THEY CAN'T BUT I KNEW BETTER THAN TO CREATE A 470 OR CONTRACT THAT DID NOT ALLOW THAT SO I BUILT THE CONTRACT IN THE 470 THAT WOULD ALLOW THEM TO USE IT IN THE FUTURE IF THE STATE DECIDED THEY COULD.

SO TO THAT POINT.

BUT BACK TO THE DELIVERY OF HARD TO REACH AREAS.

WE ESTABLISH THE CONTRACT AND THIS IS ALWAYS BEEN THE CASE GOING BACK TO 1998 WHEN WE ESTABLISHED OUR FIRST CONTRACT FOR STATEWIDE SERVICES LIKE THIS, WE ESTABLISHED RATES THAT MEANS IT COST THE SAME NO MATTER WHERE YOU ARE IN THE STATE.

RURAL STATES LIKE YOU WERE TALKING ABOUT, HARD TO REACH AREAS, BUT WE COULD NOT IN MISSISSIPPI OR WHEREVER IT HAPPENS TO BE BECAUSE THEY'RE VERY RURAL SO WE ESTABLISHED RATES SO YES, THOSE IN THE METROPOLITAN AREA WOULD PAY MORE GRANTED, BUT THAT IS SO THE RURAL COMMUNITIES COULD PAY LESS AND WHAT IS A LOCALIZED STREET IT'S AN AVERAGE RATE FOR THE STATE.

THE OTHER PART WITH THE CONTRACT IS THAT IF YOU ARE GOING TO BE THE RECIPIENT OF THIS CONTRACT, YOU CANNOT SAY NO TO A SCHOOL.

YOU CANNOT SAY NO TO A STATE AGENCY.

IF THEY COME TO YOU AND REQUEST TO FIBER BASED SERVICES, NO MATTER WHERE WE ARE IN THE STATE OR HOW MUCH IT COSTS FOR YOU TO GET THERE, YOU'VE GOT TO PROVIDE IT.

AND DURING THE LIFE OF THE CONTRACT, SPECIAL CONSTRUCTION CHARGES WERE WAIVED IF IT'S WITHIN THAT VENDOR, IF IT'S WITHIN THEIR FOOTPRINT THEY HAVE TO GO THERE, NO SPECIAL CONSTRUCTION CHARGES.

WHERE WE ARE HAVING DIFFICULTY NOW BECAUSE WE'VE DONE THAT WE'VE BEEN THERE IN THE SCHOOLS HAVE REQUESTED AND THEY PULLED THE FIBER TO THEM SO WE ARE THERE.

WHERE WE ARE LACKING AT THIS POINT IS THE INDEPENDENT PHONE COMPANY AREAS AS HAVE BEEN MENTIONED ALREADY TODAY AND SOME OF THEM ARE FANTASTIC TO WORK WITH, ALMOST NOTHING BUT ON SOME OF THEM THEY REQUIRE MORE FOR AT&T TO RETELL -- RESELL THE SERVICES BECAUSE THAT'S THE ARRANGEMENT.

THE RESALE THEIR SERVICES AND AT&T CAN ONLY CHARGE OUR CUSTOMERS STATE MASTER CONTRACT RATES, BUT THE INDEPENDENT CHARGES AT&T MORE THAN THE STATE MASTER CONTRACT RATE, WHICH MEANS AT&T HAS TO OBSERVE THAT EXTRA COST AND SOMETIMES THEY CAN DO THAT AND SOMETIMES THEY CAN'T.

SO SOMETIMES AT&T HAS TO SAY NO BUT AGAIN I MENTIONED 750 PER GIG AND GOING BACK TO YOUR POINT HOW DO YOU KNOW HOW MUCH TO GIVE THEM FOR WHEN YOU TAKE THEM TO A GATE.

IT'S NOT THE DECISION ANYMORE.

IT'S NOT EVEN A FINANCIAL DECISION ANYMORE IT'S BECAUSE IT HAPPENS TO BE IN OUR STATE 100 MEGABITS IS \$500.

250 MORE DOLLARS YOU COULD INCREASE THAT TENFOLD FROM 100 MEG TO ONE GIG SO IT'S NOT A FINANCIAL DECISION ANYMORE.

AND I'M SUPPOSED TO BE IN A MEETING SOMEWHERE EVIDENTLY.

SO THAT'S WHY IT'S NOT A FINANCIAL DECISION ANY LONGER, IT'S JUST WHY NOT GO FOR A GIGABIT BECAUSE IT DOES NOT MATTER ABOUT THE COST OF IT.

>>: I WILL LET FOLKS MAKE THEIR COMMENTS BUT JUST THROW A QUESTION IN THE MIX CERTAINLY ALL THE WAY BACK TO A COUPLE OF THINGS EVANS SAID IN HIS INITIAL COMMENTS.

FOLKS ON THIS SIDE OF THE TABLE KNOW I LIKE TO SAVE ALL THE FCC DOES IS DISPERSE FUNDS, WE ARE NOT DOING OUR JOB.

WE OUGHT TO BE ABLE TO DO MORE THAN THAT AND BE ABLE TO BE MORE THAN THE PAYMASTER.

ONE OF THE THINGS WE'RE DOING TODAY IS CONVENING EXPERTS AND SHARING INFORMATION AND IT'S TERRIFIC.

BUT IT NEEDS TO BE ON A MORE SYSTEMATIC BASIS TO HELP EVERYBODY SO EVAN MENTIONED A COUPLE OF THINGS THAT HE THOUGHT WOULD BE HELPFUL ONE OF WHICH WOULD BE TRANSPARENCY THROUGH THE E-RATE PROGRAM.

SO I WANT TO THROW OUT THAT AS ONE AND WE'LL GET TO IT A LITTLE BIT LATER AND THE SECOND THING EVAN TALKED ABOUT, WHICH IS AGGREGATION BUT IN TRANSPARENCY, TO ANYBODY WHO WANTS TO ANSWER, HOW IMPORTANT WOULD IT BE FOR YOU ALL TO SEE TRANSPARENT PRICING ACROSS OTHER SCHOOLS AND LIBRARIES AND DISTRICTS PAY AND MORE CRITICAL TO IT, WHAT IS THE METRIC YOU ARE LOOKING AT AND WHAT'S THE UNBUNDLED PIECE THAT YOU ARE LOOKING AT BECAUSE WHEN YOU ALL BY A LOT OF SCHOOLS AND LIVE BIRTHS BY BUNDLED SERVICES AND IT'S NOT BROKEN OUT IN A WAY THAT YOU CAN COMPARE IT EASILY ONE TO ANOTHER SO WHAT WOULD BE IMPORTANT? WHAT PART WOULD BE IMPORTANT TO BE TRANSPARENT?

WHAT WOULD HELP YOU IN YOUR PURCHASING IN THE FUTURE AND WHAT WOULD YOU LIKE TO SEE WHAT WOULD YOU LIKE THE FCC TO DO AND WHAT WOULD IT LOOK LIKE TO YOU TO BE ABLE TO USE TRANSPARENT PURCHASING?

>>: RICK I THINK YOU ARE UP BUT ANYONE -- SEVERAL THINGS ON THE AGENDA BUT I WILL JUMP BACK TO WHAT JONATHAN JUST SAID.

THE SMALLEST RURAL LIST LOWEST INCOME DISTRICT IN FLORIDA, TODAY THEY ARE PAYING \$350 PER MONTH FOR 350 MEGABYTES IF THEY GO TO OUR STANDARD THEY WOULD PAY \$6,800 PER MONTH.

THESE ARE REAL SCENARIOS.

