MICHIGAN STATE UNIVERSITY | Usability/Accessibility Research and Consulting

To: Robert Van Rennes, Big Ten Academic Alliance
From: Graham L. Pierce, MSU Usability/Accessibility Research and Consulting
Subject: Lexis Nexis Uni High-Level Accessibility Evaluation
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MSU Usability/Accessibility Research and Consulting (MSU UARC) conducted a high-level accessibility evaluation of Lexis Nexis Uni to evaluate its conformance with WCAG 2.0 AA Criteria. This evaluation did not include all functionality or content of the site or all WCAG 2.0 AA Criteria.

During this evaluation, a number of issues were found that will make the site difficult to use for many individuals with disabilities.

Keyboard users, including screen reader users and users with dexterity impairments, will have difficulties or be unable to use some content on the site. Most importantly, some content cannot be reached or operated via keyboard and some content changes unexpectedly when focus is advanced or when inputs are activated. Additionally, many interactive elements lack a sufficiently visible focus indicator, making it difficult for many keyboard-only users to effectively use them, as they cannot determine when they have reached the correct element. Focus order is also incorrect in places, further increasing the difficulty of using the site with a keyboard.

Individuals with visual impairments that rely on screen readers will have additional problems. Custom elements do not correctly announce themselves or provide appropriate feedback to screen readers, making them difficult to understand and use. Many form inputs are not appropriately labeled or do not have instructions read out by screen readers, making those inputs difficult or impossible to use for those that rely on screen readers. Some images have missing or incorrect alternative text, further impacting users with visual impairments. Some structural information, including headings, lists, and labels, is also not appropriately conveyed to screen reader users, making it difficult to understand content organization.

Other issues were found that will make it difficult for users with a variety of disabilities to effectively use the system, including insufficient color contrast, incorrect reading order, and insufficiently descriptive page titles.

To improve access for users with disabilities, UARC recommends a full WCAG 2.0 AA evaluation and that the problems discovered be remediated.

Note: For the purposes of this high-level review, search results for "global warming" were used as an example of a Search Results page and "Global warming is mixing up nature's dinner time, study says; Global warming is mixing up nature's dinner time, study says" was used as an example of an Article page.

High-Level Findings

Document Structure

- Headings are not correctly used to organize content. [WCAG 2.0 SC 1.3.1]
  - On the Search Results, Article, and Advanced Search pages, "Nexis Uni" shouldn't be an h1.
  - On the Search Results page, "Results for: global warming" should be the h1, not an h2, and "Actions" shouldn't be part of the heading.
  - On the Advanced Search page, "Advanced Search" should be the h1, not an h2, and "Actions" shouldn't be part of the heading.
  - On the Article page, "Actions" shouldn't be part of the article name heading.
  - On the Home page, headings are not properly nested (heading levels are skipped; h6s are present without prior heading levels being used).
  - On the Home page, "Guided Search" is used as a visual heading, but is not tagged as a programmatic heading.
  - On the Search Results page, "News (10,000+)" is used as a visual heading, but is not tagged as a programmatic heading.
  - On the Advanced Search page, "Use Connectors" and "Frequently Asked Questions" are used as visual headings, but are not tagged as programmatic headings.
- Lists are not correctly used to organize content. [WCAG 2.0 SC 1.3.1]
  - On the Home page, "Discover topics" contents are incorrectly placed into three one-item lists, instead of one three-item list.
  - On the Article page, the "Enter Reading Mode" button is incorrectly placed in a one-item list.
  - On the Advanced Search page, several one-item lists are present.
- On the Home page, "Got it!" box contents are incorrectly read out twice by screen readers. [WCAG 2.0 SC 1.3.2]
- On the Search Results page, calendar dates are not read out correctly by screen readers; only the day of the week (e.g., "Monday") is read out, without the date itself. [WCAG 2.0 SC 2.4.6]

Keyboard Support

- On the Search Results page, sliders (e.g., Group Duplicates and Timeline) cannot be reached via keyboard. [WCAG 2.0 SC 2.1.1]
- Throughout the site, dropdowns (e.g., "Sort by" on Search Results page; "Go to" on Article page) cannot be used with standard keyboard controls (up and down arrow keys). [WCAG 2.0 SC 2.1.1]
- On the Home page, focus does not immediately advance to content in the "All Nexis Uni" section when the content is expanded. [WCAG 2.0 SC 2.4.3]
- On the Search Results page, the Folders and Send to Google Drive lightboxes do not receive keyboard focus immediately when opened. [WCAG 2.0 SC 2.4.3]
- On the Search Results page, result dates (e.g., "April 30, 2018") incorrectly receive keyboard focus. [WCAG 2.0 SC 2.4.3]
- Focus is not sufficiently visible on a variety of content. [WCAG 2.0 SC 2.4.7]
  - "Business", "Criminal Justice", "Political Science" under "Discover topics" on the Home page

