

Web Accessibility at General Electric

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When General Electric (GE) discovered that its website was not accessible to persons with disabilities, it knew that it had to do something about it. There was a simple reason for this: it was not in keeping with the company's values. There were significant secondary benefits to reap. GE recognized that the efficient use of accessibility techniques would benefit its bottom line. Roughly 20 percent of potential GE customers are persons with disabilities. Principles of accessible design increase content discovery and device independence. The rapid convergence of devices that can access the Internet is another reason web operators should not assume the current path of communication between input and output as the only way of interaction. Clearly, increasing market share - especially a loyal customer base - makes a difference. Although the business benefits were alluring, GE's move to make the principal functions of its website accessible supported the idea that diversity is essential and that the company should always pursue technological innovations that support its corporate responsibility mission.

While it is important to note that risk of non-compliance was not the company's principal motivating factor in choosing to make its website accessible, GE understood the importance of becoming compliant with web accessibility guidelines. After all, how does one put a price on reducing legal liabilities and risks? It is very much like

an insurance policy: car insurance guarantees that there are no liabilities in the case of an accident.

When one navigates a site, there are almost always pop-ups, plug-ins, and a number of other devices that are activated – anything but a system based around simplicity. GE did have simplicity in its design, and, as a result, a majority of issues on the GE site were not complicated. Missing text equivalents to images made it such that a blind user could not hear much of the content on the homepage. Furthermore, a lack of structure made it such that the screen reader that translates text to speech for the blind would tediously read all the links on every page before allowing the user to skip to the main content – page after page. Forms were also difficult to complete without all the instructions being able to function properly with screen readers. Most frustrating, however, was filling out entire forms and then not being able to submit them without a mouse click. Users of screen readers can only use a keyboard, and persons with low vision were unable to increase the font size and hence could not read the beautiful - but small - print of much of the content. It could have been much worse. We performed an assessment of “priority one” and of “priority two”, as determined by the Worldwide Web Consortium’s (W3C) web accessibility guidelines. We also made sure that we covered Section 508 and the National Federation of the Blind (NFB) Non-Visual Access Program Requirements, a certification GE was interested in obtaining.

By hiring Deque, an outside consultant who specializes in web accessibility, GE demonstrated that it was very serious about achieving accessibility right. GE’s web designers, developers, brand team, and graphic artists were ready and eager to learn about accessibility. Deque

started by understanding the GE website structure – what content was coming from templates, what were the other common elements, and what was to be included in the scope of this initial effort. Upon deciding what was in scope, we performed an automated assessment of the GE corporate website. We then conducted testing with assistive technologies to make sure we not only caught the issues that made the site inaccessible, but that we also addressed usability issues. Next, working closely with the GE team, we prioritized issues that made it impossible for persons with disabilities to use the site and identified parts of the site that constituted essential functionality. We worked hand-in-hand with GE operations and content writers to make sure pages were fixed so as not to collide with website changes being made on the GE side. Changes to common elements such as templates, Cascading Style Sheets, and JavaScript functions were thoroughly tested and deployed first. Programming changes were coordinated with GE developers. Finally, after all changes were made, the entire accessible edition was published to a staging server. Upon completion of a regression test, the GE.com website, fully accessible to persons with disabilities and certified by the NFB for Non-Visual Access, was pushed into production.

What were the challenges encountered during the GE implementation? Firstly, GE is one of the best known brands in the world. It has invested very heavily in this brand, which has clearly been conveyed on its website. In order to make the website accessible, significant changes to the look and feel of the site had to be minimized. Unfortunately, it was not as simple as telling GE to “remove this and add that.” Instead, we had to work with the design team behind the scenes to overcome a

number of challenges and incorporate accessibility into the overall template design. Defining the template early in the design cycle rather than later helped us to ensure that accessibility was built in to every component of the site. Although, as I mentioned earlier, this process significantly changed the look and feel of the site, it helped to propagate the accessibility, which had automatically been built into the template.

Once we had the website up and running, however, we encountered a new set of challenges, the greatest of which was how to maintain a high level of accessibility. The buzz word at this phase in the development was “sustainability.” Sustainability is a very difficult goal to achieve, as it requires a constant monitoring process. Unlike the Y2K era when, on the 31st of December, everyone was standing by impatiently to see what – if anything – would happen, only to discover on January 1 that all the anticipation was for naught, web accessibility is an ongoing process. The GE team wanted an easy method of staying compliant and fixing new issues that arise as their website changes. The greatest lesson that we learned is that accessibility is an ongoing process that requires an easily-deployable method of continuous comprehensive monitoring.

We thus remain engaged in a continuous monitoring program with GE to help the company with a variety of accessibility issues that arise on a regular basis. In doing so, we have found that what is most important is “minimizing the noise”. In other words, we strive to only surface the new and changed pages, as it makes it easier to implement the required changes.

The general process that we take comprises the following steps:

- *Defining the scope*
- *Performing an assessment*
- *Evaluating the extent, intensity, and nature of the problems at hand*
- *Evaluating the alternatives to fix the problems*
- *Implementing the necessary changes*

The above steps are achieved with the help of tools, as well as with consistent guidance from web accessibility experts. Furthermore, each time we repeat this process, we reevaluate its effectiveness. It is crucial that we constantly identify issues and audit against an established benchmark. What this means is that we must have a baseline in place to know what we are measuring against. Moreover, in order to propagate accessibility, one must standardize the use of accessible templates. In essence, the template is a shell that will carry on, allowing the content to naturally fall into place.

The last major phase in making GE's website accessible was treating the multimedia and embedded content, such as PDF and Microsoft Office documents that existed on the site. We decided to begin the accessibility process with the static pages, then the templates, followed by the dynamic content, and lastly the embedded content. The reason why we saved the embedded content for last was because the pages leading to the embedded content were inaccessible. If one cannot get to the documents, there is no point in making them accessible.

Throughout the project we employed constant, rigorous testing using real-world assistive technologies. I cannot emphasize enough the importance of such testing. Although without automation, one simply cannot achieve the comprehensive, consistent, and repetitive kind of

auditing that is necessary, one must also be careful not to neglect the equally valuable tool of experience. We are pleased that, as a result of our work on the GE website, we were able to publish new style and development guidelines for GE, as well as establish a comprehensive accessibility compliance process.

The most common question I get from industry representatives regards the cost of making a large corporate website accessible. Frankly, I think there are a lot of myths about the cost of web accessibility. One must remember that taking an existing website and adding accessibility to the content line is similar to the ratio of buying insurance for a car. In other words, maintaining web accessibility is like purchasing an insurance policy; and it is usually the same cost ratio – not a large amount to add in light of the tremendous benefits that can be reaped as a result.

GE.com is now accessible to an additional 120 million people across the United States and the European Union alone, who would have previously been frustrated and unable to use the website.