

Web accessibility in Romania's hosting industry: a comparative evaluation of digital inclusion practices

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Abstract

Our study investigates the web accessibility compliance among Romanian web hosting providers, addressing a significant research gap in private sector digital inclusion practices. While the Romanian public institutions' websites have demonstrated poor accessibility, limited attention has been given to commercial platforms that serve all citizens, including those with disabilities. We conducted a systematic evaluation of five major Romanian web hosting companies (Roleaf, Romarg, CyberFolks, Hostico, and Gazduire.net) using the WAVE accessibility assessment tool in March 2025. We examined critical errors, contrast issues, structural elements, and ARIA implementation across all homepages. Results showed substantial accessibility variations: Roleaf demonstrated minimal critical errors (2) but significant contrast issues (44); Romarg showed contradictory compliance with numerous errors (7) but few contrast problems (4); CyberFolks exhibited severe contrast failures (91) and excessive alerts (134); Hostico presented complex structural issues and minimal ARIA usage; while Gazduire displayed the most problematic profile with 8 critical errors and potentially counterproductive ARIA implementation (201 instances). As the internet develops, the need for more accessible and inclusive designs in Romania's commercial web ecosystem is becoming mandatory to remain in line with European accessibility standards.

Keywords: web accessibility, WCAG compliance, Romanian websites, digital inclusion, automated testing, web hosting platforms

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1. Introduction

Our paper examines web accessibility implementation among Romanian web hosting providers, an understudied segment of Romania's digital landscape. While previous research documented poor accessibility in Romania's public sector

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websites (Pribeanu et al., 2019; Androniceanu & Ciocan, 2015), private commercial platforms remain largely unexamined despite serving all citizens, including those with disabilities. Our study evaluates five major Romanian web hosting companies—Roleaf, Romarg, CyberFolks, Hostico, and Gazduire—against established Web Content Accessibility Guidelines (WCAG) using WebAIM's WAVE evaluation tool. The analysis reveals significant variations in accessibility compliance, from Roleaf's relatively minor issues to Gazduire.net's extensive barriers. We identify critical errors, contrast problems, structural inconsistencies, and ARIA implementation patterns across all platforms. The paper is organized in five sections: introduction, methodology (describing our WAVE-based evaluation approach), comparative analysis (examining key accessibility metrics across all five providers), discussion (contextualizing findings within European and Romanian digital inclusion efforts), and conclusion (offering practical recommendations for Romania's commercial web sector). This research contributes actionable insights toward addressing Romania's persistent digital accessibility challenges.

2. Hypothesis

Web accessibility in Romania has historically lagged behind desired standards, according to several studies. As mentioned, despite the governmental push for accessible public-sector websites by 2020, evaluations of Romanian websites have revealed low compliance levels. Pribeanu et al. (2019) conducted a large-scale assessment of 186 municipal websites and found that only one website met the WCAG 2.0 Level AA. The overall picture was that most local government sites contained numerous accessibility errors, with no significant improvement over an earlier 2010 baseline review. Similarly, an investigation into social services websites by Androniceanu & Ciocan (2015) reported “relatively low accessibility” across the board, with large variations between sites. In the education sector, a study of Romanian university websites noted prevalent issues affecting visually impaired users, such as lack of alternative text for images and missing form labels, resulting in generally poor conformance with WCAG criteria (Cojocaru & Guran, 2013, as cited in Pribeanu 2018). Overall, web accessibility in Romania remains low – a review of e-government sites ranked Romania 24th out of 27 EU countries in terms of accessibility, placing it near the bottom of the league. These findings point to a need for greater awareness and enforcement of accessibility guidelines in both public and private sectors. Globally, the scenario is similar, with many countries facing challenges in implementing web accessibility. As noted earlier, automated scans by WebAIM show that the majority of websites have multiple WCAG failures.

