Distributing the Future;
Which Children Will We Leave Behind?

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Today, I will focus on the biggest issue the FCC will face in how it upgrades the E-Rate program; whether all American school children will soon be able to take advantage of transformative digital education or whether that opportunity will only be available to some, with millions left behind for years, if not decades, to come.

Before discussing that decision, let me quickly note that I serve in a voluntary capacity as an advisor to the LEAD Commission, a coalition organized to provide policy makers insight into how to advance education through digital technologies, but I am speaking solely for myself, reflecting my experiences running the National Broadband Plan, as a business lawyer and as a Wall St. analyst.

And I am not here to advocate a position. Rather I'm here to lay out the implications of that decision in a way that, frankly, was missing from the first several rounds of comments to the FCC, and to ask a critical question that some are trying to avoid.

Let's put the issue in context by reviewing the overall FCC rulemaking on how to upgrade the E-Rate program.

In 1996 Congress overwhelming voted to establish the E-Rate program as a way to bring the tools of modern communications technology into all classrooms. The issue at that time was how to connect the classrooms.

In 1996, only 17% of the nation's schools were connected to the Internet. In 1996, "Internet access" generally meant dial-up connections. In that environment, the FCC under Chairman Reed Hundt created implemented the E-rate program and established a $2.25 billion budget for the program. We set that budget based upon what we felt was needed by schools and libraries at that time to get their facilities connected to the Internet.

The E-rate program succeeded. Today, virtually all schools and libraries have some form of Internet connectivity for educators and learners.

We should be proud of what the E-rate has achieved. Proud, but not content.

With the advent of broadband, Wi-Fi, and tablets, the opportunity for transformative change to the way teachers teach and learners learn is much greater; the challenge is no longer connectivity but rather, as Commissioner Jessica Rosenworcel has noted, capacity.

In that light, a wide range of voices, from the 2010 National Broadband Plan to the State Education Technology Directors Association called on the FCC to upgrade the program, citing a number of surveys demonstrating the vast majority of teachers find current bandwidth levels inadequate.

The FCC last summer started a rulemaking process and received a huge response – with thousands of educators, administrators, and parents filing comments before the FCC, clamoring for broadband upgrades to their schools. Nearly all the respondents acknowledged the program's success but implored the FCC to make numerous changes to seize the opportunities new technology enables.

From that record, three big sets of decisions emerge.

First, the FCC has to reform and reprioritize the way it spends and accounts for E-Rate expenditures so that the dollars are focused on bandwidth and classroom connectivity, sometimes referred to as internal connections, goals. The E-rate's current priorities were set when dial-up connections were the norm and inside wiring was the only method of getting the Internet to student classrooms. Those priorities don't apply any more. The record suggests we can save hundreds of millions, if not more, if we do that right.

And let's be clear. That is the first task. Until we are certain the program spends its money to efficiently serve clearly establish goals, we should not consider more funds. We need to be able to demonstrate that after the upgrade, the E-Rate program will get more for its money.

Here, we're lucky that Tom Wheeler will be overseeing this process. He's a person willing to immerse himself in the details of such programs and I'm confident he will be a great steward of public funds.

The second task for the FCC is to establish rules so that competitive forces can enable schools to purchase assets and services at the lowest possible long-term cost. The record suggests that is not true today. Again, savings in the hundreds of millions are possible by adjusting those rules. The FCC must capture those savings.

But even after the savings from the first two decision sets, it may not be—in fact, it's unlikely to be--enough.

So that gets us to the third challenge; how to size the budget. That's my focus today.

To understand the meaning of that decision, let's start with some questions.

Who here believes we will have at least a Gig in every classroom in the country fifty years from now, in the year 2063?

2043?

How about 20 years from now?

10 years from now?

Five?

What you have illustrated, by both the conviction that gigs in every classroom are inevitable, and by the decrease in hands as the time shortens, are two important points.

First, we know what the future looks like. It's a well-connected classroom, linked to a high capacity physical conduit with the last connection provided by robust Wi-Fi, with kids on tablets interacting with teachers, fellow students and digital content.