SMALLEST, POOREST DISTRICT IN THE STATE OF FLORIDA.
JONATHAN, ONE THING THAT WOULD HELP US IS IF WE KNEW THEY COULD GET 100 MEGS FOR \$500 WE WOULD ASK THE QUESTION OF THAT CARRIER CAN YOU DO IT IN MISSISSIPPI SO WHY NOT RURAL FLORIDA.
THAT'S THE FIRST QUESTION AND WE CAN FOLLOW UP FROM THERE.
ONE OF THE THINGS OUR NEW BEST FRIEND FROM GEORGIA WAS TALKING ABOUT TEACHING THAT WHO'S THINKING ABOUT IS TRYING TO DO FLORIDA AND BEING THAT WE ARE IN A DISTRICT THAT GOT 24 INCHES OF RAIN LAST WEEK AND ABOUT 12 HOURS, WE ARE NOT DOING SO GOOD SELLING SUNSHINE.
BUT ONE THING I FAILED TO MENTION TO BRING OUT IS ONE OF THE PROBLEMS IN OUR RURAL COMMUNITY FOR WIDE AREA NETWORKS IS MOST OF THE SCHOOLS ARE BETWEEN 50-75 MILES PER OUR -- APART.
AND WE FAIL TO REALIZE A RURAL DISTRICT COMPRISES 40 PERCENT OF THE STATE LAND MASS IN FLORIDA.
SO REMEMBER WE GET 5 PERCENT OF THE FUNDING SO TO RUN A WIDE AREA NETWORK IN THAT KIND OF LAND MASS, TWO THINGS WOULD HAPPEN, IT WOULD BE NONFUNCTIONAL BECAUSE OF THE RAIN AND THE THINGS THAT HAPPENED IN THE SIGNAL LOSS AND ALSO ECONOMICALLY IMPOSSIBLE FOR THE STATE.
THE THING I WANT TO MENTION TOO AND GOING BACK TO MY FRIEND FROM GEORGIA IS WE WENT TO GEORGIA OUT OF ATLANTA AND FOUND A CONSULTANT AND WHAT I SAY IS A SATELLITE VIEW OF WHAT'S GOING ON IN THE UNITED STATES AND WE STARTED WORKING WITH HER THE LAST SIX MONTHS OR SO TO HELP US BECOME MORE TRANSPARENT AND FIND OUT WHAT IS GOING ON AND WE WERE FORTUNATE TO HAVE HER MOVE TO FLORIDA AND IMMEDIATELY UPON MOVING TO FLORIDA SHE BOUGHT A HOME AND COULD NOT BUY ENOUGH INTERNET TO E-MAIL THE FCC TO DOCUMENT -- THE DOCUMENTS WE NEEDED TO FILE.
WE HAD TO GO BACK TO THE SCHOOL DISTRICT AND WERE TOLD BY THE CARRIER WHICH IN THIS CASE IS CENTURY LINK THAT IF THEY LIVED ACROSS THE STREET THEY WOULD BE ABLE TO HAVE AT LEAST THREE MORE MEGABITS SO NOT ONLY IS THAT A PUBLIC SCHOOL TYPE THING, IT IS HINDERING OUR CAPACITY TO BE COMPETITIVE IN THE BUSINESS WORLD AND A LOT OF TIMES PEOPLE DON'T EVEN THINK ABOUT THE DAY-TO-DAY USE ESPECIALLY FOLKS IN THE HOUSE COME THE INTERNET CAPACITY.
ONE THING WE HAVE TO AND THEN I WILL SUMMARIZE WITH THIS, AND OUR STATE CONTRACT THERE'S AN ASTERISK AT THE BOTTOM THAT SAYS THIS, SUBJECT TO AVAILABILITY.
AND I CAN TELL YOU IN THE 289 SCHOOLS, VERY FEW, IF ANY ARE ELIGIBLE FOR THE STATE CONTRACT AS SUBMITTED.
>>: RICK JUST MADE MOST OF THE POINTS I WAS GOING TO MAKE BECAUSE I'D TOSSED MOSTLY ABOUT WHAT THE STATE OF IDAHO DID BUT WE PAY \$35 PER MEG AND WE ARE MEDIUM-SIZE DISTRICT FOR OUR STATE, WHICH IS 4,000 STUDENTS.
I STARTED MY CAREER IN THE DISTRICT THAT HAD 320 STUDENTS FOR THE ENTIRE DISTRICT. WE WERE PAYING \$1,500 PER MEG FOR INTERNET THERE AND WE BOUGHT ONE MEG AND THAT'S WHAT WE COULD AFFORD.
NOW IT IS NINE YEARS LATER AND THEY ARE GETTING MORE THAN THAT BUT THE PRICES ABOUT THIS IN ONE OF THE BIGGEST ISSUE IS I WOULD GO TO BED AND PLACE IT ON THE WEBSITE AND NOBODY WOULD BOTHER BIDDING BECAUSE THEY COULD NOT MAKE BACK

THEIR MONEY SO THAT WAS ONE OF THE BIGGEST ISSUES WE HAD AND THERE ARE SOME TIMES WHERE THE PROVIDER CAN'T DO IT.

IT WOULD NEVER BE COST EFFECTIVE TO DELIVER THE CONTENT AND THAT IS WHERE HELP COULD COME FROM FROM THE E-RATE PROGRAM MAKING IT AFFORDABLE FOR THE PROVIDERS TO GET THE INTERNET TO THE RURAL DISTRICTS.

>>: THERE'S A LOT OF VERY HELPFUL COMMENTARY ON SORT OF THE RURAL CONNECTIVITY ISSUES.

THAT'S GREAT.

GOING BACK TO URBAN AMERICA.

>>: WE TALKED ABOUT, I THINK HE WAS TALKING ABOUT REGIONAL WIDE AREA NETWORKS AND I THINK THAT DOES MAKE SENSE, BUT FOR AN ENTITY AS LARGE AS WE ARE AND AS MANY USERS AS WE HAVE, WE WOULD FILL THE PIPES SO IT'S ALMOST UNFAIR FOR A LARGE URBAN DISTRICT TO PARTICIPATE IN A REGIONAL NETWORK THAT'S SHARED WITH SMALL SCHOOL DISTRICTS BECAUSE WE WOULD OVER BEER THEM.

AND BEING A LARGE URBAN DISTRICT WE HAVE A TELECOMMUNICATIONS HOW AND YOU CAN HIT A GOLF BALL TO FROM OUR PARKING LOT SO IT'S TYPICALLY FOR LARGE URBAN DISTRICTS AREAS WHERE YOU CAN GET INTERNET ACCESS QUICKLY UNLIKE THE RURAL SITUATIONS THAT THEY WERE TALKING ABOUT.

ALSO ONE MORE THING TALKING ABOUT LEVERAGING REGIONAL OR LOCAL RESOURCES WE HAVE AN INTERNET CONNECTION SPONSORED BY LOCAL UNIVERSITY SO WE HAVE THAT FOR FREE AND THAT'S ONE THING WE TRY TO DO PARTNERING WITH UNIVERSITIES IN THE AREA TO GET AS MUCH RESOURCES AS WE CAN.

>>: GREAT.

SO I THINK WE WILL GO TO STACY AND THEN KEITH AND THEN PEOPLE CAN START GETTING READY WE WILL BE APPROACHING THE LAST 15 MINUTES AND WE WANT TO OPEN IT UP FOR AUDIENCE QUESTIONS.

>>: I AGREE WITH EVERYTHING EVERYBODY IS SAYING.

THE NEED FOR SPEED, WE ALL FEEL THE NEED FOR SPEED.

I ALSO WANTED TO MENTION THE NEED TO BUILD CONDUCTIVITY BECAUSE WE STILL HAVE LIBRARIES NOT COME BACK -- CONNECTED AND THAT LAST MILE BUILD UP IS IMPORTANT IN OUR STATE AND MANY STATES ACROSS THE COUNTRY IN SPEAKING WITH OUR LIBRARIANS. WE HAVE PEOPLE WHO PAY \$2,000 PER MONTH FOR A T-1 LINE AND IN ANOTHER COMMUNITY ARE PAYING \$300 FOR 100 MEGS AND IN TERMS OF TRANSPARENCY, IT WILL BE HELPFUL, WE DO KNOW WHAT LIBRARIES ARE PAYING AND SEEING THE SAME COMPANIES ARE CHARGING DIFFERENT RATES FOR THE SAME CAPABILITY AND I WOULD LIKE TO KNOW WHY THAT IS SO I THINK WE SHOULD BE ABLE TO HAVE THIS CONVERSATION AND ESPECIALLY WITH LIBRARIES THAT ARE MAKING AN IMPACT TO THEIR COMMUNITIES BY PROVIDING ACCESS FOR EDUCATION, EMPLOYMENT, ENTREPRENEURSHIP.

