

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of

Schools and Libraries Universal Service
Support Mechanism

A National Broadband Plan
For Our Future

CC Docket No. 02-6

GN Docket No. 09-51

REPLY COMMENTS OF QUALCOMM INCORPORATED

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SUMMARY

Many of the opening commenters agree that now is the time for the FCC to update the “E-rate” program to support mobile broadband. As Chairman Genachowski said last week, no technological innovation in our lifetime has a greater potential to transform education than broadband, and to take advantage of that potential, the E-rate program should support the use of e-readers and other new mobile broadband devices and technologies. *See* Prepared Remarks of FCC Chairman Genachowski, National Rural Education Technology Summit (July 21, 2010) at 1, 3 (“E-readers provide extraordinary opportunities for students and teachers. If schools want to support learning on the mobile tools of tomorrow, E-Rate should support them.”). Per Chairman Genachowski’s comments, the E-rate program should support a complete mobile broadband educational delivery system that includes portable learning devices, such as e-readers, as well as the underlying wireless service. Such a system will enable students and teachers to expand the educational experience beyond the confines of the physical classroom and traditional school day, and provide simple, low-cost access to state-of-the-art, high-quality, personally relevant, instructional materials and more customized learning opportunities.

Mobile broadband enables a powerful aspect of learning among students: student-to-student communications on homework after school. A key factor in the improved student performance observed in Qualcomm’s multi-year Project K-Nect in which students at four high schools in North Carolina were provided with smartphones and 24/7 Internet connectivity, was the networking among students after school. Students used the devices and technology to work together to solve homework problems, rather than giving up until the next school day.

Without question, using E-rate funds to help provide K through 12th grade students full mobile broadband connectivity will “enable new ways of teaching and learning,” “create new

ways for individuals to interact with government institutions,” and ensure the “long-term success of our workforce.” E-rate NPRM at ¶ 2. Thus, the Commission must authorize E-rate funding for e-readers, USB dongles, wireless PC cards, and Mi-Fi devices, which are an integral and essential part of a wireless broadband educational delivery system and are rapidly replacing traditional means of instruction, such as textbooks. Over the coming decade, due to improvements and cost reductions in tablet computers, e-readers, smartbooks, and smartphones, digital texts will substantially replace paper texts. Chairman Genachowski and the FCC are right to anticipate this change, and they should not delay appropriate support to enable such digital learning. Such FCC action is an essential component of implementing the educational goals of the National Broadband Plan

In summary, the proliferation of portable learning devices and mobile broadband networks presents an unprecedented opportunity to take advantage of this most pervasive communications platform to improve and transform America’s educational system. Qualcomm applauds the FCC’s commitment to modernize the universal service programs to support ubiquitous broadband connectivity and associated mobile broadband educational tools so that students can take a more active role in their education as they continue their learning outside of school, while they are at home, on the bus, at the library, museums, and other centers of learning.

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Qualcomm Incorporated (“Qualcomm”) hereby offers these reply comments in response to the Federal Communications Commission’s (“FCC’s”) Notice of Proposed Rulemaking and related releases proposing to modernize and improve the schools and libraries universal service support mechanism, better known as the “E-rate Program.”¹ Qualcomm strongly supports the FCC’s proposals to provide E-rate funding for mobile broadband to allow students and educators to continue their learning off of school premises and outside of school hours.²

INTRODUCTION

As the opening comments make clear, a number of parties have found, like Qualcomm, that anywhere/anytime access adds significant dimensions to mobile broadband’s ability to

¹ See Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6, and A National Broadband Plan For Our Future, GN Docket No. 09-51, *Notice of Proposed Rulemaking*, FCC 10-83 (rel. May 20, 2010) (hereinafter “E-rate NPRM”). Qualcomm submits these reply comments on all three items in the above-referenced dockets pursuant to the FCC’s June 9, 2010, Public Notice DA 10-1045, WCB Announces Comment Deadlines on E-rate Broadband NPRM, Eligible Services List FNPRM, and on E-Rate Draft Eligible Services List for Funding Year 2011.

² See *FCC Connecting America: The National Broadband Plan* (rel. Mar. 16, 2010) (hereinafter “FCC NBP”) at 239, Recommendation 11.23.

expand opportunities for learning. By way of example, a key factor in the improved student performance observed in Qualcomm's multi-year project with four high schools in North Carolina, Project K-Nect, that provided students with smart phones and 24/7 Internet connectivity, was the ability to support networking among students at night so that the students could work together to solve challenging homework problems, rather than having them give up until the next day.