The FCC record reflects a consensus about that future, showing a nearly universal belief that the current level of connectivity is inadequate and must be upgraded and that America urgently needs to put the tools of modern communications technology into the hands of students, teachers, and schools.

Here's a story from that future that occurred a few months ago—yes, a story from the future that occurred a few months ago--that I heard at a recent dinner hosted by Comcast, a company that deserves great praise for its Internet essentials program and its efforts to get everyone on broadband.

A Khan Academy executive was visiting the Innova Schools in Peru, which rely heavily on Kahn Academy teaching modules. While the students were working away on the tablets, a teacher pointed to a student and said, "that student is about to ask me a question about negative numbers." The Khan executive said "huh?" The teacher pointed to her tablet, which reflected the progress of each of the students on the work they were doing. When any student got a problem wrong three times, there was a red mark, as there was for this student on the problem set involving negative numbers.

Sure enough, seconds later that student raised his hand and asked the predicted question. And critically, the teacher assisted that student with the precise aide that student needed to move forward.

That is the future. It is happening today. Just not in many places in the United States.

Which is the second point you illustrated.

As science-fiction writer William Gibson noted, "the future is already here. It's just not very evenly distributed."

We know the most affluent, urban and suburban communities are going to get a gig in the classrooms. We know that those kids will have access to the best educational content in the world. We know that, as illustrated above, those kids will have the precise, targeted aide they need to move forward.

But there are two things we don't know.

First, when will all kids have that?

And second, will America lead or follow in that transformative revolution?

That is what is at stake.

The FCC will not determine whether gigs enter the classroom. Some classrooms will have it. Some communities will take it on their shoulders to give their students the best capacity and technology.

What the FCC can do, however, is determine the pace of the distribution to those communities without the means and where the costs are higher.

And the pace of that distribution will determine whether the U.S. market uses products **we** create or whether we will consume products created by **other nations that do understand** and acted more decisively on that inevitable future.

Earlier this year, FCC Commissioner Ajit Pai gave a thought provoking speech about upgrading the E-Rate program in which he said ""Today, too many kids walk off the school bus, only to walk decades into the past. This is unacceptable." He also said he wants his kids' education "to be as advanced as the world in which we live" and that they should benefit from "the latest technological innovations. I am sure most people feel the same way…Parents are right to expect that schools will help prepare their children for the America of tomorrow, and they know that can't happen in the classroom of yesterday."

He's right.

We know that already some kids have that kind of classroom that when they step off the bus and others don't. As a recent Pew study noted, teachers of low income students are more than twice as likely as teachers of higher income students—by a 56 to 21 percent margin—to say that students' lack of access to digital technologies is a major challenge to incorporating more digital tools into their teaching.

But, as Commissioner Pai noted, all parents want their kids to have such access. And we as a society benefit if every parent has that as soon as possible.

It's not going to happen tomorrow. But the FCC will determine when it does when it sizes the budget and the priority for spending that budget.

So far, I'd wager that everyone here agrees with most of what I said. But I don't believe in sweeping controversy under the rug and now I want to focus on what is likely to be a significant controversy in the proceeding.

Should we increase the size of the E-rate fund?

Some have argued that the program should be capped at its current level of $2.3 billion per year. The program's current level was set in 1997 and until 2010 was not even adjusted for inflation. While IT budgets in the federal government rose about 6% a year during that period, the e-rate did not, meaning that it is already 160% below what it arguably, by some measure, should be.

It should also be noted that the requests for funding already would use over twice the available funds. Nevada schools and libraries, for example, requested $29.5 million, but received only $13.2 million.

I'm not going to make an argument about what the right size of the fund should be. Frankly I don't know though I am working my way through the record to try to figure that out. And as noted above, the first task is to determine the size of the savings through program changes.

But I want to take issue with the argument that the E-rate should be capped at today's levels.

I could make that argument by simply referring to the overwhelmingly support in the record for more funding.