>>: I WANT TO LET KEITH TALK, BUT ALSO LET PEOPLE START THINKING ABOUT A QUESTION RELATED TO ONE, WHICH IS PRICING TRANSPARENCY AND I WONDER IF FOLKS AROUND THE TABLE IN YOUR EXPERIENCE ARE TALKING TO YOUR PEERS IN SCHOOLS, IF YOU DO ANY BENCHMARKING ON ENTERPRISE PRICES AND YOU GO OUT AND LOOK AT WHAT SIMILARLY SITUATED ENTERPRISE CUSTOMERS ARE GETTING AND HOW THAT INFLUENCES YOUR THINKING WHEN YOU RUN A COMPETITIVE BIDDING PROCESS.

>>: TO THE TRANSPARENCY PIECE, EVAN MENTIONED EARLIER HAVING ACCESS TO NETWORK

ACCESS POINTS AND WHAT WE RAN INTO THIS YEAR WAS JUST THAT.

WE HAVE PROVIDERS THAT WOULD NOT ALLOW BROKERS TO BID ON ACCESS, INTERNET ACCESS.

DATE FOR BID THEM BECAUSE ONE PROVIDER WOULD PROVIDE THE TRANSPORT BUT FOR BID THEM TO PROVIDE THE ACCESS TO THE TRANSPORT TO HINDER THE WHOLE PROCESS. THAT NEEDS TO BE CHANGED TO ALLOW MORE COMPETITION BECAUSE THE NETWORK ACCESS POINT I HAD 300 VENDORS AND I COULD HAVE GOT ONE GIG OF INTERNET ACCESS FOR \$500 IF THAT WAS OPENED UP.

WHAT HAPPENED AT THE END WAS THE NETWORK SERVICE PROVIDER, AND I WON'T MENTION THE NAME RIGHT NOW, THEY CAME DOWN FROM \$6,000 TO \$3,100 FOR THAT ACCESS.

STILL WITHIN THAT FEW YEARS EVEN THOUGH I LOCKED IN TO E-RATE FOR THAT PRICE I'M STILL GOING TO WORK TO GET ACCESS AT THE NETWORK ACCESS POINT.

THERE'S MULTIPLE ONES IN CHICAGO AND I WOULD EVEN SAY IN RURAL AREAS THERE ARE ANCHOR POINTS THAT CAN CONNECT AND WE COULD STILL MAKE THIS HAPPEN BUT THERE IS TRANSPARENCY AND WE CAN GET CHEAP AGGREGATE INTERNET ACCESS PRICES.

>>: BOB I'LL LET YOU GO NUMB WILL GO TO THE AUDIENCE.

>>: WHAT WE DO IN THIS GROUP AND TO STATE SCHOOL OFFICERS IT'S CALLED IMAC, WHICH IS THE TECHNOLOGY ARM WE HAVE ALL OF THEM FROM THE STATES AND WE EXCHANGE CONTRACTS ACROSS ALL SOFTWARE PACKAGES, HARDWARE PACKAGES THAT IT HELPS TREMENDOUSLY.

>>: WHY DON'T WE GO TO THE AUDIENCE AND THEN WE WILL LET PEOPLE JUMP IN TO ANSWER THE QUESTIONS WE GET AND TO CONTINUE THE CONVERSATION.

>>: I'M GARLAND MCCOY, THE PRESIDENT OF TECHNOLOGY EDUCATION INSTITUTE AND I AM VERY NEW TO ALL OF THIS SO PLEASE BEAR THAT IN MIND.

BUT ONE OF THE THINGS THAT I AM CURIOUS ABOUT ARE THE POTENTIAL PRIVATE SECTOR PARTNERS TO HELP PROVIDE ADDITIONAL RESOURCES, FINANCIAL RESOURCES OBVIOUSLY TO ALLEVIATE SOME OF THE CONCERNS ABOUT THE EBBS AND FLOWS OF BOTH THE FCC FUNDING, STATE FUNDING, BUDGET REQUIREMENTS.

LET ME TELL YOU WHAT I KNOW FROM 30 YEARS OF WORKING ON THIS ON THE TECH SIDE IS THAT THE INTERNET ARCHITECTURE IS EVOLVING.

THERE IS TREMENDOUS STRESS ON WHAT THEY CALL THE MIDDLE MILE, WHICH IS NOW FORCING WHAT THEY CALL CONTENT DELIVERY NETWORKS, CONTENT FOLKS TO CASH INTO -- YOU WERE MENTIONING ABOUT CACHING, AND THIS IS PROVIDING REVENUE FOR THESE MEDICAL OFFICE BUILDING RIGHTS WERE YOU GO TO GET YOUR TEETH DONE OR WHATEVER AND THEY HAVE FIBER SO THEY PUT A CLOSET DOWN IN THE BASEMENT TO CACHE.

SO IT SEEMS TO ME THAT TWO THINGS ARE WORKING IN EFFECT IN YOUR FAVOR IF THERE IS A DESIRE TO START VOLUNTARILY LOOKING FOR PARTNERS, WHICH IS A, CACHING TO GO ALONG WITH BRINGING IN LARGE BUNDLES OF FIBER AND SECOND WOULD BE THE TREMENDOUS SAVINGS YOU ALL WILL BE SEEING, SOME OF YOU ALL NOW, OTHERS HOPEFULLY SOON WITH WHAT THEY CALL THE INTERNET OF THINGS, WHICH IS END TO END TRAFFIC.

THE OTHER THING IS YOU WILL SAVE A LOT OF MONEY BY HAVING IX P., VARIOUS SIZES OF THAT BUT THERE IS NO SENSE IN PEERING ALL THAT STUFF OUT IN ASHBURN VIRGINIA.

SO IF YOU DO THAT YOU WILL SAVE MONEY [OVERLAPPING SPEAKERS]

SO MORE FORWARD THINKING, PARTNERSHIPS SO THAT IT'S A GROWING ECOSYSTEM.

>>: GREAT.
THANK YOU.

LET ME THROW THAT OUT TO THE GROUP.

WE WILL GO BACK TO WHERE WE WERE IN THE QUEUE UNLESS OTHERS WANT TO JUMP IN SPECIFICALLY.

>>: SO I DEFINITELY THINK THERE IS VALUE IN TRYING TO LEVERAGE PUBLIC-PRIVATE PARTNERSHIPS AND ONE OF THE THINGS IN PARTICULAR THAT WE'VE TALKED ABOUT BEFORE IT'S A LITTLE INTO WHAT WE TALKED ABOUT WHAT THE RESEARCH EDUCATION NETWORK BACKBONES IS LOOKING AT THE COST ALLOCATION RULES OF E-RATE TO ALLOW US, BECAUSE ALL OF THE MINING -- MONEY IS IN BIG BUILDING AND TRENCHING GETTING UP ON THE POLE SO IF YOU LET PEOPLE PULL A LOT OF FIBER INSTEAD OF A LITTLE BIT OF FIBER THAT WILL PAY A LOT OF BENEFITS AND MAKE IT MORE ATTRACTIVE FOR VENDORS TO DO STUFF BUT STILL GET THE SCHOOLS WHAT THEY NEED SO I AM CERTAINLY IN FAVOR OF THAT.

I WANT TO COME BACK TO THE TWO QUESTIONS ON THE TABLE SO FIRST IN TERMS OF BENCHMARKING VERSUS CORPORATIONS.

WE HAVE DONE A LOT OF THAT AND I WILL TELL YOU THE BIGGEST CONCLUSION, THE BIGGEST CONCLUSION IS SCHOOLS AND LIBRARIES UNDER THE E-RATE PROGRAM DWARF CORPORATIONS.

I DON'T MEAN BY A LITTLE BIT, I MEAN BY A LOT.

SO LET'S GO BACK TO THIS MORNING'S DISCUSSION ON WI-FI INFRASTRUCTURE.

SO A BIG ORDER, I TALKED TO THE CIO OF GENERAL ELECTRIC.

A BIG ORDER FROM GENERAL ELECTRIC FOR WIFI INFRASTRUCTURES \$5 MILLION.

I TALKED TO COMCAST WITH THEIR OUT FIVE -- OUTDOOR WI-FI BUILDS, \$25 MILLION.

THE REVENUES FOR THE NUMBER TWO PLAYER IN THE WI-FI INDUSTRY, \$500 MILLION.

WE ARE TALKING ABOUT SPENDING, WHAT SCHOOLS WILL NEED, 500 MILLION-\$1 BILLION A YEAR AT LEAST TO KEEP THE NETWORKS UP TO DATE.

SO IN TERMS OF BENCHMARKING, YES, THEY ARE DOING BETTER BUT THEY'RE DOING BETTER BECAUSE THEY BETTER INFORMATION AND THEY'RE MORE AGGRESSIVE NEGOTIATORS.

