

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

In the Matter of	)	
	)	
Implementation of Sections 716 and 717 of the	)	CG Docket No. 10-213
Communications Act of 1934, as Enacted by the	)	
Twenty-First Century Communications and	)	
Video Accessibility Act of 2010	)	
	)	

**COMMENTS OF CISCO SYSTEMS, INC.**

Cisco Systems, Inc. (“Cisco”) hereby submits comments in response to the April 5, 2018 Public Notice seeking comment on the accessibility of communications technologies to inform the preparation of the Commission’s upcoming report to Congress regarding industry’s compliance with the communications accessibility obligations of the Twenty-First Century Communications and Video Accessibility Act of 2010 (“CVAA”).<sup>1</sup> In particular, Cisco offers its experience developing built-in text-to-speech for its Series 8800 desk phone with critical input from the American Council of the Blind (“ACB”) as an example of how companies can (and perhaps should) work collaboratively with groups representing the very people who would use the accessibility features.<sup>2</sup>

**I. INTRODUCTION AND BACKGROUND**

Last month, Cisco proudly announced a software update to its 8800 Series Voice over Internet Protocol (“VoIP”) phones that includes built-in text-to-speech, the latest example of the

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<sup>1</sup> *Consumer and Governmental Affairs Bureau Seeks Comment on the Accessibility of Communications Technologies for the 2018 Biennial Report Required by the Twenty-First Century Communications and Video Accessibility Act*, Public Notice, DA 18-340, (rel. Apr. 5, 2018) (“*Public Notice*”).

<sup>2</sup> *See id.* ¶ 4 (noting that the Commission must submit a report to Congress every two years discussing, among other things, the “level of compliance with the CVAA’s communications accessibility obligations”).

company's approach to accessibility. Cisco is well respected for its unparalleled expertise in communications and networking technologies. By creating innovative solutions through combining the power of software, hardware, and the network, Cisco makes collaboration among users more effective, comprehensive, and less complex – including among users with disabilities. For example, the Series 8800 desk phone is now the first enterprise-grade desk phone that includes built-in text-to-speech functionality capable of “conveying vital information on the display through audible voice and tone indicators.”<sup>3</sup> This innovation marks a step forward in the accessibility of non-mobile, VoIP phones for individuals with vision disabilities.<sup>4</sup> Specifically, the phone will announce digits when a user dials a telephone number, read aloud information when users navigate settings, announce the caller ID for an incoming call, as well as provide voice announcements for other features.<sup>5</sup> Third-party solutions were previously available, but not necessarily easy-to-use, reliable, or self-contained on the device.<sup>6</sup>

New Series 8800 phones come with text-to-speech built into the phone software that is backward compatible, so that enterprises can upgrade their phones to include the new functionality through a simple software update without purchasing new equipment.<sup>7</sup>

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<sup>3</sup> Angie Mistretta, *Cisco Collaborates on Phones with American Council of the Blind*, Cisco Blog Collaboration (Mar. 19, 2018), <https://blogs.cisco.com/collaboration/ip-phones-accessible-to-the-blind?utm> (“*Cisco Collaborates on Phones*”).

<sup>4</sup> See *Public Notice* ¶ 5 (seeking comment on “the state of accessibility of services and equipment used with the following: (1) ‘non-mobile’ services, including, but not limited to analog and digital telephone handsets and cordless phones used with landline and interconnected VoIP services....”).

<sup>5</sup> Amanda Davis, *Assistive Tech for the Blind Takes Center Stage at CSUN 2018*, The Institute – IEEE Blog (Mar. 30, 2018), <http://theinstitute.ieee.org/ieee-roundup/blogs/blog/assistive-tech-for-the-blind-takes-center-stage-at-csun-2018> (“*Assistive Tech*”).

<sup>6</sup> *Cisco Collaborates on Phones* (noting that third-party solutions were “often difficult to use, required connections to external computers, and were not always reliable”).

<sup>7</sup> *Assistive Tech* (“Companies that already own the phones can deploy the update at any time.”).

IT departments can use the firmware that enables text-to-speech on any Cisco Unified Call Manager System (“CUCM”) that supports the device and, once installed on the CUCM, *every* Series 8800 IP phone on the network will have the new features “without requiring any special configuration.”<sup>8</sup> Accordingly, any individual who is blind or has low vision can “sit down at any workstation with an updated 8800 Series phone and easily enable the accessibility features.”<sup>9</sup>

## **II. MONTHS OF DIALOGUE AND EXPERIMENTATION WITH INDIVIDUALS WITH VISION DISABILITIES LED TO THE FIRST ENTERPRISE-GRADE DESK PHONE THAT INCLUDES BUILT-IN TEXT-TO-SPEECH**

In developing the Series 8800 phone, Cisco and ACB have worked together for months to identify and address the cross-section of “pain points” and most common use cases faced by individuals who are blind or have low vision with respect to enterprise collaboration technology.<sup>10</sup> By incorporating individuals with disabilities in the needs assessment, testing, and field testing stages of feature development, Cisco successfully made one of its products more accessible while building a mutually productive relationship with ACB and laying the foundation for future communications technology advancements.<sup>11</sup> This model holds promise for future

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<sup>8</sup> Cisco, Accessibility at Cisco – Products, *Cisco launches the first enterprise-grade desk phone with built-in text-to-speech functionality*, <https://www.cisco.com/c/en/us/about/accessibility/products.html> (last visited Apr. 25, 2018). Therefore, Cisco’s market-leading position in enterprise voice magnifies the availability of the 8800 Series phone.