Over the next decade, due to improvements and cost reductions in e-readers, smartphones, and tablet computers, paper texts will be substantially replaced by digital texts. The FCC must act now so that the school districts and students participating in the E-rate program can take part in this important educational transformation. Indeed, aside from giving students anywhere/anytime access to libraries of publications and other information, e-readers offer the benefit of a dynamic reading experience that blends content with motion graphics and video to significantly amplify the learning experience over today's static textbook. E-readers also enable the development of customized curricula designed to individual student needs.

Qualcomm and others explained in their opening comments that in order to take full advantage of such opportunities the FCC needs to promptly authorize E-rate funding for 3G wireless broadband services, as well as associated mobile learning devices, such as e-readers, USB dongles, and Mi-Fi devices, which are necessary for effective use of mobile broadband service.³ The extraordinary success and innovative teaching approaches exemplified by the numerous projects detailed in Qualcomm's opening Comments⁴ and the E-rate NPRM itself⁵

³ See Comments of Qualcomm Incorporated (July 9, 2010). See also n.7 *infra*.

⁴ See Comments of Qualcomm at 8-14.

⁵ See E-rate NPRM at ¶47.

demonstrate that mobile broadband technology will revolutionize education. Indeed, rather than restricting the use of mobile devices within schools, educators and students around the country are successfully embracing anywhere/anytime mobile broadband connectivity. These successes represent just the tip of the iceberg. Teachers are using text messaging to deliver assignment reminders to students, and both students and teachers are using mobile devices to collaborate on projects, organize class schedules, create podcasts, access lectures and teaching tools from top-notch educators, record lectures and demonstrations, and transmit recordings and videos to other students to facilitate collaborative learning opportunities.⁶

Providing such mobile broadband connectivity helps students disadvantaged by the lack of technology resources and support at home, which often leads to their falling behind in core school subjects. Qualcomm and its mobile communications industry partners are at the forefront of helping educators improve their teaching and students their learning via robust mobile broadband connectivity, devices, and educational software applications. Consistent with the recommendations of the National Broadband Plan, the Commission should authorize use of E-rate funding to enable all schools to take advantage of the expanding options offered by the mobile communications industry.

DISCUSSION

I. Many Commenting Parties Would Like The FCC To Promptly Permit E-rate Funding To Be Used For Mobile Educational Purposes Off Of School Premises And After School Hours

Many commenters, in full agreement with Qualcomm, strongly encourage the FCC to

⁶ The Commission has recently recognized the educational utility of text messaging and modified its rules to allow E-rate support for text messaging for such educational purposes. *See, In the Matter of Schools and Libraries Universal Service Support Mechanism, Report and Order and Further Notice of Proposed Rulemaking*, 25 FCC Rcd 6562, 6571, ¶ 17 (2009).

swiftly authorize E-rate funding to provide students with anytime/anywhere access to mobile broadband connectivity.⁷ They agree with the Commission that 21st century education programs require students to have full access to information outside of the classroom.

AT&T explains that the FCC's proposal to provide E-rate support for off-campus wireless broadband Internet access can instantaneously lessen the "digital divide" between students that have broadband Internet access at home and those that do not.⁸ As Chairman Genachowski has explained, "Education does not stop at the schoolyard gate, and so support of broadband for education shouldn't stop there either."⁹ Swift implementation of the FCC's proposal will provide American children with "the digital skills required to participate in our 21st century economy and society."¹⁰ Mobile broadband access will allow students to continue their learning on the bus to and from school, which is especially important for students in rural areas that need to travel many miles to school.¹¹ Educators also will reap benefits from updating the E-

⁷ See Comments of AT&T (July 9, 2010) at 9; Comments of Cisco Systems, Inc. (July 9, 2010) at 5-6; Comments of Clearwire Corp. (July 9, 2010) at 3-4; Comments of CTIA - The Wireless Association (July 9, 2010) at 14-19; Comments of eChalk, Inc. (July 9, 2010) at 3-4; Comments Of Miami-Dade County Public Schools (July 9, 2010) at 6; Comments of Motorola Inc. (July 9, 2010) at 2; Comments of the New York State Office of Children and Family Services (July 9, 2010) at 2; Comments of Information Technology Centers of the Ohio E-Rate Consortium (July 9, 2010) at 15-16; Comments of the Public Broadcasting Service (July 9, 2010) at 2-4; Comments of Sprint Nextel Corporation (July 9, 2010) at 2-5; Comments of Sunesys, LLC (July 9, 2010) at 7. See also E-rate NPRM at ¶ 46.