>>: [OFF MIC COMMENT]

>>: FOLKS ON MY TABLE ARE TIRED OF HEARING ME SAY SOME OF THESE THINGS THAT WE OUGHT TO LOOK MORE LIKE THE E-RATE PROGRAM AND MORE LIKE A WALMART BUYER THAN A WALMART SHOPPER.

WALMART BUYERS ARE THE ONES WHO FIGHT ON BEHALF OF ALL WALMART STORES AND WE ARE GOING TO BUY WIRELESS ACCESS POINTS, WE OPENED THE SPIGOT TO FUNDING SOMEHOW WE WILL BUY MORE WIRELESS ACCESS POINTS THAN ANY CORPORATIONS IN HISTORY AND AS WE ARE BUYING AS IT TURNS OVER AND YOU REFRESH EVERY FIVE YEARS WHATEVER THE TIME PERIOD IF YOU'RE BUYING 500,000 ACCESS POINTS EVERY YEAR OR SEVERAL HUNDRED THOUSAND, IT IS A BIG SIGH.

SO RICK MENTIONS AGGREGATING NATIONWIDE PRICING, JOE MENTIONED CONTRACTS WERE THE AGGREGATE ACROSS THE MEMBERSHIP AND PRICING, AND FOLKS CAN YOU THINK OF A WAY IN WHICH WE CAN AGGREGATE THE PURCHASING POWER OF ALL OF THE SCHOOLS AND LIBRARIES THROUGH THE GREAT PROGRAM SO THAT WE ARE NOT JUST GETTING GOOD ENOUGH, WE ARE GETTING THE VERY BEST PRICING AVAILABLE TO ANYBODY IN THE SERVICES AND PRODUCTS THAT WILL BE PURCHASED THROUGH THE E-RATE PROGRAM.

>>: YOU SAID A GOVERNMENT PER DIEM AND EVERY HOSPITALITY VENDOR IN THE COUNTRY ADJUST TO THAT PER DIEM.

WHY CAN'T YOU DO IT WITH SERVICES?

AND WE NEED TO EXPLORE THAT AND DON'T JUST USE EDUCATION AS YOUR AGGREGATOR. USE HEALTH CARE, YOU HAVE THE HEALTHCARE CONNECT WORD.

USE TOWNS AND MUNICIPAL GOVERNMENTS AND STATE GOVERNMENTS START TO PUT OUT REFERENCE PRICING WHERE YOU CAN BUILD THIS ENTIRE ECOSYSTEM.

IF I GO BACK TO THE RURAL AREAS, YOU WILL BE LUCKY TO GET INFRASTRUCTURE TO THE RURAL AREAS ONCE.

IT'S GOT TO TAKE CARE OF EVERY NEED THERE.

IT'S GOT TO TAKE YOUR SCHOOLS, LIBRARIES, NONPROFIT HOSPITALS AND YOU'VE GOT TO LET PEOPLE USE THAT PRIVATE SECTOR TO GREET CELL TOWERS AND BUSINESSES, WE GOT TO START THINKING ABOUT THIS LIKE WE HAVE ONE SHOT TO CONNECT RURAL NORTH CAROLINA AND IF WE KEEP FUNDING IT IN SILOS WE WILL NEVER GET THERE, NEVER.

>>: I INTERRUPTED YOU IN THE MIDDLE.

>>: TO YOUR POINT, IT'S EXACTLY RIGHT, LIKE I SAID A COUPLE OF COMMENTS I WOULD MAKE ABOUT THAT, THE FIRST IS THE EASIEST PLACE TO AGGREGATE IS GOING TO BE ON P2.

P2 EQUIPMENT.

WI-FI ACCESS POINTS, SWITCHES, ROUTERS, CONTENT FILTERS AND ALL THAT STUFF BECAUSE THE UNIQUE GEOGRAPHIC CIRCUMSTANCES OF AN INDIVIDUAL SCHOOL DON'T REALLY AFFECT THAT.

THEY AFFECT WIRING IN SUMS OF THOSE THINGS.

SO IF I WERE GOING TO DO THAT, I WOULD START THERE.

WE KNOW IT'S A DESPERATE NEED AND WE KNOW IT'S MUCH MORE COMMODITY DRIVEN THE SECOND THING IS WE LEARNED A LOT THIS MORNING ABOUT THIS, WHICH IS WHAT MAKES FOR BETTER BUYING EXPERTISE.

SO BY AGGREGATING EXPERTISE AROUND THIS AND CONDUCTING EITHER A STATE LEVEL OR NATIONAL LEVEL BID FOR A REFERENCE PRICE FIFTH THERE'S A TREMENDOUS AMOUNT THAT CAN GO -- TREMENDOUS AMOUNT OF VALUE TO BE GENERATED.

THE THIRD THING I WOULD SAY IS IT DOES NOT HAVE TO BE NATIONAL TO GET THE KIND OF SCALE WE ARE TALKING ABOUT.

EVEN AT THE STATE LEVEL, IF WE JUST DID 50 STATE BIDS WE WOULD HAVE SO MUCH MORE SKILL THAN THE LARGEST BUYERS THAT ARE OUT THERE AND IN SOME CASES IT COULD BE SOME STATES GET TOGETHER AND DO A FEW OF THEM TOGETHER SO I KNOW THE POLITICS OF TRYING TO DO THINGS AT THE NATIONAL LEVEL SO EVEN AT THE STATE LEVEL YOU WILL GET A TREMENDOUS AMOUNT OF BENEFIT AND PHILADELPHIA CAN GET 11 FLYERS TO SHOW UP YOU SHOW UP WITH THESE BITS YOU WILL HAVE WAY MORE THAN THAT.

BECAUSE THERE WILL BE VENDORS COMING OUT OF THE WOODWORK TO GET PIECES OF THAT SO THAT'S THE FIRST THING AND THE SECOND THING IS SURE TRANSPARENCY POINT. SO ALL THE WORK WE WERE ABLE TO DO AS A RESULT OF CREATING TRANSPARENCY, THAT'S ALL WE DID.

WE COLLECTED A BUNCH OF DATA AND ASK THE QUESTIONS OF THE PEOPLE TO REALLY GET DOWN TO WHAT WE NEEDED TO KNOW IN ORDER TO BE ABLE TO PROVIDE THESE TYPES OF THINGS THAT ARE REPORT AND I THINK FOOT TRANSPARENCY DOES AS WE WERE DOING THE SLIGHTEST PEOPLE TO PARTICIPATE THEY WANT TO KNOW FOR TWO REASONS, HOW THEY

ARE DOING AND THEY WANT TO KNOW SO THEY CAN LEVERAGE THEIR NEGOTIATIONS WITH THEIR VENDORS JUST AS STACY WAS SAYING, WHY AM I PAYING THIS MUCH YEAR AND THIS MUCH OVER HERE FOR THE SAME VENDOR SO IT'S HUGELY IMPORTANT AND IT'S HARD TO ENFORCE YOUR OWN RULES, BUT IT'S HARD TO GIVE DISTRICTS THE INFORMATION THEY NEED, WHY DO EXPERTS DO BETTER BECAUSE THEY KNOW.

THEY KNOW WHAT THE DATA IS THEY KNOW WHAT THE PRICES ARE.

THAT'S NUMBER ONE.

NUMBER TWO, FOOT TRANSPARENCY WILL GIVE YOU IF YOU GET IT DOWN TO THE LEVEL OF FISCAL IS VYING FOR SERVICE WITH THIS AMOUNT OF BANDWIDTH FOR THIS PRICE OR WHATEVER THE EQUIVALENCE ARE IS IT ALLOWS YOU TO PROACTIVELY MANAGE PROCUREMENT PROGRAMS ACROSS THE ENTIRE PROGRAMS IN A WAY OF HELPING IDENTIFY WHO ARE THE BEST PRACTICES AND WHO ARE THE WORST PRACTICES AND WHAT DO WE DO TO HELP EACH OF THOSE AND WITHOUT DATA WE WILL NOT BE ABLE TO DO THAT AND THAT'S WHY WE'VE HEARD THE VAST MAJORITY OF PEOPLE HAVE URGED THAT WE REALLY ADOPT AN OPEN DATA BECAUSE THE AMOUNTS OF POLICY AND THE AMOUNT OF WORK THAT COULD BE DONE BY USAC AND THE FCC AND MANY OTHERS WHO WOULD JUMP IN WOULD BE TREMENDOUSLY VALUABLE.

