IT accessibility

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for individuals with disabilities**

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BY RUTRELL YASIN

An amendment to the 1973 Rehabilitation Act known as Section 508, combined with various mandates issued in the years since, requires federal agencies to make technology accessible for federal employees with disabilities, and disabled members of the public. Using various kinds of technologies and design standards, such as high-contrast text, screen readers and keyboard equivalents for mouse actions, developers can ease the way for people with vision, hearing and motor-skill impairments.

Today, 16 years after the last major Section 508 amendment, efforts to ensure access have yielded mixed results.

The challenge? Advances in technology march on, requiring agencies to scramble to keep up, without a granular approach.

Consider compliance statistics: In September 2012, the last time the Department of Justice delivered a report on Section 508 to the president and Congress, it found that "slightly more than 50 percent of agency components had established a general policy to implement and comply with Section 508." Additionally, while nearly 70 percent of agency components had appointed a Section 508 coordinator, only 35 percent of agency components had established a Section 508 office or program.

A total of 89 federal agencies, including Cabinet-level agencies, independent agencies, and boards, commissions, and committees, participated in the DOJ survey. The 89 federal agencies identified a total of 318 components that provided responses to the survey.

A year later, the Office of Management and Budget moved to bring some heft and structure to the program, laying out 11 goals to help agencies address primary challenges in the areas of understanding and applying standards; defining and measuring program success; and developing the workforce.

When the Section 508 regulations were released in 2000 and incorporated a year later into the Federal Acquisition Regulation, information technology accessibility overall was in its early stages and agencies were left to figure out how to best comply on their own. This created widely disparate approaches and a lack of consistency, observers say.

"Agencies created Section 508 coordinator positions but few put the necessary resources together to create Section 508 programs," said an accessibility expert with the Department of Homeland Security's Office of Accessible Systems and Technology (OAST). "There was little guidance on what it would take to create a successful program or how to work within the federal procurement and IT communities to ensure Section 508 conformance."

Section 508 is broad-based. It covers people who are blind and deaf, those who have lost or lost the use of limbs, who are color blind, have dyslexia, slow reaction times, short-term memory issues, cognitive disabilities and near-sightedness.

Here, we highlight the challenges and the efforts underway to overcome them.

Technology matures, policies updated

The IT accessibility community within the federal government has matured significantly since 2000. For instance, over the past 11 years, the DHS OAST has grown to provide strategic direction, governance, technical support, and training to ensure DHS employees and customers with dis-

abilities have equal access to information and data. OAST is part of both the DHS Office for Civil Rights and Civil Liberties and the Office of the Chief Information Officer.

The office also assisted in development of the Trusted Tester Training Program, which provides a code-inspection based test approach for determining software and website conformance to the Section 508 standards. The program ultimately extended to the creation of the Interagency Trusted Tester Program.

In 2013, a team of DHS and Social Security Administration accessibility experts collaborated on a harmonized process for accessibility testing for software and the Web based on 508 Standards and some of W3C's Web Content Accessibility Guidelines 2.0 that can be applied by agencies across the federal government.

Moreover, the U.S. Access Board's refresh of Section 508 regulations and OMB's update of Circular A-130, which sets forth the framework for all information technology policies and procedures in the federal government, could help to streamline accessibility standards, and harmonize them with European Union requirements, experts say.

Now is the time to ensure that the spotlight is on accessibility as Circular A-130 goes through the review process, said Karen Evans, national director of the U.S. Cyber Challenge, a nationwide talent search and skills development program focused specifically on the cyber workforce.

OMB is revising Circular A-130, which has not been updated since 2000, to provide guidance to support agency missions and operations in a dynamic and increasingly interconnected, information-resources environment that must content with vulnerabilities and other threats that could put information and systems at risk, according to OMB officials.

A circular doesn't get updated often because it has to go through public comment and a lengthy review process. "That is why I'm suggesting [officials] don't forget accessibility" as they focus on issues such as enterprise architecture, privacy, records management, information and cyber security, said Evans, who served as administrator

for E-Government and IT at OMB under President George W. Bush.

The guidance does include a provision that instructs the General Services Adminstration to "Implement accessibility standards under Section 508 of the Rehabilitation Act of 1973, in coordination with the Department of Justice and U.S. Access Board."

A draft of A-130 was released in October 2015 for public comment. OMB officials have incorporated changes to the updated draft version, which is expected to be sent out for its last inter-agency review by the end of March or beginning of April 2016.

Evans notes that the responsibility for ensuring an agency's or department's IT technology and websites are complaint with Section 508 and accessible to employees and the general public rest on the shoulders of agency chief information officers.