⁸ See Comments of AT&T at 9.

⁹ Prepared Remarks of FCC Chairman Julius Genachowski, "Connect a School, Connect a Community," ITU World Telecommunications Development Conference, Hyderabad, India (May 25, 2010) (also noting the benefits of e-textbooks, broadband Internet access, and the need to expand our collective focus "from schools and classrooms to students and teachers").

¹⁰ *Id.*

¹¹ See, e.g., Comments of Conterra Ultra Broadband, LLC (July 9, 2010) at 6 (noting that Navajo students face one hour plus bus rides to and from school, and far away from any possibility of traditional Internet access).

rate program, for as “wireless education technologies allow learning to expand beyond the four walls of the classroom and the hours of the school day, teachers will gain flexibility in how they can use precious classroom minutes.”¹²

With the overwhelming majority of schools now wired for broadband Internet access,¹³ now is the time for the E-rate program to move onto the next stage of advanced educational support by funding full mobile broadband connectivity, including portable learning devices as explained in the following section. Qualcomm strongly believes that the FCC should support 24/7 online learning as proposed in the E-rate NPRM through eliminating the current rule that requires schools to allocate the cost of wireless Internet access service between funded, in-school use and non-funded uses away from school premises.¹⁴ As CloudED Mobility notes, “Making wireless Internet access and wireless telecommunications services eligible for full E-rate support, regardless of physical location, also simplifies applicants’ eligible use compliance activities and is thus fully consistent with the goal of streamlining the E-rate program,” for it relieves them of having to account for the usage that occurs off of school grounds.¹⁵

¹² Marie Bjerede, Kristin Atkins (Qualcomm) and Chris Dede (Harvard University), “Ubiquitous Mobile Technologies And The Transformation Of Schooling,” (2010) *available at* http://www.qualcomm.com/common/documents/articles/Wireless_EdTech_Article_EducationTechnology.pdf (containing many insightful observations and noting that 24/7 access to digital content will increase student engagement in learning because wireless devices will build on strengths and preferences that students developed by using the tools outside classroom settings).

¹³ See E-rate NPRM at ¶ 3 n.3 (citing the National Center for Education Statistics).

¹⁴ See E-rate NPRM at ¶ 9. Qualcomm also requests that the FCC allow schools that serve unique student populations to receive E-rate funding for priority one and priority two services delivered to residential areas where students do not have access to comparable facilities if they were to reside at home. See *id.* at ¶¶ 55-57. In addition, the FCC should give a higher priority to broadband Internet connectivity than for dial-up access, for doing so will enable full access to the entire range of content and applications available via the Internet. See *id.* at ¶¶ 58-59.

¹⁵ See Comments of CloudED Mobility (July 9, 2010) at 3.

Such action by the agency would make available the innovative educational approaches and tools detailed by many commenters to the most needy schools, in particular.¹⁶ And, as the Commission recognizes, it would “permit funding for connectivity that schools may increasingly utilize in the future to provide customized educational content to students.”¹⁷

Students benefiting from such a revised universal service program would use mobile broadband technology to continue their learning outside of school when teachers are not physically available to them. Such 24/7 connectivity would help students to overcome falling behind in core subjects like English, Math, Science, and Social Studies due to the lack of parental support and technology resources at home.¹⁸ Indeed, students who are absent from school due to illness, hospitalization, or other complicating factors, can remain active participants in school and communicate in real-time with teachers and schoolmates.

In many rural areas of the country, wireless connectivity is the most economical – if not the only feasible – means of providing broadband access. Providing E-rate support for mobile connectivity both on and off of the campus of a school or library will encourage wireless systems providers to expand their coverage in these regions of the country and support universal access to broadband network services in furtherance of the National Broadband Plan.¹⁹ The Plan also recommended that the schools and libraries be given the flexibility to purchase the lowest cost

¹⁶ See n.7, *supra*.

¹⁷ E-rate NPRM at ¶ 48.