>>: I THINK YOU'RE NEXT IN THE QUEUE AND MY GUESS IS YOU HAVE SOME GOOD INPUT ON THIS TOPIC BUT I WANT TO GIVE YOU A CHANCE TO ADDRESS ONE OF OUR TWITTER QUESTIONS, WHICH IS HOW DO YOU PRESENT CONSORTIA FROM EXCLUDING SMALL COMPETITORS THAT CAN SERVE PARTS OF THE SERVICE TERRITORY MORE AFFECTIVELY. HAVING RUN A CONSORTIA AND A LONGTIME.

>>: SO ONE OF THE THINGS AND I'VE HEARD A LOT TODAY ABOUT STATEWIDE CONTRACTS AND THE POWER OF THAT LARGE OPPORTUNITY FOR PROVIDERS, AND IN GENERAL THAT'S TRUE.

IN MAINE, THROUGH ONE SERVICE PROVIDER COULD RESPOND TO A STATEWIDE BID SO ONE OF THE THINGS WE HAD TO DO IS DO A BIT OF A RISK AND OPEN A BAR PROCESS TO REGIONAL PROVIDERS AND THIS NOTION OF YOU GET IT ALL, I REMEMBER MANY MONTHS ACROSS THE TABLE NEGOTIATIONS AND IT TOOK MONTHS TO CONVINCING THE INCUMBENT THAT ALL DID NOT MEAN 100 PERCENT.

BECAUSE IT WOULD MEAN 0 PERCENT IF THEY DID NOT SETTLE FOR SOMETHING ELSE AND IT LITERALLY BECAME A GAME OF CHICKEN THAT ONLY ENDED BECAUSE THE FILING WINDOW WAS CLOSING.

SO WE ARE HOSTAGES, NO QUESTIONS ABOUT THAT.

WE CANNOT PICK UP AND MOVE SOMEPLACE ELSE.

SO WHAT YOU'VE SEEN ACROSS THE COUNTRY ESPECIALLY IN THAT BOTTLENECK OR THRESHOLD IS WE HAVE NO CHOICE, THEY CALL IT OVER WHEN PUBLIC FUNDS ARE SPENT AND I CAN SHOW EXAMPLES WHERE PRIVATE FUNDS WERE SPENT.

IF YOU DON'T HAVE ACCESS TO SOMETHING, IT'S NOT OVER BUILDING.

SO THAT IS THE TWO SIDES.

ONE OF THE THINGS WE DID BACK IN 2008, ARE THREE NORTHERN STATES AND TERRITORIES BEING SOLD OFF TO A SMALLER TELEPHONE PROVIDER FROM VERIZON.

WE GATHERED THE CIO'S OF ALL THE GRAND LAND AND MAJOR RESEARCH INSTITUTE AND SAT DOWN WITH AN INCUMBENT COMING IN AND SAID WE WANT TO BUY EVERYTHING ON YOUR PLAYBOOK FROM THE SMALLEST CIRCUIT TO DARK FIBER.

WE WANT IT ALL.

WE DON'T WANT YOU TO RIP THAT LAST CHECK OUT OF YOUR BOOK BECAUSE IF YOU DO WE WILL BUILD IT AND THAT WAS A HELL OF A BLUFF.

IT REALLY WAS.

WE HAD NO IDEA HOW WE WERE GOING TO DO THAT.

THEY CALLED US ON THAT.

SO WE WENT AND WE RECEIVED NATIONAL SCIENCE FOUNDATION FUNDING, NATIONAL INSTITUTE OF HEALTH FUNDING, EVENTUALLY BE TOP OF FUNDING AND WE PULLED TOGETHER A MODEL WE CREATED FOR NORTHERN NEW ENGLAND AND IT'S NOT 100 PERCENT THERE BUT IT'S 98 PERCENT THERE.

AND THAT IS PART OF THE TRANSPARENCY.

I DON'T THINK IT WOULD'VE BEEN FAIR TO JUST GO DO THAT WITHOUT GIVING INCUMBENTS THE OPPORTUNITIES TO REACT.

WE DID THAT.

THEY CHOSE NOT TO.

LIKE I SAID, WE CAN'T PICK UP AND LEAVE ALTHOUGH SOMETIMES IN JANUARY I REALLY WOULD LIKE TO JUST PICK UP AND LEAVE.

SO IT IS THE ACCESS NETWORK TODAY, IT'S NOT THE INTERNET BACKBONE, THAT'S THE CHALLENGE, ALL KINDS OF COMPETITION THERE.

WHAT WE ARE DEALING WITH IS THE ACCESS NETWORK BOTTLENECKS AND THE PROBLEMS AND THOSE ENTITIES THAT CAN'T LEAVE WE ARE FORCED TO DO CREATIVE THINGS TO GET AROUND CURRENT POLITICS AND THE PRIVATIZATION I THINK WAS SAID EARLIER OF THAT LOCAL ACTION NETWORK.

>>: TO GO BACK TO THE TWITTER QUESTIONS I WANT TO MAKE SURE I UNDERSTOOD AND THIS RECORD IS CLEAR SO FOR YOUR STATEWIDE CONTRACTS YOU LIKE COMPETITORS BID ON PIECES OF THE STATEWIDE CONTRACT.

>>: WE OPENED IT UP AND WE DID STATEWIDE BID, BUT ANY SERVICE PROVIDER COULD BID ON JUST THE AREA WHICH THEY COULD PROVIDE SERVICE SO WE ENDED UP WITH THREE AWARDS, THE INCUMBENT ENDED UP WITH LIKE 92 PERCENT, THAT'S WHAT WE FINALLY SETTLED ON ALL MEANING AND THE REMAINING 8 PERCENT WAS SPLIT ACROSS TWO OTHER SERVICE PROVIDERS.

>>: DID THAT HELP DRIVE DOWN THE PRICE FOR THE 92 PERCENT?

>>: NOT ONLY DID IT DRIVE DOWN PRICE, BUT IT GOT THEM TO INVEST IN NEWER TRANSPORT AND WE WERE STILL A STATE LONG AFTER MANY OTHER STATES HAD CONVERTED TO CARRIERS.

>>: WE ARE GOING TO DO ONE MORE QUESTION FROM THE AUDIENCE AND THAT WE NEED TO WRAP UP.

>>: MY NAME IS MILTON FRIEDMAN AND WE ARE A I.T. SERVICE PROVIDER.

WE SERVICE SCHOOLS IN THE MID-ATLANTIC STATES, MOSTLY IN DC AND BALTIMORE AND THE SCHOOLS THAT WE SERVICE ARE THE SCHOOLS THAT ARE NOT REPRESENTED HERE BY AND LARGE.

THEY ARE THE INDEPENDENT SCHOOLS IN THE CHARTER SCHOOLS AND THE ONES THAT DON'T HAVE A LOT OF MONEY AND THEY DEPEND ON THE RATES IN ORDER TO PROVIDE AND THEY DEPEND ON E-RATE IN ORDER FOR THEIR STUDENT TO BE ABLE TO DO THINGS LIKE TAKE THE TESTS AND TO BE ABLE TO FUNCTION IN SOME LEVEL AND AT THE BEGINNING OF

OUR MEETING TODAY WE TALKED ABOUT HOW IMPORTANT IT WAS TO GET INTERNET TO THE STUDENTS BUT NOW WE ARE TALKING ABOUT HOW IMPORTANT IT IS TO GET GIGABIT INTERNET TO THE SCHOOL AND I JUST WANTED TO ASK, NUMBER ONE, IF FCC IS AWARE OF HOW IMPORTANT THE BASIC MAINTENANCE PROGRAM IS ESPECIALLY TO THESE POOR SCHOOLS WHEN THEY DON'T HAVE BASIC MAINTENANCE AND THAT'S WHAT HAPPENED THIS YEAR WHEN IT WAS CUT OFF THE AT THE END OF THE FUNDING YEAR.