"CIOs get caught up in the bright, shiny objects," Evans said, "so when you start doing things with technology you forget about this other population that has to have accessibility to all the services that you are doing." On the flip side, agencies need to implement accessible systems so it can be used by employees with disabilities. Labor Department research shows that people with disabilities have a higher unemployment rate, but they also have a higher retention rate, Evans said.

"Once you hire them they stay longer. So you get a greater return on investment on employees by investing in accessibility," Evans said.

Over the past 20 years, advances in technology have allowed people who are blind to do more services-related professional jobs, such as operating call centers or even testing products for Section 508 compliance, said Doug Goist, a program manager with National Industries for the Blind, a non-profit organization that is the nation's largest employment resource for people who are blind. Through a nationwide network of associated nonprofit agencies, NIB employs more than 5,600 people who are blind.

The Department of Defense is a customer. With the advent of technology, the DoD

has shifted from being a major purchaser of products to buying more services, "which requires more people knowing how to use technology," Goist said.

Section 508 refresh

Meanwhile, review of the Section 508 refresh is underway. The Access Board — a government federation which sets policy and reviews proposed rules regarding access for the disabled —is updating Section 508 Standards and Section 255 Guidelines for Information and Communication Technology to better address accessibility requirements and keep pace with a rapidly-changing technology environment.

Updates to the two documents were released early in 2015 for public comment. The Access Board is now reviewing all of those comments, making revisions to the text of rules and the preambles to the documents. Finally, there is a regulatory assessment, a cost benefits analysis of the rules.

"We are in the process of finishing up that package and then the staff will present it to our advisory board," said Tim Creagan, senior accessibility specialist with the Access Board. If approved the documents will be sent to the OMB for inter-agency review.

The Access Board is made up of 25 members: 12 federal agencies and 13 private citizens, the majority of whom have to be people with disabilities.

Major proposed revisions to Section 508 Standards include:

■ Incorporation of the Web Content Accessibility Guidelines (WCAG) 2.0 and the application of associated success criteria to websites as well as offline electronic documents and software. WCAG 2.0 is technology-neutral and can be applied to any web-based technology, and with a few changes, to non-web documents and software, also. It underpins standards in many countries including Australia, New Zealand, Canada, and Japan. Germany and France as well as those issued by the European Commission;

■ Require real-time text functionality for products providing real-time, two-way voice communication;

■ Specify types of non-public facing electronic content covered; and

■ Further detail the required compatibility of covered technologies, including operating systems, software development toolkits, and software applications with assistive technology.

"One of the things we have to be careful of when we are writing standards is we don't want to be wedded to a particular type of technology and a particular moment in time," Creagan said. "We want the standards to be as open-ended and flexible as they can be." For instance, instead of calling a device a cell phone, call it a two-way communications device with texting and web capabilities. "It is much easier with the convergence of features and platforms to talk about the functions of a device," Creagan said.

"In the next few years, we (DHS OAST) plan on adopting updates to the new Section 508 regulations that are being finalized by the Access Board. Our goal is to improve maturity of the accessibility best practices and to keep pace with new and emerging technology," the DHS accessibility expert said.

The DHS OAST developed a dashboard that measures each DHS component's Section 508 program maturity on a quarterly basis.

"We have seen accessibility program maturity generally increase over time. Through continued outreach with our component's accessibility offices, we have been able to deliver technical support and training options to employees department-wide," according to the accessibility expert.

Social Security Administration

The Social Security Administration has become more customer-focused, providing modern technology solutions to meet those needs. As a result, SSA aims to understand the desired user experience for all users. Persons with disabilities play an important role in contributing to the agency's understanding of user needs, along with the Section 508 standards, according to Robert Baker, Social Security's Section 508

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Program Manager.

"In order to deliver Section 508 compliant technology solutions, we address accessibility needs throughout the development and acquisition process," Baker said. This includes the early concept and planning phase, through solution design and product selection, development, testing, deployment, training, and ongoing enhancements.

"While we train staff on how to remove accessibility barriers in each of these stages, we also use accessibility experts – including persons with disabilities – to provide comprehensive Section 508 compliance reviews through hands-on testing."

SSA personnel also maintain a help desk to help identify and resolve accessibility issues once the technology is deployed. The majority of SSA's internally developed IT solutions fully support the Section 508 standards.

Testing processes

Together, the Social Security Administration and the Department of Homeland Security developed the Harmonized Testing Process for Section 508 to provide all agencies in the federal government a systematic, proven approach to inspecting code for 508 compliance issues. Their guide, "Harmonized Testing Process for Section 508 Compliance: Baseline Tests for Software and Web Accessibility," provides a consistent approach to the evaluation of software and websites for Section 508 compliance.

