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July 2, 2014

Ms. Marlene Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Modernizing the E-Rate Program (WC No. 13-184) -- Ex parte meeting

Dear Ms. Dortch:

On June 30, 2014, Hewlett-Packard Company (HP) met with Daniel Alvarez, Legal Advisor to Chairman Wheeler; Rebekah Goodheart, Legal Advisor to Commissioner Clyburn; Nicholas Degani, Legal Advisor to Commissioner Pai; Priscilla Delgado Argeris, Legal Advisor to Commissioner Rosenworcel; and Amy Bender, Legal Advisor to Commissioner O’Rielly, to discuss E-rate reform proposals in the above-referenced docket. HP was represented by undersigned counsel and by Greg Herbold, HP Director, US SLED Programs, and Deborah Krabbendam, Esquire of Conrad O’Brien, P.C.

During these meetings, HP representatives made the following points. *First*, HP reiterated its support for the Commission’s E-rate Modernization efforts and, in particular, the Commission’s commitment to fund internal connections. In that context, we stressed the need for stable and adequate funding in the long term for this important refocus of the E-rate program.

Second, HP provided additional information about networking technologies – specifically, unified wired/wireless networks and Software Defined Networking (SDN) – that are available to schools and libraries now and provide significant advances in flexibility, scalability and long-term cost effectiveness. Supporting these technologies through E-rate would further the Commission’s goal of “future proofing” the program.

- Unified wired/wireless networks and SDN reduce the cost of infrastructure and management, increase IT staff flexibility and student/faculty productivity, and reduce the need to replace existing equipment when future needs arise.
 - According to IDC (http://h17007.www1.hp.com/docs/ar/IDC_ROI_WLAN-10-2013.pdf), an independent consulting company, unified wired and wireless

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networking technologies contribute to 83% faster deployments, 55% less downtime, and a 47% reduction in total cost of operation.

- According to Google SDN has provided them the ability to utilize Internet links at near 100% utilization rates (up from 80% maximum utilization rates) and has simplified network implementations while increasing flexibility and driving down cost. Detailed information on the Google SDN environment can be found at the following links.

<http://cseweb.ucsd.edu/~vahdat/papers/b4-sigcomm13.pdf>

<http://www.opennetsummit.org/archives/apr12/hoelzle-tue-openflow.pdf>

Similar cost reductions will be seen by non ISP organization adopting open SDN solutions across the campus, branch and datacenter.

- Therefore, HP urges the Commission to ensure that SDN technology and related equipment can be used by schools and libraries as part of a modernized E-rate program. Specifically, HP urges that the Commission include the following in the Eligible Services List alongside other network components:
 - *"SDN Controller" - a unified control point in an OpenFlow-enabled network, simplifying management, provisioning, and orchestration, which is comprised of controller software and a server on which it runs.*
 - *"SDN Applications" - a software component that runs in collaboration or in conjunction with an SDN controller to perform network functions centrally. This could include firewall, load balancing, filtration, DDOS mitigation and network optimization functions as an example.*

This SDN technology allows schools and libraries to replace racks of purpose-built networking appliances and increase utilization rates while decreasing outages. This allows networks to optimize bandwidth utilization, remove devices that were previously physical (firewall, load balancer, filtration, etc.) and increase network visibility.

Third, HP asked the Commission to clarify the E-rate procurement rules, consistent with HP's previously-filed comments and its June 6, 2014 *ex parte* notice. As the Commission considers providing \$2 billion in new funding for internal connections, applicants need technical expertise to assist them in making informed decisions and choosing cost-effective solutions that meet their individualized needs. HP urges the Commission to clarify in the pending Order the rules to allow service providers to work with E-rate eligible entities to assess their technology needs and provide information on available solutions, as part of a fair and open competitive bidding process. In that context, HP expressed support for Comcast's proposal, set forth in comments filed September 16, 2013, that the Commission allow applicants the option of issuing a Request for Information ("RFI") to solicit preliminary input from service providers before they issue a Form 470 or Request for Proposal. As Comcast stated: "schools will be able to use the information obtained through an RFI to craft a more detailed, effective RFP that is, in turn, likely

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to lead to more competitive bids for the precise services and capabilities the school needs. In other words, encouraging an open process that allows schools and libraries to work with vendors to mold and shape design plans before the formal bidding process begins will help to ensure that the most efficient and cost-effective solutions ultimately are selected.” See Comments filed by Comcast Corp., at 33, WC Docket No. 13-184 (Sept. 16, 2013); see also Letter filed by multiple stakeholders, <http://apps.fcc.gov/ecfs/document/view?id=7521310720> (June 12, 2014) (urging Commission to “[m]odify the procurement rules to allow vendors to provide technical advice on network design to applicants”).

Please direct any questions to the undersigned.

Sincerely,


Gerard J. Waldron
Counsel to Hewlett-Packard

cc: Mr. Daniel Alvarez
Ms. Rebekah Goodheart
Mr. Nicholas Degani
Ms. Priscilla Delgado Argeris
Ms. Amy Bender
Mr. Nick Alexander
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