WE HAD TO PULL OUT AND SCHOOLS THAT WERE TAKING AND WEA OR WHEN THEY HAD THEIR INTERNET OR THEIR NETWORK INTERRUPTED OR THEIR NETWORKS LOW, THEY HAD NO ONE TO SUPPORT THEM AND WE HAD TO TELL THE CHILDREN, I'M SORRY, YOU HAVE TO GO HOME AND COME BACK ANOTHER DAY WHEN WE GET THE NETWORK WORKING AND THE MONEY THAT GOES TO THESE SCHOOLS FOR WIRELESS, FOR A BACKBONE, IF THE SCHOOL DOES NOT HAVE A STRONG INFRASTRUCTURE, THE INTERNET DOES NOT MATTER.

I WAS WONDERING IF FCC IS AWARE OF THIS AND IF THERE ARE ANY PLANS TO RESURRECT PRIORITY ONE ESPECIALLY BASIC MAINTENANCE AND ESPECIALLY FOR 2014.

THANK YOU.

>>: I WILL TAKE THE QUESTION AND THE SIMPLE ANSWER IS WE BELIEVE VERY STRONGLY THAT THIS IS CRITICALLY IMPORTANT.

YOU HEARD THAT FROM THE PANELISTS THIS MORNING AND YOU HEARD THAT FROM ALL OF THE PRACTITIONERS WHO ARE ROLLING OUT IN THE FIRST PANEL AND THIS IS PRECISELY WHY WE ARE WORKING SO HARD ON THIS MODERNIZATION PROCEEDING BECAUSE OF THE PROBLEMS IN THE CURRENT SYSTEM.

I DO WANT TO GIVE AS MANY PEOPLE AS I CAN THE CHANCE TO WRAP UP IN THE LAST COUPLE OF MINUTES SO WE WILL TRY TO MAKE IT DOWN THE ROAD, DAVID I WILL GIVE YOU ONE LAST SHOT FOR THE LIBRARY, GARY THE LAST WORD FOR THE SCHOOLS, AND THEN WE WILL GO TO COMMISSIONER CLYBURN TO WRAP UP FOR US.

COMMISSIONER CLYBURN IS WRAPPING UP THE WORKSHOP, BUT SHE KICKED OFF THIS PROCEEDING ABOUT 11 MONTHS AGO AND IS THERE FOR IN VERY LARGE PART OF WHY WE ARE ALL HERE TODAY AND BECAUSE OF THE WORK SHE DID AS CHAIR.

>>: SO JUST TO RESPOND TO THE QUESTIONERS COMMENTS, WE HAVE AGREED IT'S ONE OF THE LEGS OF THE STOOL OF EVERYTHING SORT OF STANDING ON ITS OWN SEASON AND WE ARE STILL ONLY AS STRONG OR AS FAST AS OUR WEAKEST OR SLOWEST LINK.

WITH REGARD TO THE AGGREGATION CHALLENGE, I THINK WE SHOULD REMEMBER THAT SOME OF THESE SERVICES ARE MORE COMMODITY LIKE THAN OTHERS.

SO INTERNET ACCESS, CIRCUIT CONNECTIONS, SOME EQUIPMENT FALLS FAIRLY AND SQUARELY INTO MORE OR LESS BE COMMANDED THE PLATTER SO THAT'S REALLY FROM A COMPETITIVE AND PROCUREMENT PROCESS.

WHEN WE GET TO SOMETHING LIKE WIFI CAPACITY THERE ARE DIFFERENT TECHNOLOGIES. SO TO THE EXTENT WE PROCEED DOWN THAT ROAD I WOULD ASSUME MORE LIKELY THROUGH A STATE LEVEL THEN THE NATIONAL LEVEL, BUT THAT WILL BE CLEARLY YOUR PURVIEW AND I FIRMLY BELIEVE THAT PEOPLE IN THIS ROOM, WE HAVE DEMONSTRATED TODAY THAT OUR EXPERTISE IS KEY.

THAT WAS THE POINT THAT CAME THROUGH IN DETERMINING HOW TO MAKE COMPETITIVE PROCUREMENT WORK WELL.

AND I WOULD SUGGEST THIS TECHNOLOGY EXPERTISE IS OUR DIFFERENTIATOR WORKING WITH THE FCC AND USAC AND IF WE DO NEED TO COME UP WITH STANDARDS TO GUY THAT I

THINK THIS COULD BE OUR COMPETITIVE DIFFERENTIATOR BORROWING PRIVATE SECTOR TERMS FOR THAT SO I WOULD ENCOURAGE THAT TO BE PART OF MOVING FORWARD.

>>: GERRY.

THE LAST WORD.

>>: ONE THING THAT WE HAVE TO ALWAYS REMEMBER, THERE IS SOMETHING CALLED LOCAL CONTROL AT THE DISTRICTS AND WE CAN NEVER STEP ON THAT.

THEY WON'T LET US.

IT WOULD BE POLITICAL SUICIDE CITY OF STATE MASTER CONTRACTS THAT WOULD REQUIRE THE DISTRICTS TO USE THEM AND NOT GO INTO THIS WEALTH OF SERVICES PROVIDED BY LOCALS AND STATE MASTER CONTRACTS CANNOT DO THAT.

OUR CONTRACT SAYS IT IS HERE AND AVAILABLE TO YOU IF YOU WANT IT AND IF YOU DON'T WANT TO GO OFF ON YOUR OWN AND MANY DISTRICTS HAVE DONE THAT AND SOME OF THEM ARE IN THIS ROOM TODAY AND THEY HAVE GOTTEN RATES AS GOOD AS OUR \$750 PER GAMES AND THEY'VE GOT RATES WAY BELOW THAT, WAY BELOW THAT.

SO IT IS THAT LOCAL CONTROL AND THE ABILITY TO GO OUT INTO THEIR OWN WHICH HAS DRIVEN THOSE RATES DOWN SO THAT COMPETITION THING I MENTIONED EARLIER, THAT IS WHAT IS DRIVING THAT.

>>: LET ME JUST WRAP UP BY SAYING A HUGE, THANK YOU TO THE PANEL.

IT'S BEEN A PRIVILEGE TO GET TO SPEND THE DAY HEARING FROM ALL OF YOU.

[APPLAUSE]

TREMENDOUS WORK YOU'RE ALL DOING.

[APPLAUSE]

>>: I WANT TO REITERATE MY THANKS AND ALL OF OUR THANKS TO THE FCC TO EVERYBODY WHO PARTICIPATED AND CAME AND PARTICIPATED IN PERSON AND ONLINE AND ALSO THE FCC STAFF IN MY BUREAU AND THE MANAGING DIRECTOR'S OFFICE, THE TEAM THAT MAKES THIS HAPPEN FOR PUTTING ON A GREAT WORKSHOP AND NOW IT IS MY PLEASURE TO INTRODUCE COMMISSIONER CLYBURN WHO AS WAS JUST POINTED OUT IS LARGELY RESPONSIBLE FOR ALL OF YOU BEING HERE SAID SHE WAS IN CHARGE OF THIS COMMISSION WHEN SHE RELEASED AND THE COMMISSION ADOPTED THE NOTICE OF PROPOSED RULEMAKING TO MODERNIZE THE PROGRAM LAST SUMMER.

SO WITH THAT IT'S MY GREAT PLEASURE TO INTRODUCE COMMISSIONER CLYBURN.

[APPLAUSE]

>>: THANK YOU SO VERY MUCH AND GOOD AFTERNOON EVERYONE.

I AM PLEASED TO JOIN YOU HERE TODAY AS WE THANK THE WIRELINE COMPETITION BUREAU AND THE ENTIRE E-RATE TEAM FOR SUCH A PRODUCTIVE AND ENGAGING WORKSHOP WITH THIS INCREDIBLY DIVERSE ASSEMBLY OF SPEAKERS.

THANK YOU ALSO DUE TO THE LEADERS IN THE ROOM FROM THE LIBRARY, I HAVE A SPECIAL CONNECTION TO LIBRARIES AS THE DAUGHTER OF A LIBRARIAN AND SHE WAS REALLY ACTING LIKE A LIBRARY WHEN I SAW HER YESTERDAY.

PLEASE DON'T TELL HER I SAID THAT.

AND THE EDUCATION COMMUNITY WHO CAME HERE TO LEND US THEIR EXPERTISE.

THANK YOU SO VERY MUCH.