However, there are signs of gradual progress. The EU's European Accessibility Act (2019) and the Web Accessibility Directive (2016) are driving

improvements by requiring not just public institutions but also private companies (in certain industries) to make their digital products accessible. In the US, regulations like the ADA and Section 508 standards have led many organizations to adopt WCAG guidelines. International efforts by the W3C and groups like Web Accessibility Initiative (WAI) continue to provide resources and training to improve compliance. Despite these developments, specific sectors and locales may still significantly trail behind. In Romania, beyond the public sector, private websites (such as those of businesses and service providers) are not yet legally required to comply with WCAG, and their accessibility levels can vary widely. Little research to date has focused on the accessibility of Romanian commercial websites or platforms. This study helps fill that gap by examining a sample of important private-sector websites (web hosting providers) against established accessibility standards. By comparing five competitors in the same industry, we can also highlight differences in how – or if – each has implemented accessibility features. Such comparisons can reveal best practices as well as common shortcomings. In the following sections, we present the evaluation results for Roleaf, Romarg, CyberFolks, Hostico, and Gazduire, analyze their degree of WCAG compliance using the WAVE tool findings and manual verification, and discuss the differences observed in their accessibility implementations. The aim is to contribute actionable insights into improving web accessibility within Romania's digital marketplace, aligning it with the broader goal of web inclusion for all users.

2. Methodology

In this study, we used a standardised accessibility evaluation tool called WAVE (Web Accessibility Evaluation Tool) by WebAIM to systematically assess each platform. WAVE identifies accessibility issues through automated testing, categorizing findings as errors (critical accessibility barriers), contrast errors (insufficient text-to-background contrast ratios), alerts (potential accessibility issues), features (positive accessibility elements), structural elements, and ARIA implementation.

Data collection occurred during March 2025, examining only the homepage of each site, which provides a representative but not exhaustive assessment. This comparative approach allows for identification of common patterns and unique challenges across similar service providers.

3. Comparative Analysis

We used WAVE to identify accessibility issues through automated testing, categorizing findings as errors (critical accessibility barriers), contrast errors (insufficient text-to-background contrast ratios), alerts (potential accessibility

issues), features (positive accessibility elements), structural elements, and ARIA implementation.

3.1. Critical Errors

The evaluation revealed considerable variation in fundamental accessibility errors:

Table no.1 Critical Errors

Platform	Errors	Key Issues
roleaf.ro	2	Missing form label (1), Empty table header (1)
romarg.ro	7	Linked images without alt text (2), Missing form label (1), Empty links (4)
cyberfolks.ro	5	Linked images without alt text (2), Missing form label (1), Empty links (2)
hostico.ro	5	Empty buttons (5)
gazduire.net	8	Linked images without alt text (2), Missing form label (1), Empty button (1), Empty links (4)

Source: *Author's own research*

Gazduire.net demonstrated the highest number of critical errors (8), presenting multiple accessibility barriers. Conversely, roleaf.ro exhibited the fewest critical errors (2), though this alone does not indicate overall superior accessibility.

3.2. Contrast issues

Contrast errors—reflecting insufficient differentiation between text and background—varied dramatically:

Table no.2 Contrast Errors

Platform	Contrast Errors
cyberfolks.ro	91
gazduire.net	63
roleaf.ro	44
hostico.ro	40
romarg.ro	4

Source: *Author's own research*

This difference is particularly noteworthy; romarg.ro's minimal contrast issues (4) compared to cyberfolks.ro's substantial problems (91) shows fundamentally different approaches to visual design by these companies. These

contrast issues particularly impact users with visual impairments, including color blindness and low vision, as well as those viewing sites under challenging lighting conditions.

3.3 Structural Elements and Semantic Markup

The platforms demonstrated varying degrees of structural complexity and semantic correctness:

Table no.3 Structural elements

Platform	Structural Elements	Heading Hierarchy Issues
hostico.ro	108	Skipped level (1)
gazduire.net	59	Multiple H1s (6), Skipped levels (4)
cyberfolks.ro	57	None identified
romarg.ro	42	Skipped levels (3)
roleaf.ro	38	None identified

Source: *Author's own research*

Hostico.ro presented the most structurally complex page with 108 elements, including 76 headings across multiple levels. Gazduire.net exhibited serious structural anomalies with six H1 headings (violating the principle of a single H1 per page) and four instances of skipped heading levels, disrupting the logical hierarchical navigation critical for screen reader users.

