(In)Accessibility of Slovenian E-commerce the Year Before the European Accessibility Act

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Abstract

The European Accessibility Act (EAA, Directive (EU) 2019/882) aims to harmonize accessibility requirements, with a significant focus on e-commerce services due to their socio-economic impact. This study manually assessed 26 key EN 301 549 requirements, aligned with WCAG 2.1 success criteria at levels A and AA, to provide more relevant results for future accessibility trend comparisons and to advocate for necessary awareness and education initiatives. We examined 20 major and original, Slovenian e-commerce platforms expected to fall within the EAA's scope. None of the websites were fully accessible; each failed at least 13 out of the 26 selected requirements, with an average of 17.1 criteria unmet per website. Our findings highlight the urgent need for improved accessibility to ensure digital inclusivity in Slovenia and identify specific accessibility and usability issues that must be addressed to achieve compliance and bridge existing digital barriers.

Keywords

Accessibility, E-commerce, European Accessibility Act, WCAG, EN 301 549, Design for all, EN 17161, Accessibility culture

1 Introduction

With the increased digitalization of e-commerce and beyond, it is crucial that digital solutions are inclusive and accessible to everyone, including individuals with permanent, temporary, or situational disabilities. International studies show that 95.9% of the top one million home pages had detected WCAG 2 failures [1].

Recent studies in Europe reveal that 94% of European websites fail to meet accessibility requirements [2]; however, these large-scale studies primarily rely on automated accessibility testing due to its speed, convenience, and low effort.

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Unfortunately, automated accessibility testing is quite limited and cannot cover all success criteria and accessibility requirements [10]. Furthermore, it can never definitively determine conformance [3].

Such tests are unable to address context-based accessibility requirements, which can only be evaluated by a human. As a result, they often fall short in detecting real accessibility issues [4].

Testing the accessibility of websites and native mobile applications using automated tools can therefore only provide a superficial impression of the state of accessibility [5].

The main objective of the European Accessibility Act (EAA) is to harmonize accessibility requirements for a wide range of essential services and products, including e-commerce services, starting from 28 June 2025. The EAA does not specify a particular accessibility standard to be used. Instead, it emphasizes that accessibility should be achieved by systematically removing and preventing barriers, preferably through a universal design or "design for all" approach. [6].

Studies using manual testing for accessibility are sparse due to the significant time investment and specialized knowledge required. Our intention with this study was to manually audit the accessibility of 20 representative Slovenian e-commerce websites, present an overview of our findings, highlight the most significant barriers for people with disabilities, and briefly suggest ways to prevent or address these accessibility issues.

Based on our experience from other audits, we expected to find that all these websites would be inaccessible.

2 Methods

Since the EAA does not define a specific technical standard, we used selected parts of EN 301 549 accessibility requirements to evaluate functional performance statements.

These requirements are mandated by the Web Accessibility Directive (Directive (EU) 2016/2102) [7], which applies to the public sector in the European Union.

Our study focused on a selection of 26 relevant accessibility requirements from section 9 (check table 1) of the EN 301 549 (version 3.2.1) [8] standard during our manual evaluation, supported by different tools (contrast checker, static code

validators (HTML, CSS and ARIA) and developer tools built in browsers).

The selection of websites was based on three criteria:

1. The company has at least 10 employees.
2. The company has an annual turnover of at least 2 million euros.
3. The website is original Slovenian e-commerce, rather than being a translation of content from international companies.

The sampling of webpages was conducted based on the following essential end-user digital journeys:

- Home page and navigation mechanisms.
- Product search, filtering, comparison.
- Add to cart procedure.
- Registration and login mechanisms.
- Contact and customer support functions.

The manual accessibility audits were conducted from April to May of 2024, by four auditors: two senior auditors with multiple years of experience, one auditor with a couple of years of experience, and one junior auditor. The results were coordinated and verified to ensure the highest possible quality and reliability.