MANY OF TODAY'S PANELISTS REPRESENT STATE, LOCAL AND TRIBAL SCHOOLS, LIBRARIES AND GOVERNMENTS AND KNOWING HOW TIGHT YOUR BUDGETS ARE, I ESPECIALLY WANT TO EXPRESS MY GRATITUDE TO YOU FOR COMING HERE AND FOR SHARING YOUR VALUABLE

EXPERIENCES AND RECOMMENDATIONS WITH THE FCC.
YOUR VOICE IS AND WILL CONTINUE TO MAKE A DIFFERENCE.
THIS MORNING WE HEARD ABOUT THE EXCITING OPPORTUNITIES FROM LOVERS ACROSS
TENNESSEE TO SCHOOLS AND URBAN RURAL AND TRIBAL AREAS.
I HAVE THE OPPORTUNITY TO VISIT YOUR SCHOOL AND I SAID I'VE GROWN A BIT SINCE
MIDDLE SCHOOL SO THE CHAIR WAS NOT QUITE AS COMFORTABLE BUT IT WAS A BEAUTIFUL
RESOURCE CENTER THAT LOOKED MUST DIFFERENT THAN THE ONE I ENCOUNTERED BACK
WHEN I WAS HOWEVER OLD YOU ARE IN MIDDLE SCHOOL.
IT'S BEEN SO LONG I FORGOT WHAT THE AGE WAS BUT I SAT IN THERE AND GOT TO VISIT
WITH THEIR VERSION OF THE GEEK SQUAD AND GOT TO SEE HOW MATH WAS MADE MORE
EXCITING BY ENABLING TECHNOLOGIES IN WHICH WE FUND IT BUT I ALSO SPOKE WITH A
SORE -- FORMER FCC COMMISSIONER AND OTHERS.
A ROOM FULL OF DECISION-MAKERS, I SAT ACROSS FROM THE PRINCIPLE AND IT WAS SO
HAPPY NOT TO BE IN HIS OFFICE.
AND THEY WERE EXCITED ABOUT BEING ABLE TO PROVIDE CONDUCTIVITY TO PROVIDE
WORKING WITH THE PRIVATE SECTOR TO PROVIDE LAPTOPS TO THESE STUDENTS AND THEY
WERE VERY CONCERNED ABOUT THE NEXT SERIES OF PHASES AND ABOUT HOW THAT
EXTREMELY LARGE SCHOOL DISTRICT THAT HAS ITS OWN POLICE FORCE, WHICH I'M NOT
SURE HOW TO INTERPRET THAT.
IT'S A VERY SIGNIFICANT SCHOOL DISTRICT IN THIS NATION AND THEY HAVE SERIOUS
DISCONNECTS.
SO THE DISCONNECTS ARE NOT SIMPLY IN OUR COMMUNITIES, THEY ARE IN OUR GIRL --
URBAN COMMUNITIES AND SITTING ACROSS THE TABLE, SITTING HERE IN THIS ROOM AND
TALKING ABOUT THE COMMUNITIES AS A NEED IN WHICH ALL OF US IN THIS NATION THAT WE
HAVE, I THINK THAT'S VERY IMPORTANT.
IT'S LIBRARIES, THEY HAVE MOVED FROM BOOKS AND WHAT IS PHYSICALLY ON THE SHELF TO
AREAS FULL OF CONDUCTIVITY WITH MASSIVE AMOUNTS OF INFORMATION AVAILABLE TO
ANYONE ON DEMAND, LIMITED, LIMITED ONLY BY THE AMOUNT OF BANDWIDTH CAPACITY
AVAILABLE.
WITH THOSE LIMITS, AS YOU'VE NOTED, THEY ARE THERE.
WE HAVE HEARD HOW CONDUCTIVITY IN SCHOOLS, HOW CONDUCTIVITY IS GIVING STUDENTS
THE TOOLS THEY NEED TO ACHIEVE AND BOOSTING THEIR CONFIDENCE SO THEY CAN HELP
CHANGE THE WORLD.
THERE IS LITTLE DOUBT THAT ROBUST BROADBAND CAN BREAK DOWN MOST OF OUR
DIVIDES.
AND ACT AS A GREAT EQUALIZER FOR OUR MOST CHALLENGED AND VULNERABLE
COMMUNITIES.
WHILE ALL OF THE STORIES ARE INSPIRING AND I AM SO INSPIRED WITH WHAT I SAW IN LA, WE
NEED TO MAKE SURE THAT THE OPPORTUNITIES WE HEARD ABOUT TODAY BECOME THE
NORM AND NOT THE EXCEPTION.
INDEED, WE ALSO HEARD THAT FAR TOO MANY AMERICANS, THE SCHOOLS AND OUR
LIBRARIES ARE THE ONLY SOURCES OF CONDUCTIVITY AND FOR OTHER EVEN THIS LEVEL OF
CONDUCTIVITY IS BEYOND REACH.
IT'S UNACCEPTABLE SO WE HAVE A ROLE IN ENSURING THIS IDEAL, THAT THIS IDEAL
BECOMES A REALITY.

FOR EXAMPLE, AT THE FCC WITH YOUR INPUT, WE NEED TO MAKE SURE THAT WE MODERNIZE THE E-RATE PROGRAM SO ALL OF OUR SCHOOLS AND LIBRARIES ARE ABLE TO TAKE FULL ADVANTAGE OF THE AVAILABLE BENEFITS IN ORDER TO UNLEASH EVEN MORE POSSIBILITIES AS TECHNOLOGY CONTINUES TO EVOLVE.

THE ROUNDTABLE DISCUSSED IDEAS ON HOW TO OVERCOME OUR CURRENT CHALLENGES AND MEET THESE GOALS INCLUDING HOW BEST TO MODERNIZE E-RATE AND DO SO IN A MANNER THAT MAXIMIZES EACH DOLLAR OF E-RATE MONEY SPENT AND MAKES THE PROGRAM MORE EFFICIENT AND SIMPLE.

YOU ALSO HIGHLIGHTED THAT ACHIEVING THE GOALS OF INCREASED CAPACITY AND CONDUCTIVITY TO SCHOOLS AND LIBRARIES IS A PARTNERSHIP BETWEEN THE FCC, THE STATE AS WELL AS THE PRIVATE SECTOR.

AND WE SHOULD ALWAYS ENCOURAGE MORE STATES TO TAKE THE LEAD AND ACT AS THOSE INCREDIBLE KEY INNOVATORS IN CONNECTING OUR COMMUNITY AND EDUCATING TOMORROW'S AND TODAY'S LEADERS.

FOR ME, THIS WORKSHOP UNDERSCORES THE TREMENDOUS NEED FOR E-RATE MODERNIZATION.

THE TIME IS NOW FOR US TO CROSS THAT FINISH LINE AND I LOOK FORWARD TO LOOKING FORWARD TO THE CHAIRMAN WITH YOUR ASSISTANCE AS WE MOVE QUICKLY TO ACHIEVE THESE WORTHY GOALS.

SO I THANK YOU SO MUCH ONCE AGAIN FOR YOUR INCREDIBLE CONTRIBUTION TODAY AND PLEASE, PLEASE ENJOY THE REST OF YOUR AFTERNOON AND TRAVEL SAFELY.

THANK YOU.

[APPLAUSE]

>>: ALRIGHT AND I KNOW YOU ARE ALL PROBABLY TIRED BUT I WANT TO GIVE MY BOSS AN OPPORTUNITY TO SPEAK.

JULIE VEACH WHO IS THE CHIEF OF THE WIRELINE BUREAU AND ALSO JON WILKINS WHOSE ARE MANAGING DIRECTOR TO PROVIDE SOME -- TO CONCLUDE THINGS.

[LAUGHING]

>>: IT'S BEEN A FULL DAY HASN'T IT.

THANK YOU TO COMMISSIONER CLYBURN.

I THINK SHE VERY ELOQUENTLY SUMMED UP THE VALUE OF TODAY'S WORKSHOP AND I WON'T REPEAT ALL OF THAT.

I WILL JUST INCORPORATE HER THOUGHTS BY REFERENCE INTO MY OWN.

THANK YOU SO MUCH.

THANK YOU TO ALL OF OUR SPEAKERS AND OUR PANELISTS WHO I AM SURE SUFFERED GREAT INCONVENIENCE AND EXPENSE TO BE HERE WITH US TODAY.

IT REALLY MATTERS.

SPEAKING ON BEHALF OF MYSELF AND THE STAFF OF THE WIRELINE BUREAU, I THINK I CAN ALSO SPEAK FOR THE OFFICE OF THE MANAGING DIRECTOR AND SAYING THIS HAS BEEN A LONG PROCESS.