3.4. ARIA Implementation

ARIA (Accessible Rich Internet Applications) attributes, which enhance accessibility for dynamic content, showed remarkable variation in implementation:

Table no.4 ARIA Implementation

Platform	ARIA Instances	Notable Patterns
gazduire.net	201	97 ARIA hidden attributes
cyberfolks.ro	39	Diverse ARIA implementation
romarg.ro	14	Moderate usage
roleaf.ro	4	Minimal implementation
hostico.ro	2	Almost no ARIA usage

Source: *Author's own research*

Gazduire.net's extraordinary number of ARIA attributes (201)—particularly the 97 instances of ARIA-hidden—suggests potential misuse or overimplementation. This contrasts sharply with hostico.ro's minimal ARIA usage (2), raising questions about whether complex dynamic functionality is being made adequately accessible.

3.5. Alerts and Potential Issues

Alerts, representing potential but not definitive accessibility barriers, also showed significant variation:

Table no.5 Alerts and Potential Issues

Platform	Alerts	Primary Issues
cyberfolks.ro	134	Redundant links (27), Very small text (56), Redundant title text (44)
hostico.ro	113	Redundant alt text (45), Very small text (20), Redundant title text (38)
gazduire.net	15	Skipped heading levels (4), Very small text (6)
roleaf.ro	10	Suspicious alt text (10)
romarg.ro	6	Mixed issues

Source: *Author's own research*

The high number of alerts for cyberfolks.ro (134) and hostico.ro (113) indicates potential information redundancy and navigation inefficiencies for assistive technology users.

3.6. Individual Platform Assessments

Roleaf.ro

Roleaf.ro presents a relatively straightforward accessibility profile with few critical errors (2), though its 44 contrast errors remain concerning. The site maintains proper heading hierarchy and semantic structure but features minimal ARIA implementation (4 instances), potentially limiting the accessibility of dynamic elements. The primary deficiencies are in contrast ratios and form labeling, which could be remediated with modest effort.

Romarg.ro

Romarg.ro exhibits a contradictory accessibility profile—having the most critical errors (7) among the examined platforms, yet the fewest contrast issues (4). The site's structural inconsistencies include skipped heading levels that disrupt logical navigation flow. While ARIA implementation (14 instances) suggests some attention to dynamic content accessibility, the empty links and missing alternative text represent fundamental accessibility failures that violate WCAG Success Criterion 2.4.4 (Link Purpose) and 1.1.1 (Non-text Content).

Cyberfolks.ro

Cyberfolks.ro demonstrates the most severe contrast issues (91 errors) among all platforms examined, creating significant barriers for users with visual

impairments. Despite maintaining proper heading hierarchy, the site generates the highest number of alerts (134), including 56 instances of very small text. The moderate ARIA implementation (39 instances) suggests attention to dynamic content, yet the volume of contrast and potential issues indicates substantial accessibility shortcomings.

Hostico.ro

Hostico.ro features the most complex structural implementation (108 elements) with an unusually high concentration of heading elements (76 total), including 48 H5 headings. The site's 5 empty buttons represent critical accessibility failures, violating WCAG Success Criterion 4.1.2 (Name, Role, Value). The minimal ARIA implementation (2 instances) combined with complex structure suggests potential accessibility gaps for dynamic content. The 113 alerts further indicate numerous potential issues requiring review.

Gazduire.net

Gazduire.net presents the most problematic accessibility profile with the highest number of critical errors (8) and second-highest contrast errors (63). The site exhibits serious structural anomalies with multiple H1 headings (6) and skipped heading levels (4). Most concerning is the extraordinary ARIA implementation (201 instances), including 97 ARIA-hidden attributes, suggesting potential misuse that could actually worsen accessibility rather than improve it. This platform would require substantial remediation to approach WCAG compliance.

4. Discussion

What does it mean to truly build an accessible website? The findings show a complex picture of Romania's online landscape, one where accessibility seems more like an afterthought than a foundation. The huge variations we discovered between hosting providers reflect broader inconsistencies within the used design rules of the UI. Looking at Gazduire.net's curious implementation: 201 ARIA instances with 97 ARIA-hidden attributes, having such an excessive approach could actually worsen accessibility rather than improve it. It's like building a house with too many doors – eventually, you've just created more barriers. Contrast this with Hostico's mere 2 ARIA instances, and we're seeing opposite ends of the implementation spectrum.