To ensure the integrity of our findings and maintain confidentiality, we anonymized the e-commerce platforms under study. This approach allowed us to objectively highlight the barriers identified, aiming to raise awareness and mitigate potential biases.

3 Results

All websites failed to conform to the EN 301 549 and WCAG 2.1 standards at both A and AA levels.

On average, each website had 17.1 accessibility issues out of 26 selected criteria. The two worst-performing websites failed 20 out of 26 criteria, while the best-performing website failed 13 out of 26 criteria.

The specific accessibility requirements that all websites failed include:

- 9.1.2.2 Captions (pre-recorded) – 10 sites of 20 used videos and all the videos were without captions of any kind.
- 9.1.1.1 Non-text content – mainly missing or wrong alternative text on images and functional icons.
- 9.1.3.1 Info and relationships – mainly wrong or missing semantics of HTML code.
- 9.1.4.3 Contrast (minimum) – mainly text contrasts that were below 4.5:1 for normal size texts.
- 9.4.1.3 Status messages – mainly for features like add to cart, filter/search result changes and some form validations.

Table 1: Accessibility failures detected with manual accessibility testing of selected EN 301 549 requirements of 20 e-commerce sites

EN 301 549 Requirement	Failed sites	% of failed sites
9.1.2.2 Captions (pre-recorded)	10/10 *	100%
9.1.1.1 Text alternatives	20/20	100%
9.1.3.1 Info and relationships	20/20	100%
9.1.4.3 Contrast (minimum)	20/20	100%
9.4.1.3 Status messages	20/20	100%
9.2.4.1 Bypass blocks	18/20	90%
9.2.4.4 Link purpose (in Context)	18/20	90%
9.2.4.7 Focus visible	18/20	90%
9.3.3.2 Labels or instructions	17/20	85%
9.1.4.5 Images of text	16/20	80%
9.2.2.2 Pause, stop, hide	16/20	80%
9.2.4.6 Headings and labels	15/20	75%
9.2.4.3 Focus order	15/20	75%
9.3.3.3 Error suggestion	15/20	75%
9.2.1.1 Keyboard	15/20	75%
9.1.4.11 Non-text contrast	15/20	75%
9.1.3.5 Identify input purpose	14/20	70%
9.1.4.1 Use of colour	12/20	60%
9.3.3.1 Error identification	11/20	55%
9.3.1.1 Language of page	9/20	45%
9.1.4.10 Reflow	8/20	40%
9.2.4.2 Page titled	8/20	40%
9.1.4.4 Resize text	5/20	25%
9.2.4.5 Multiple ways	4/20	20%
9.2.1.2 No keyboard trap	2/20	10%
9.1.3.4 Orientation	1/20	5%

* 9.1.2.2 Captions (pre-recorded) was only tested on 10 sites as the other 10 did not have any videos.

The secondary goal of manual accessibility testing was to document specific issues that can be used for further research. We are only briefly reporting them here:

- Use of **CAPTCHA** was often conducted with inaccessible solutions that were totally blocking blind people relying on screen readers.
- Modal implementations, especially **cookie consent** modal windows, were often inaccessible for multiple groups of users, especially blind screen reader users and keyboard only (or assistive technologies based on keyboard). This also has further legal implications for data collection consent management.
- Unstoppable, auto-playable **carousels** loaded with information that is unusable for all people.
- Pages **coded as English with Slovene texts** and components that use English alternative texts for screen readers on pages with Slovene language.
- Inaccessible **mobile ("hamburger") menu** buttons, often totally unusable for keyboard-based assistive technologies, screen readers and voice input.

- **260 tab presses needed to bypass** site navigation and get to the content of the page.
- **Background images** coded as decoration including important information.
- When pages are zoomed in or in landscape mode on mobile devices, the site framework like navigation, footer, and sticky buttons cover almost 90% of the screen, thus making content practically invisible.