¹⁸ FCC NBP at 239, Recommendation 11.23 (“students without off-campus access to online educational services will be increasingly left behind in terms of skills, experience and confidence in their online capabilities”).

¹⁹ See FCC NBP at xiii.

broadband solution,²⁰ and wireless broadband connectivity may in certain cases be such a solution – especially where it supports instruction both on and off of school grounds on a 24/7 basis.

II. The Eligible Services List Should Be Recast As “The Eligible Services & Portable Educational Devices List” And Include Portable Learning Devices And Applications

In order to truly modernize the E-rate program for the 21st century, it needs to be converted into a fully mobile broadband program that provides for the funding of portable learning devices and applications used on and off of the school campus.²¹ In this regard, the Commission should recast the Eligible Services List as the “Eligible Services & Portable Educational Devices List.” As Chairman Genachowski has stated:

E-readers provide extraordinary opportunities for students and teachers. If schools want to support learning on the mobile tools of tomorrow, E-Rate should support them.²²

Failure to authorize such support will limit the utility of and access to the benefits of mobile broadband services for educational purposes for students who do not have access to these benefits in their homes. As the National Broadband Plan recognizes, current E-rate support for wireless data services to mobile devices for educators “should be harmonized with support for student devices during any rulemaking.”²³

²⁰ See FCC NBP at 237, Recommendation 11.17.

²¹ See, e.g., Comments of Clearwire at 5 (“equipment related to the provision of Wireless Internet service, such as personal computer cards, connection cards or similar devices, should be eligible for E-rate support”); Comments of CloudED Mobility at 5;

²² See Prepared Remarks of FCC Chairman Genachowski, National Rural Education Technology Summit (July 21, 2010) at 3, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-300049A1.pdf.

²³ FCC NBP at 244, n.122.

A number of other commenting parties have explained that the Commission must provide support for mobile learning devices in order to truly realize the goal of providing wireless broadband access.²⁴ In point of fact, there is no functional difference between a wired modem, which is eligible for E-rate support, and a portable wireless modem, which may not be, except that the wireless modem can be used wherever the student is physically located. Both types of devices need to be covered by the E-rate program.

The Ohio E-rate Consortium explains:

Adding portable learning devices to the Eligible Services List would not unduly impact other services. Adding these devices would not increase the broadband capacity schools need and thus would not increase the cost of services to the schools. In addition to having no financial impact on the E-rate program, these devices would prove invaluable to students in completing their homework assignments or preparing extra-curricular school projects.²⁵

Students in low-income areas can use these devices to gain access to textbooks, educational publications, and libraries of information at lower costs. There is no better use of E-rate funds than to subsidize e-readers and next-generation digital textbooks for use on the devices. Such support directly contributes to continued learning outside the classroom.

To the extent some commenters are concerned that funding such full broadband connectivity will strain the E-rate system, the \$900 million in recently announced carryover funds from funding years 2002 and 2005 to 2008²⁶ – which represents 40% of the \$2.25 billion

²⁴ See, e.g., Comments of CloudED Mobility at 5; Comments of the Ohio E-Rate Consortium at 15-16.

²⁵ Comments of the Ohio E-Rate Consortium at 16.

²⁶ See FCC Public Notice DA 10-1243, Wireline Competition Bureau Announces Carryover of Unused Schools and Libraries Universal Services Funds For Funding Year 2010, CC Docket No. 02-6 (July 1, 2010). See also Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6, *Order*, DA 09-1734 (July 31, 2009) (carrying forward \$900 million in

annual cap on E-rate funding – can and should be used for this purpose. In fact, authorizing subsidization of the cost of wireless broadband access without subsidizing the school’s acquisition of the portable learning device itself may be hollow gesture in many instances.

In sum, as Chairman Genachowski has recommended, the E-rate program – which focused traditionally on wiring schools and has successfully achieved that goal – should be refocused on mobile broadband services, devices, and applications, since students will benefit greatly with mobile technology, which allows them to learn anywhere and anytime.

