When the groundbreaking Americans with Disabilities Act (ADA) was passed in 1990, the most visible changes were wheelchair ramps, parking spaces and bathroom configurations. Today, 25 years later, there are new challenges to be addressed. At the top of the list: the Internet.

In early 2015, the Department of Justice is expected to release formal regulations that will apply ADA accessibility regulations to any public Internet site. (ADA regulations were already extended to cover the accessibility of digital information from Federal agencies in 1998.) Ensuring digital accessibility to web and mobile apps will become a standard component of quality assurance in development projects.

**Millions of people, billions in spending power**

There are 25.2 million adults in the US today who have problems seeing, and 124 million people worldwide with low vision. According to Diversity Inc., people with disabilities represent about $220 billion in aggregate spending power. If your site or mobile app is not accessible, you are losing out on a large segment of your potential consumer and employee base.

“If users with disabilities cannot efficiently access a website, they’ll vote with their keyboards and go to a site that offers what they are looking for in a way they can easily read and act upon,” says Ray Campbell, Senior Accessibility Analyst for SPR Consulting. Ray is blind and uses a screen reader in one form or another in his everyday life. Passionate about accessibility, Ray helps SPR ensure that client websites and mobile applications are accessible for everyone.

Smart organizations like Amazon.com and Major League Baseball have recognized the purchasing power of this underserved demographic. Amazon has made its entire site accessible and even added voiceover capabilities to its Kindle App. Major League Baseball, which was reluctant at first to add accessibility to its paid Game Day Audio package, has since done so and won awards for its ease of use.

**More than one way to go online**

Digital accessibility means that a website or mobile app is designed so it can be used by anyone, regardless of ability, on whatever device they choose. People access digital information today using mobile devices such as the iPhone and iPad, Android-enabled phones and tablets, smartphones running Windows, in addition to computers. Likewise, people with disabilities access the digital information using many different devices and programs. For example:

- People with visual impairments use screen reading or screen magnification software to help them access the web.
• People who are deaf rely on captioning or written transcripts to access information conveyed in audio format

• People with other disabilities use devices such as “Sip and Puff” switches, head mice and other assistive technology

**The bottom line:** A person visiting a website or using a mobile app to make a purchase should be able to do so easily and efficiently – whether they are using a mouse, a keyboard, voice recognition software or any other assistive technology. In order for that to happen, the information must be conveyed in multiple ways.

**Building in accessibility from the start**

There are two sets of web standards that can be used to guide those designing, testing, and implementing accessible. They are:

• **Section 508 Standards** ([http://www.section508.gov](http://www.section508.gov)) have been developed to improve access to government information

• **Web Content Accessibility Guidelines** ([http://www.w3.org/wai](http://www.w3.org/wai)) developed by the World Wide Web Consortium for all web sites

Additionally both Apple and Android have accessibility guidelines available to developers.


• **Apple Guidelines** [https://developer.apple.com/library/ios/documentation/UserExperience/Conceptual/iPhoneAccessibility/Making_Application_Accessible/Making_Application_Accessible.html](https://developer.apple.com/library/ios/documentation/UserExperience/Conceptual/iPhoneAccessibility/Making_Application_Accessible/Making_Application_Accessible.html)

These standards and guidelines provide detailed information on how web designers, developers and testers should consider accessibility in all phases of the development process.

**Ask the right questions... at the right time**

"When designing a website or attending a design review," says Campbell, "There are some standard questions you need to ask. It’s always best if these questions are asked during the design stage of a project. Like other things in software development, retrofitting a site for accessibility always costs more in time and labor."

**Here are a few key questions to consider during design:**

• What navigation features need to be included so that all users can skip repeated navigation and easily get to various parts of the website?

• Can users easily access all features of the site with a keyboard as well as a mouse?

• Is audio used to convey information, and if so, is it captioned for the hearing disabled?

• Is meaningful alt text provided for all images?

• If a visual CAPTCHA (Completely Automated Public Turing test to tell Computers and Humans Apart) is used, are accessible alternatives such as audio CAPTCHAs provided?

• Are the labels on links and form fields descriptive enough so you don’t have to see them on the screen in order to know what each does?

• Can users enlarge fonts or change colors to make the content easier to see?
• Is key information being conveyed via PDF? If so, are they labeled as PDFs with a link to an application that users can download to read PDFs?

As the website is being developed, a few more questions developers need to ask:

• Is navigation information being displayed in an easy-to-read list format?

• If scripting, forms or applets are used, are they being implemented in such a way so the functions they perform can be done using a keyboard as well as a mouse?

• Are combo boxes being implemented with separate ‘submit’ or ‘go’ buttons?

Developers can download demonstration versions of software such as screen readers and screen magnifiers in order to help them unit test their work to be sure it’s accessible. Web validation tools provide a list of detailed HTML coding issues that could cause accessibility problems. (An example can be found at validator.w3.org.) However, these tools only work on non-secured pages; and there are no tools for evaluating non-HTML documents such as Word or PDFs.

“Nothing substitutes for having testing accessibility experts with disabilities go through a site during development,” says Campbell. “It is much easier, faster and less expensive to do the work upfront in the building and testing stages – rather than trying to look for problem code after the fact.” Accessibility testing experts are either native users of assistive technologies or trained in using various screen readers. They listen to web pages or mobile apps and record non-accessible issues that require resolution.

By incorporating accessibility testing into the website’s or mobile app’s quality assurance strategy, accessibility defects can be discovered and corrected early, along with functionality, compatibility and performance issues.

Effective accessibility testing includes both validation of conformance to standards such as Section 508 or WCAG 2.0, as well as accessing usability based on key usability criteria. A website or mobile app can be in compliance to standards but still may not be easy to use; however a website or mobile app that is not in compliance with standards is never easy to use.

**Awareness is the key**

“Twenty-five years ago, the Americans with Disabilities Act took some getting used to,” notes Campbell, “but eventually people realized that it gave more Americans equal access to services and employment, and the ability to be more self-sufficient.

“Today, the web and mobile apps play an essential role in our daily lives,” he concludes. “I think the same thing will happen here: people will begin to see that digital information needs to be available for everyone. As businesses grow, they will focus on potential customers and make sure that all of them, regardless of ability, can have a meaningful experience when they visit their site or use their mobile app. And the team at SPR Consulting is ready to help smart organizations lead the way to greater web and mobile accessibility.”