Why such variation? Probably it's the absence of legal requirements, unlike public sector websites bound by EU directives, Romania's commercial platforms operate in a regulatory vacuum regarding accessibility. Without legal pressure, accessibility becomes optional or implemented inconsistently based

on individual developer knowledge, corporate priorities, or sometimes just accidental compliance.

The contrast issues found (particularly CyberFolks' staggering 91 errors) speak to a deeper problem: visual design typically trumps accessibility concerns. When companies prioritize aesthetic trends over readability, they unconsciously exclude users with visual impairments.

"But does accessibility really matter for business websites?" some might ask. The numbers suggest it does. Web accessibility affects approximately 16% of users, a significant market segment any business should be reluctant to exclude. For hosting providers specifically, their accessibility practices likely influence client websites, creating a ripple effect throughout Romania's digital economy.

Our findings align somewhat with Pribeanu's 2019 study of municipal websites, though with an interesting twist. While public sites showed uniformly poor compliance, commercial hosting providers displayed wildly inconsistent implementation – from Roleaf's reasonable effort to Gazduire's problematic approach. This suggests the private sector might actually contain both the worst and best accessibility practices in Romania.

Perhaps most concerning was the prevalence of basic errors like missing form labels and empty links – issues easily addressed with minimal development effort. These represent low-hanging fruit that companies have inexplicably left unpicked. What might drive improvement? Beyond regulation, increased awareness and competitive advantage could motivate change. If even one major hosting provider embraced comprehensive accessibility as a market differentiator, it might shift industry standards. Education plays a role too – many developers simply don't recognize the barriers their design choices create.

5. Conclusion

This comparative analysis of Romanian web hosting providers shows significant accessibility shortcomings across the sector, with inconsistent implementation patterns suggesting the absence of systematic approaches to digital inclusion. The heterogeneity of compliance levels, from Roleaf's minimal critical errors to Gazduire.net's extensive implementation failures, indicates that accessibility remains largely peripheral to commercial web development practices in Romania.

Perhaps most concerning was our discovery of fundamental barriers that require minimal technical effort to address. Simple omissions like unlabeled form elements and empty interactive components represent low-complexity, high-impact improvements that remain unimplemented. Such oversights suggest not merely technical deficiencies but possibly deeper organizational factors: limited awareness, insufficient prioritization, or perhaps misconceptions about the costs and benefits of accessibility implementation.

These findings presented earlier by Pribeanu et al. (2019) and Androniceanu & Ciocan (2015) in the public sector, yet with a crucial distinction—while public websites demonstrated uniformly poor compliance, commercial platforms exhibited highly variable implementation quality. This variance might potentially offer opportunities for industry leadership and differentiation.

From a theoretical perspective, our research contributes to understanding how accessibility standards diffuse within market environments lacking explicit regulatory frameworks. The observed implementation patterns suggest both mimetic and normative institutional pressures may be insufficient drivers for accessibility adoption without complementary coercive mechanisms.

Several practical implications emerge from this analysis. First, Romanian web hosting providers would benefit from establishing systematic accessibility evaluation procedures within their development workflows. Second, basic WCAG education appears necessary throughout the sector. Third, the variability in compliance suggests potential competitive advantages for early comprehensive adopters.

Our methodology carries certain limitations worth acknowledging. Homepage analysis, while representative, cannot capture the full user experience. Automated testing, though efficient, misses certain context-dependent accessibility issues. Future research might productively expand to examine complete user journeys, incorporate manual testing methodologies, or investigate correlations between accessibility implementation and business performance metrics.

As Romania continues its digital transformation, the commercial sector has both opportunity and responsibility to embrace inclusive design principles. The current findings suggest this transformation remains incomplete, with considerable room for improvement. Addressing these gaps in Romania's web hosting industry could not only better serve all users but potentially create leadership in digital inclusion practices within the broader regional context.

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