III. The FCC’s Proposals To Streamline The E-rate Application Process Should Be Implemented Swiftly

Many commenting parties agree with Qualcomm that the FCC should eliminate the federal requirements that overlap with state or local contracting requirements.²⁷ Specifically, the Commission should eliminate the FCC Form 470 and 28-day waiting period for priority one applications for the vast majority of public schools and libraries that already are required to follow prescribed state and local procurement regulations.²⁸

As the Commission itself noted, “The complexity of the FCC Form 470 and its associated deadlines, category selections, multi-year contract and contract extension requirements, in and of themselves, have led to a multitude of funding request denials by USAC.”²⁹ Moreover, the detailed application requirements themselves may have even deterred applicants from applying

unused funds from the schools and libraries universal service support mechanism to increase E-rate disbursements for funding year 2009).

²⁷ See Comments of Blackboard, Inc. (July 9, 2010) at 20; Comments of Kellogg & Sovereign® Consulting, LLC (July 9, 2010) at 2.

²⁸ See E-rate NPRM at ¶¶ 21-23.

²⁹ *Id.* at ¶ 22

for funds in the first instance.³⁰ Eliminating these rules for priority one services where there is already a state and local procurement regime will reduce the administrative burden on applicants and on USAC, and should provide faster processing of applications pursuant to the Recommendations in the National Broadband Plan.³¹

IV. Indexing The Annual E-Rate Funding Cap To Keep Pace With Inflation Will Allow Schools To Keep Pace With Advances In Technology

The overwhelming majority of commenters agrees with Qualcomm that the annual E-rate funding cap should be increased in accordance with the rate of the inflation so that schools and libraries to continue to benefit from upgraded connections that deliver faster broadband services and demand for greater capacity increases.³² Indeed, the funding cap was set in 1997 and to date has never been adjusted for inflation. Since its inception, E-rate program's annual spending has fallen by about \$650 million in inflation adjusted dollars. Adjusting the cap to match the rate of inflation, as was recommended in the National Broadband Plan,³³ would help to ensure that E-rate support will continue to have a meaningful impact in the future.

³⁰ See FCC NBP at 238, Recommendation 11.19.

³¹ See *id.*; E-rate NPRM at ¶ 27 (noting that the existing FCC rules on competitive bidding would continue to apply to these applicants).

³² See Comments of the Alaska Department Of Education and Early Development (July 9, 2009) at 10; Comments of Blackboard at 18-19 (also proposing that the fund also be increased to make up for the years that the E-rate was not tied to the inflation rate); Comments of Charter Communications, Inc. (July 9, 2010) at 4; Comments of Cisco Systems at 14-15; Comments of CloudED Mobility (July 9, 2010) at 6 (like Blackboard, supports adjusting the 2011 E-rate funding level based upon a retroactive adjustment back to the beginning of the program); Comments of Conterra Ultra Broadband at 7; Comments of eChalk at 4; Comments of Kellogg & Sovereign Consulting at 28; Comments Of Miami-Dade County Public Schools at 8-9; Comments of the Public Broadcasting Service at 6. See also E-rate NPRM at ¶¶ 84-85.

³³ See FCC NBP at 238, Recommendation 11.18.

V. E-Rate Awardees Should Be Allowed To More Easily Dispose Of Outdated Equipment

Finally, many parties support the Commission's proposal to allow E-rate awardees to more easily dispose of obsolete equipment for payment or other consideration, so that schools and libraries can integrate more quickly into their educational menu of tools the newest communications technologies.³⁴ In this way, disadvantaged schools will be able to more quickly integrate the latest and greatest wireless broadband teaching tools.

Qualcomm and others such as eChalk encourage the FCC to allow awardees to dispose of surplus wireless equipment that has exhausted its useful life within 3 years (rather than the proposed 5 year timeframe) because portable learning devices that use wireless broadband connectivity are in a stage of rapid evolution and are effectively obsoleted within just a few years.

³⁴ See Comments of the Alaska Department of Education at 10; Comments of Cisco Systems at 16; Comments of eChalk at 4 (follow standard GAAP principals and claim depreciation of this equipment over 3 years); Comments of Kellogg & Sovereign Consulting at 28; Comments Of Miami-Dade County Public Schools at 9. See also E-rate NPRM at ¶¶ 89-96.

CONCLUSION

Qualcomm respectfully requests that the FCC promptly promulgate rules that implement the proposals set forth above. Revising the E-rate program so that it supports full access to mobile broadband connectivity, which encompasses both wireless services and portable learning devices both on and off the school campus, will help American teachers and students and the Commission to realize core goals of the National Broadband Plan.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "D. R. Brenner", with a long horizontal flourish extending to the right.

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July 26, 2010