But my focus, based on my background, is not on whether an idea is popular but whether it makes analytic sense and there are two large analytic flaws in the argument for capping the funds at current levels. First, as a policy position, it does not reflect a serious analysis. Second, no one who has made the argument has been upfront about the consequences of the argument.

As to the first point about a lack of seriousness, let me illustrate by asking, can anyone point to any private sector company which caps its IT budget at the level it spent in 1997?

The answer, of course, is no, because any CEO who made such a rule would, and should be laughed at, and then fired. So much has changed. Some budgets are higher—because IT is so much more important and the dollars spent on IT do so much more. Some are lower, because Moore's Law makes the component parts cheaper. But no business lives by the rule that as to an IT budget, if it was good enough for 1997, it's good enough for 2014 and beyond.

So if any Nevada political representative argues for keeping the current E-rate cap, you should ask them to explain is why government executives should follow a rule that would cause private executives to be laughed out of the boardroom.

Perhaps they will argue that only Congress should have the power to raise the cap. They will then have to explain why the FCC over the years has increased the size of its other universal service funds for other uses, such as to support high cost areas in rural America, without Congressional approval. Indeed, when the E-rate program was instituted, the E-rate program constituted nearly 50% of the federal universal service program – now, 16 years later, it is projected to account about 30%. The other funds all increased in size without Congressional approval. Why should the rule be different for the E-Rate?

Another argument for the cap--one I respect--is that money is limited, everything needs a budget, and the current cap reflects the priority that the federal government should place on getting increased bandwidth into the schools.

That is a rational argument. Priorities have to be established. Budgets should be followed.

But proponents of the cap have not been forthright about the consequences. First, you should ask them to acknowledge that the impact of their policy is to distribute the future over a longer period of time; maybe 10, maybe 15, may 25 years, who knows?

Second, you should also ask those advocating the cap to set forth the principle by wish the FCC should prioritize the distribution of these artificially limited funds? Who gets the gig now and who gets it in 2030? Which children do they wish to leave behind?

I personally think we should set a budget for the E-rate program based on setting a capacity target and then getting the job done in a short period of time, 5 years or less. If we need more than we have needed in the past, so be it. That is how any capital-intensive business sets its budget – and it sometimes means that in some years, those businesses will need to invest more in order to achieve particular goals.

But if others prevail and set the budget based on the current cap, then the FCC methodology for prioritizing distribution takes on far greater significance as it has the potential to create a much larger, longer, educational digital divide.

The E-rate program already has some prioritization. It moves funding to the most needy schools. The record demonstrates that the program could use some tweaking in the percentages it uses to match funding to need.

But once we have done that, and established which schools are in the bucket of greatest need, then within that bucket, how should the FCC prioritize funding.

I have spent most of my professional life in the private sector and from that perspective, there's only one reasonable answer: you prioritize based on the serving those who cost the least, first.

If you were a business and you could spent a billion dollars to service ten million customers or, alternatively, spend that billion to serve a million customers, which would you do?

The answer is obvious. You prioritize to reach the biggest market in the shortest period of time at the lowest cost.

Schools are different than markets but the same logic applies for two reasons. First, and obviously, you want as many kids as possible to have the benefit of the digital education as soon as possible.

Second, and less obvious but an important insight from the LEAD Commission report, is we want the market for digital education to be as big as possible as quickly as possible, as that is more likely to lead to American leadership in what is going to be a market worth tens of billions of dollars.

Something else Commissioner Pai said in his speech was that every school should get money on a per capita basis.

I disagree with that, in part because it disadvantages rural America. But I respect the principle of equality.

If we apply that principle here, it leads to prioritizing the lowest cost students first; otherwise, we are effectively valuing higher cost students more, even though that leads to worse outcomes overall and threatens American leadership.

Of course, prioritizing like that means some students get it now; some get a long time from now.

I don't like that. I prefer everyone enjoying the bandwidth they need in a short time frame. Of course, prioritization always matters but the consequences are limited if the budget is sufficient. If a small budget puts us on a long term path to accomplishing the mission, the consequences of prioritization are large and ought to be well understood.