<sup>9</sup> *Cisco Collaborates on Phones*.

<sup>10</sup> See *Public Notice* ¶ 9 (seeking comment on how covered entities are “working cooperatively with disability-related organizations in their efforts to incorporate accessibility, usability, and compatibility of equipment and services throughout their processes for product design, development, and fabrication”).

<sup>11</sup> See *id.* (seeking comment on how manufacturers have “included people with disabilities in their market research, product design, testing, pilot demonstrations, and product trials” since the most recent report to Congress); 47 C.F.R. § 6.7 (requiring manufacturers to consider including individuals with disabilities in “product design, testing, pilot demonstrations, and product trials” when developing a product design and development process”).

product development and demonstrates that current FCC rules with respect to product development and people with disabilities are fulfilling the goals of the CVAA.

*Initial Needs Assessment and Outreach.* Nearly a year ago, in July 2017, members of Cisco Product Management and User Experience teams met with members of ACB at the American Foundation for the Blind Center on Vision Loss in Dallas, Texas to observe people with disabilities working, examine their current collaboration/communication tools, and ask detailed questions about the daily challenges they face in trying to do their job. Unemployment is unfortunately high among individuals with vision disabilities, who must overcome the “misconceptions of what a person with vision impairment is capable of doing.”<sup>12</sup> Increasing telework and virtual office environments underscore the need for “reliable telecommunications solutions free of access barriers” for blind and visually impaired employees.<sup>13</sup> The July meeting also focused on what solutions would provide the most value to users who have vision disabilities. As a result of that meeting, and through further collaboration with ACB, Cisco determined that enabling voice and aural feedback, to provide an audible indication of what is being displayed on the screen for standard use cases for an enterprise endpoint user, would meet this goal.

*Ongoing Dialogue and Product Trials.* Company engineers then worked with ACB and other individuals who are blind or have low vision throughout the Series 8800 development

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<sup>12</sup> Anthony Stephens, *Breaking Barriers for Those Who Are Blind and Visually Impaired*, Cisco Blog Collaboration (Apr. 11, 2018) (posted by Negisa Taymourian), <https://blogs.cisco.com/collaboration/breaking-barriers-for-blind-and-visually-impaired> (“*Breaking Barriers for Those Who Are Blind and Visually Impaired*”); see also *id.* (relaying conversations with “some of the smartest Ph.D.s and lawyers in the country, and with marketing directors and human capital managers” of “shared anxiety when telling the person on the other end of the phone to please hold as they yell out for sighted assistance just to forward a call to a co-worker”).

<sup>13</sup> Eric Bridges, Executive Director of ACB (quoted in *Cisco Collaborates on Phones*).

process to demonstrate prototypes, conduct engineering field trials, and otherwise ensure the engineers managing this project had regular interactions with individuals who would be using the product.<sup>14</sup> After an initial demonstration with ACB in October 2017, Cisco conducted engineering field trials starting in January 2018 at the Perkins School for the Blind and National Industries for the Blind to test the initial accessibility solution with “real” end users.

*Adaption to Feedback and Release.* In response to the testing feedback, Cisco changed, prior to release to the general public, the behavior of caller ID on the Series 8800 phone and the tone associated with invalid feature key presses. The Series 8800 phone’s capabilities were then demonstrated in March 2018 at “CSUN,” the country’s largest assistive technology conference, attended by hundreds of technology vendors and representatives from disability-related organizations.<sup>15</sup> Employees working on the project described the experience as “amazing”<sup>16</sup> and an example of why they are proud to work at the company. Cisco and ACB continue to “work together to expand accessible solutions, which will help eliminate misconceptions of the capabilities of people who are blind and visually impaired,” and “assure that critical business telecommunications solutions remain accessible.”<sup>17</sup>

### **III. CONCLUSION**

The productive collaboration that led to the Series 8800 built-in text-to-speech software shines as an example of how a technology company and a disability-related organization can work together to make products more accessible. Cisco looks forward to continuing its

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<sup>14</sup> See *Public Notice* ¶ 9 (seeking comment on whether “covered entities [are] making reasonable efforts to validate unproven access solutions through testing with people with disabilities or with organizations that have expertise with people with disabilities”).

<sup>15</sup> See *Assistive Tech.*

<sup>16</sup> *Cisco Collaborates on Phones.*

<sup>17</sup> *Breaking Barriers for Those Who Are Blind and Visually Impaired.*

collaborations with ACB and other disability-related organizations as it makes its products and services ever more accessible.

Respectfully submitted,

CISCO SYSTEMS, INC.

By: /s/ Mary L. Brown  
Mary L. Brown  
Senior Director Spectrum Policy and Technology

601 Pennsylvania Ave NW  
9th Floor North  
Washington DC 20004  
(202) 354-2923  
marybrow@cisco.com

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