Results of manual accessibility testing of the selected EN 301 549 requirements / WCAG success criteria, show that even if all 20 sites were to pass various types of automatic accessibility testing (which they did not), they would not conform to accessibility requirements and would be inaccessible to certain groups of users, especially screen reader users, keyboard-only (and similar assistive technologies) users, users with visual impairments and deaf users or users with hearing impairments.

4 Discussion

The study confirmed our expectation that all websites audited were inaccessible to groups of users, especially people with disabilities. The pervasive neglect of web accessibility in Slovenian e-commerce not only excludes users with disabilities but also represents a missed opportunity for businesses to reach a broader audience.

A year before the new accessibility legislation is enforced, we would like to see better results – less inaccessibility, highlighting the need for increased awareness and education among stakeholders, project managers, web developers and designers, content providers, and everyone else involved in the planning, production, maintenance, and implementation of e-commerce.

Besides people with permanent disabilities, we also need to consider situational and temporary disabilities that are often left out of demographics and statistics. It is important to be aware of the negative implications of inaccessibility on society as well as its negative impact on the business sector.

Automatic accessibility testing alone can never be enough to test for conformance to accessibility standards, but it is nevertheless a useful complementary tool, helping to make manual auditing slightly faster and more efficient. There are numerous automatic accessibility testing tools that also have issues with false positives (reporting accessibility issues falsely) [10] and human interpretation will always be vital for quality of the end results.

We would like to point out that it is obvious that there is ample evidence that accessibility needs to be integrated into organizations from top to bottom, and it is also evident that standards such as Design for All (EN 17161:2019) [9] and EN 301 549 get insufficient attention. We encourage stakeholders and all interested persons to study, implement, and share knowledge to raise awareness, improve accessibility at scale, and with that enable more people to use their services for common benefits.

We are aware of multiple limitations of this study, but would like especially to point out the following:

- We scaled down the scope of testing with the full EN 301 549 set of requirements to expedite testing. Testing a full list of requirements would most likely produce even worse results, but our selection was based on the relevance of requirements for e-commerce.
- Keeping the selected 20 e-commerce websites intentionally undisclosed makes comparison of trends of the same websites impossible, but we still believe that they are a well-chosen and relevant representative sample for high-level inaccessibility situation indication and may be compared with similar websites on a requirement basis.
- Our scope was limited to a set of the most vital parts of the user journey, and testing beyond that would most probably find more failures, but we wanted to focus on the most important parts from an end-user perspective instead of mapping the situation of the technically wider but less realistic scenarios.
- We would like to involve people with different disabilities to support the study with parallel usability testing, using their own ways and assistive technology, but that was not possible due to limited resources.

5 Conclusion

This study's findings highlight the pervasive inaccessibility of Slovenian e-commerce websites, with none of the 20 audited sites fully conforming to EN 301 549 and WCAG 2.1 standards. Each e-commerce website failed an average of 17.1 out of 26 selected criteria, with issues ranging from missing captions and alternative texts to inadequate contrast and problematic navigation mechanisms. These shortcomings exclude users with disabilities and represent missed opportunities for businesses to engage a broader audience.

As the European Accessibility Act's implementation approaches, it is imperative to raise awareness and educate stakeholders, including project managers, web developers, designers, and content providers. Improving accessibility is not only a legal obligation and financial repercussion prevention, but also a moral and business imperative. Automatic testing tools, while useful, cannot replace the nuanced insights gained from manual audits.

Therefore, a combination of both methods, with a focus on manual evaluation, is essential for meaningful progress toward digital inclusivity. When baseline conformance is guaranteed and there are no obvious barriers, we highly recommend the involvement of people with disabilities, to further improve the usability aspects beyond technical guidelines and standards.

Addressing accessibility issues benefits everyone, including those with temporary or situational disabilities, and enhances the overall user experience. The study underscores the need for ongoing efforts to bridge digital barriers and ensure that e-commerce platforms are accessible to all users, thereby fostering an inclusive digital environment in Slovenia.

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