In thinking about the problem this way—that is, that the core issue is how do we create a baseline national level of service—I am adhering to the Congressional mandate in establishing universal service principles. On several occasions, Congress said that we don't want to wait for market forces to deploy a service everywhere in the country. Congress mandated that some services—electricity, water, voice—are so important, our country must transfer revenues from some areas to others to assure that all have certain foundational services. Congress was wise to do so.

Congress was also wise in 1996 to add communications services to schools and libraries to that list.

When it did so, Congress said that universal service is "an evolving level" of telecommunications services – and it required that the FCC shall "periodically" reassess as to whether they are "essentially to education, public health, or public safety." Congress also told the FCC to use its power "to enhance, to the extent technically feasible and economically reasonable, access to advanced telecommunications and information services for all public and nonprofit elementary and secondary school classrooms, health care providers, and libraries."

It's important to note that Congress did not design this effort as a blank check subsidy to schools across the country; rather it is assure the universality of foundational services that the country benefits from having everywhere. Therefore, it is critical that the FCC limits its distributions to only those critical services. As noted above, reprioritizing to meet the capacity needs has to be job one.

Some might argue that schools are a local affair and the federal government should not fund these services. But that debate was decided in 1996. The wisdom of that Congressional decision can be seen throughout the record as a broad cross-section agreed that the program has already served a valuable national purpose. We will see that wisdom magnified as the transformational impact of digital content, particularly in low-income and rural areas is just beginning.

Of course the ultimate goal is not really about bandwidth; it's about better-educated kids. A fund capped at current levels will mean that by the time poorer and rural schools reach the future, the wealthier schools will have spent a decade or so deploying, exploring, innovating with the best educational applications and individualized learning services. Kids in that environment will get smarter; kids who get off the bus and walk into the classrooms of the last century will not. A decade hence, we will not be talking about a digital divide, we will be talking about an educational digital divide.

The goal is not perfect equality. I may wish it but its not going to happen. But part of the miracle of the bandwidth-distributed content is how it overcomes historic inequities; how the best for one becomes available for all. Whatever your income, with the right access to bandwidth, you can use the same search engine as billionaires use. Your kids—all kids--can have access to the best educational content. E-Rate can be used to close societal divides, but if capped at current levels, it could increase them.

I may have the principle for prioritization wrong. Maybe the way every business invests in not right for a government agency. I'd love to hear if there is another principle that would serve students and national purposes better and I would happy to discuss this issue with anyone, anytime, anywhere.

But here is what I know I have right; that the most important decision the FCC will make in its E-Rate policy; what is the path by which we get to the future for all students? And I am right that proponents of a cap should be honest about its consequences and their views of prioritization.

The decision ahead for the FCC is not easy.

But let's be frank and clear. An artificial cap set sixteen years ago in a dial-up world does not save us money—indeed, over the long term it is likely to cost us money. Now is not the place to explain how the proposals from some who consider themselves fiscal conservatives are penny wise and pound-foolish, but we should be clear that in looking at cost, it is not about the cost of a single year; it is the cost of achieving the mission over the total life of the program.

Again, I am not here so much to advocate a policy as to reflect on lessons from my life. One thing I learned in a decade of doing corporate and bond deals, and a decade of looking at numbers on Wall Street, is that anyone who focuses on the one-year cost of an asset that has a useful life of decades is not a fiscal conservative. That person is—well, as we are in polite company, so I won't say what we used to call such a person. But let me give some business advice to young people in the audience; if you are ever in a private transaction, that's the person you want on the other side of the table.

So, in closing, let's make sure the E-Rate debate is clear about this. The big decision we should focus on is not the budget in any one year; it is the time we are going to take to future proof the bandwidth to meet the needs for all our students.

I hope everyone here will participate in the process and agree that, yes, we need to make sure we eliminate unnecessary costs, enable cost-effective buying and make the tough decisions to prioritize what we need for the future. But let's make sure the FCC does not cap its ambitions with an artificial budget cap established in the dial-up age. And let's make sure the FCC decision does not cap the future of millions

of our children, especially those most in need, and thereby cap the future of our country.

Thank you.