OBVIOUSLY THE STAFF HAVE BEEN WORKING ON THESE ISSUES SINCE BEFORE THE NPRM WAS RELEASED LAST YEAR UNDER CHAIRWOMAN CLYBURN'S LEADERSHIP AT THE TIME.

AND WHAT YOU HAVE SAID TODAY AND THE THINGS YOU'VE CONTRIBUTED AND THE SPECIFIC FACTS AND INFORMATION AND INSIGHT THAT YOU HAVE GIVEN US WILL GO INTO THE RECORD OF THIS PROCEEDING AND BECOME PART OF WHAT WE ARE PRODUCING, WHICH IN THE NEXT

FEW MONTHS WE WILL UNVEIL AS THE NEXT STEP IN THE PROCESS OF THANK YOU VERY MUCH, FOR WHAT YOU HAVE DONE.

I WOULD ALSO LIKE TO THANK PATRICK HEALY, CHAS EBERLY, MICHAEL STEFFEN, LISA HOLMES, AND ALL OF THE TEAMS WITHIN THE BUREAU AND THE MANAGING DIRECTOR, OUR TEAM AS WELL FOR PUTTING TOGETHER THIS WORKSHOP.

ALSO A SPECIAL TIP OF THE HAT TO HER OFFICE OF STRATEGIC PLANNING FOR HELPING US DEVELOP THIS.

AS I SAID, THIS WAS AN IMPORTANT STEP.

IT WAS THE NEXT STEP.

WE CONTINUE TO PLUG AHEAD.

AND I AM SURE WE WILL BE IN TOUCH WITH YOU AS WE HAVE SPECIFIC FOLLOW-UP QUESTIONS AND OTHER THINGS BUT IN THE MEANWHILE, PLEASE STAY ENGAGED WITH US. PLEASE STAY ACTIVE AND LET'S WRAP THIS UP FOR THE BENEFIT OF ALL OF THE STUDENTS AND LIBRARY PATRONS IN THE COUNTRY AS QUICKLY AS WE CAN.

I THINK JOHN WANTS TO ADD A FEW WORDS ONTO THAT BUT AGAIN THANK YOU VERY, VERY MUCH.

[APPLAUSE]

>>: I WILL WRAP UP QUICKLY AND EVERYBODY CAN GET OUT OF HERE AND ENJOY THE NICE AFTERNOON WE HAVE HERE IN WASHINGTON.

FIRST, I WILL JUST SAY, THANK YOU ONE MORE TIME.

EVERYONE SAID IT BUT COLLECTIVELY EVERYONE IN THE ROOM AND FOLKS HERE NOW, I'M RELATIVELY NEW TO PUBLIC SERVICE JOINED ABOUT SIX MONTHS AGO AND IT'S INSPIRING TO SEE THIS EFFORT AND THE WISDOM AND ENERGY PUT INTO THIS IMPORTANT AREA.

I'VE HAD THE PRIVILEGE NOW OF WORKING FOR CHAIRMAN WHEELER FOR A WHILE SO AS YOU KNOW, THE NEXT STEP IN THIS JOURNEY IS CHAIRMAN WHEELER IS GOING TO COME UP WITH WHAT HE WANTS TO PROPOSE TO HIS COLLEAGUES ON THE COMMISSION AND SOME CHANGES TO THE PROGRAM SO I THOUGHT I WOULD CLOSE WITH A COUPLE OF THOUGHTS ON THAT PIECE OF THIS PROCESS.

SO THOSE OF YOU THAT NO CHAIRMAN WHEELER WOULD AGREE HE'S A FAN OF HIS WORD. IF HE SAYS HE'S GOING TO DO SOMETHING HE REALLY WILL GO OUT AND DO EVERYTHING IN HIS POWER HE CAN TO DO IT.

IN THIS CONTEXT IT WAS A VERY SPECIFIC MEETING SO A LOT OF TALK ABOUT GOALS.

99 PERCENT OF STUDENTS, 100 MEGABITS, AND THE MARCHING ORDERS HE HAD GIVEN THE STAFF IS IT'S NOT THAT THAT'S A GREAT ASPIRATIONAL GOAL AND LET'S SEE HOW CLOSE WE CAN GET AND USE IT AS A RALLYING CRY AND PASS A NEW RULES AND THEN WE WILL BE DONE.

HE ACTUALLY MEANS WE ARE GOING TO ACHIEVE THOSE GOALS.

AND SO WHILE I KNOW THERE IS A LOT OF FOCUS ON UPCOMING RULE CHANGE PROPOSALS AND THOSE ARE REALLY IMPORTANT, THAT IS ONE PIECE OF MANY, MANY OTHER THINGS GOING ON.

HE TALKED A LITTLE BIT THIS MORNING ABOUT PROGRESS THAT WE MADE WITH THE APPLICATION PROCESS AND A QUICK STORY SO THE CHAIRMAN CAME OVER AND JOINED THE BOARD OF USAC LAST WEEK FOR THEIR QUARTERLY MEETING.

AND THE STORY WAS THE LAST TIME THE CHAIRMAN OF THE FCC MET WITH USAC NOT JUST TO TALK ABOUT E-RATE, BUT TOM WHEELER WAS ALSO IN THE ROOM HE WAS A BOARD

MEMBER.

SO IT'S BEEN A WHILE SINCE YOU HAVE THIS LEVEL OF TRUE FOCUS AND ENGAGEMENT FROM THE FCC ON THIS ISSUE AND I CAN SAY FROM THE STAFF PERSPECTIVE YOU HAVE OFFICE CHIEFS AND BUREAU CHIEFS AND I THINK ABOUT HALF OF JULIE'S BUREAU WORKING ON THIS ITEM AND THE OTHER HALF WORKING ON OPEN INTERNET AND THE OTHER WORKING ON OTHER THINGS SO IT REALLY IS A HUGE COLLECTIVE EFFORT FROM THE COMMISSION AND THOSE OF YOU THAT HAVE BEEN PART OF E-RATE WOULD AGREE IT REALLY IS A TRUE NEXT CHAPTER IN WHAT HAS BEEN [INAUDIBLE].

SO LAST THING, MY THOUGHTS ON THE WORKSHOP.

THE THING I WAS MOST STRUCK BY AROUND THE TABLE AND THE QUESTIONS, IT'S AN EXTRAORDINARILY DIFFERENT PICTURE WHEN IT COMES TO TECHNOLOGY IN CONNECTING CLASSROOMS I WAS A YOUNG STAFF PERSON BACK IN 1998 AND THE ISSUES THAT WE ARE TALKING ABOUT NON-THE LEVELS OF EXPERTISE AT THE TABLE REALLY IS STUNNING AND EXTRAORDINARY.

I WOULD SAY FOR MYSELF IF THE COLLECTIVE PROGRAM AROUND THE COUNTRY AND ALL THE DECISIONS MADE AT THIS TABLE, WE COULD BE DONE.

THE PROGRAM WOULD BE IN GREAT SHAPE, BUT THE REALITY IS THE COMPLEXITY OF WHAT WE ARE TRYING TO DO OUT THERE IN THE WORLD OF SCHOOLS AND LIBRARIES IS REALLY HARD AND CHALLENGING ESPECIALLY COMPARED TO THE ORIGINAL WAYS THE PROGRAM WAS CONCEIVED SO THAT IS WHAT WAS SO IMPORTANT ABOUT TODAY.

WE'VE HEARD SO MANY NOT JUST INTERESTING AND INSIGHTFUL BUT REAL WORLD VALIDATED FACTUAL THINGS THAT ARE REALLY HAPPENING OUT THERE IN THE REAL WORLD. THE CHAIRMAN CHARGED US TO FIGURE OUT WHAT IS WORKING BEST AND TRY TO MAKE THE PROGRAM FIT AS WELL AS POSSIBLE TO ENABLE THOSE THINGS TO BE DONE AROUND THE COUNTRY AND THAT'S HOW WE WILL ACHIEVE THE GOALS.

SO WITH THAT, I WILL CONCLUDE AND SAY THANK YOU EVERYONE SO MUCH FOR THE TIME AND ENERGY AND THIS WILL NOT BE THE LAST TIME WE WILL BE ASKING TO GET READY FOR THE NEXT ROUND.

THANK YOU AND THANK YOU AGAIN TO EVERYONE WHO'S BEEN WORKING ON THIS.

[APPLAUSE]