The Harmonized Testing Process is now a cornerstone of SSA's Section 508 Testing Program. "This new approach is enabling our development teams to have greater confidence in compliance test results, and is dramatically improving our ability to troubleshoot accessibility issues and identify root causes," Baker said.

In addition, the data the agency is collecting now through this process helps SSA create best practices to address common issues, which in turn contributes to increasing the speed of the development processes.

Federal agencies such as the Health and Human Services Department, Internal Rev-

OVERCOMING ACCESSIBILITY CHALLENGES

■ Establishing clear interpretation of the accessibility standards is critical for success. Without such consistency, workforce development has limited effects, the IT industry is unable to "know" their products are accessible for federal customers, and sharing Section 508 conformance information among federal agencies to reduce redundant work is difficult, according to DHS' Office of Accessible Systems and Technology

■ Implementing and integrating accessibility into IT governance, including content governance for public-facing websites, is an ongoing challenge but extremely important.

■ Developing new best practices for mobile devices remains a challenge in that the technology continuously and rapidly changes around us. Daily or weekly software releases require that developers fully understand IT accessibility because there isn't time to wait on separate testers to provide the compliance information.

Source: DHS Office of Accessible Systems and Technology

enue Service or SSA are more public-facing than the DoD, for instance, so someone from the public will let them know when they cannot access a system or website, Goist said.

The government has moved to an agile or modular contracting model where agencies might be purchasing IT systems or services every six months, which requires a different way of thinking about procurements. "So if you have tech vendors giving you assurances that their products are accessible, there is no way to verify that unless you have ongoing hands-on testing," Goist said.

The General Services Administration runs BuyAccessible.gov, which helps federal contract specialists working on bids that involve accessibility technology to include the proper contractual language to hold vendors' accountable, he noted.

NIB offers the Section 508 Assurance Service, which provides conformance and

usability testing, validation, and remediation services for websites, portals and applications; electronic documents; and legacy applications. The team uses automated testing tools, then manual testing is conducted by a team of blind and sighted IT accessibility specialists using assistive technology. NIB offers three levels of support, applicable not only to the federal government, but also to state and local governments, academic institutions and commercial companies.

Cloud and accessibility

As agencies move more applications to a cloud computing model, where software and computing resources are available on-demand via the Internet from a cloud service provider, accessibility specialists must consider any new difficulties that employees with disabilities could encounter.

As a result, the National Institute of Standards and Technology recently released a new draft publication for public comment, "Cloud Computing and Accessibility Considerations," which examines the challenges, barriers and opportunities federal information technology managers face to comply with both the federal government's Section 508 accessibility requirements and the federal Cloud First policy, according to Robert Bohn, NIST's cloud computing technology program manager.

The draft publication provides eight known challenges people with disabilities encounter with new IT technology and barriers that are specific to cloud-computing environments, such as a cloud provider automatically upgrading tis software and the new version is incompatible with products that help accessibility.

The NIST Cloud Accessibility Public Working Group analyzed popular cloud applications, such as email and calendars, to identify potential accessibility barriers and how to prevent them. The group also developed a cloud computing accessibility taxonomy to provide a common language to discuss problems and solutions, and to use during procurement of information systems.

One promising approach the paper points

out is incorporating accessibility application programming interfaces to enable easy integration of voice recognition software and other specialized tools into operating systems.

"I feel that those who consume services should learn to take more of a role in asking cloud providers to offer creative solutions that are compliant with legislation or to explore avenues or opportunities that enable the services to be more inclusive and accessible," Bohn said.

For those who develop cloud services, "accessibility and usability should be considered throughout the design process," Bohn said. "Much as one discusses building security in from the beginning, developers should consider designing accessibility in from the very beginning as well."

There is still much more work to do to fully integrate IT accessibility best practices within IT organizations while keeping pace with the ever increasing rate of change within the IT industry overall, accessibility experts say.

"I see the largest challenge is ensuring that all stakeholders understand their role in providing equal access to electronic information and data, and that individuals, including contractors, have the appropriate skill sets to deliver Section 508 conforming products," said Creagan. ■

SOCIAL SECURITY ADMINISTRATION'S ACCESSIBILITY BEST PRACTICES

■ Inject 508 activities into your existing customer experience, investment management, enterprise life cycle, acquisition, governance, and risk management processes.

■ Build organizational knowledge around understanding how to acquire, design, develop, test, deploy and maintain accessible IT.

■ Require 508 compliance claims to be validated through testing performed by qualified testers.

■ Use the best practices recommended by the CIO Council Accessibility Community of Practice.

Source: Social Security Administration

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