- o Buttons and dropdowns at the top of the Search Results and Article pages
- o Search button on the Advanced Search page
- o Buttons (e.g., "Send", "Cancel") in lightboxes (e.g., Print, Download, Send to Google Drive) on the Advanced Search page
- On the Search Results page, advancing keyboard focus through "Narrow By" sections incorrectly expands content automatically. [WCAG 2.0 SC 3.2.1]
- On the Home page, if a checkbox in the All Nexis Uni section is selected, focus is unexpectedly moved to the remove button for that option, instead of allowing the user to continue making selections. [WCAG 2.0 SC 3.2.2]

Navigation

- Page titles for all pages except the Home page are not sufficiently descriptive (they do not mention "Nexis Uni"). [WCAG 2.0 SC 2.4.2]

Forms and Data Submission

- A variety of form labels are not read out by screen readers. [WCAG 2.0 SC 3.3.2]
  - o "Enter terms, sources, companies, or citations" on the Home page and Advanced Search page (only "Enter search term" is read out)
  - o Text input ("Search in all News for") and dropdown ("Choose date range") in the Guided Search section on the Home page
  - o Timeline inputs on the Search Results page
  - o Results checkboxes on the Search Results page (there is no way to determine which result they are related to using only a screen reader)
  - o Input grouping labels (e.g., "Document type", "Font type", "What do you want to save to Google Drive?", etc.) in lightboxes (e.g., Print, Download, Send to Google Drive) on the Article page
- Instructions (e.g., "Enter just keywords to run..." and "Enter a date in mm/dd/yyyy..." on Article page) are not read out by screen readers. [WCAG 2.0 SC 3.3.2]

Images

- Appropriate alternative text is not provided for a variety of visual content. [WCAG 2.0 SC 1.1.1]
  - o Flag icons in "All Nexis Uni" section on the Home page
  - o Calendar icons in the Timeline section on the Search Results page
  - o "?" icon next to "Group Duplicates" on the Search Results page
  - o The open in new window icon next to "Frequently Asked Questions" on the Advanced Search page

Color and Visual Characteristics

- Blue text on dark grey background (e.g., links in "Got it!" lightboxes), red text on dark grey (e.g., hovered/selected links in "Got it!" lightboxes), white text on light blue (e.g., "Got it!"; "Search" on Home page), light green flag icons on white (in All Nexis Uni section of Home page), light blue on white (e.g., "News" on Home page), light grey on white (e.g., "Advanced Search", "Tips", "Enter keywords or subjects", etc. on Home page), white on light colors in photographs (e.g., "Business", "Criminal Justice", "Political Science" under "Discover topics" heading on Home page), red on white (selected category, e.g., "News", on Search Results page), blue text on light

grey (e.g., "Less" on Search Results page; "Home", "Actions", "date formats", "Clear", etc. on Advanced Search page), light grey on white (e.g., "Enter search terms" on Search Results page; "Enter just keywords to run...", "All Nexis Uni" on Advanced Search page), grey text on light grey (e.g., "While these segments...", "Enter a date in mm/dd/yyyy..." on Advanced Search page), and white text on red (e.g., "Search" on Advanced Search page) have insufficient contrast. [WCAG 2.0 SC 1.4.3]

Custom Elements and Dynamic Content

- On the Home page, screen reader users are not notified when the search suggestions lightbox/dropdown appears. [WCAG 2.0 SC 4.1.2]
- On the Home page, no roles or values (i.e., that they expand and whether or not they are expanded or collapsed) are provided for the Menu or All Nexis Uni buttons, and screen reader users are not notified when they are opened and closed. [WCAG 2.0 SC 4.1.2]
- On the Home page, no roles or values (i.e., that they are tabs and whether they are selected) are provided for inactive tabs in the History lightbox or All Nexis Uni section. [WCAG 2.0 SC 4.1.2]
- On the Article page, no roles or values (i.e., that they are tabs and whether they are selected) are provided for inactive tabs in lightboxes (e.g., Print, Download, Send to Google Drive), and screen reader users are not notified when the user switches tabs. [WCAG 2.0 SC 4.1.2]
- On the Search Results page, screen reader users are not notified when document type (e.g., "Cases", "News", etc.) is changed. [WCAG 2.0 SC 4.1.2]
- On the Search Results page, screen reader users are not notified when the calendar is opened in the Timeline section. [WCAG 2.0 SC 4.1.2]
- On the Article page, screen reader users are not notified when Reading Mode is turned on or off or when font size is increased or decreased in Reading Mode. [WCAG 2.0 SC 4.1.2]
- On the Advanced Search page, screen reader users are not notified when content is expanded or collapsed (e.g., "Terms", "About searching...", etc.). [WCAG 2.0 SC 4.1.2]

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