Using Tabs and Accordions in EPA Web Content: A User Experience Failure

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While tabs and accordions were once common across the Web, we no longer recommend their use on EPA pages. Research has demonstrated that the use of tabs and accordions on websites can cause a number of search, access, and usability problems for the end user. As a result, many websites have phased out their use; their persistence makes our pages seem dated and perpetuates the usability issues that they cause.

The myth that users won't scroll has been busted.

The use of tabs and accordions originated to prevent scrolling, since people believed that users would not scroll to the bottom of pages. However, usability research has demonstrated that is no longer true; users will continue scrolling "below the fold" if they are following a logical flow of information.

Nielson Norman research shows that it is "better to show all page content at once when the use case supports it. In such cases, don't worry too much about page length. **Relevance trumps page length**…As long as the content on a page is related, relevant, and formatted properly for the web, people will eagerly scroll the page."

Tabs and accordions force the user to do more work to view content.

According to a Nielson Norman Group article in 2014, forcing people to click on headings one at a time can be frustrating for the user. This is especially true if the user needs to open multiple accordions to answer all of their questions. "Save people the hassle of clicking on links needlessly if their intention is to consume all of the content in the same session."

Wright State University's marketing guidelines apply the same principle to tabs, as "information that the user would want to view in one glance should not be strung across multiple tabs." A user experience expert's article similarly states that limiting the user to only one piece of the content at a time, forcing separate views for each tab, imposes "cognitive load."

Tabs and accordions "break" browser functionality.

When moving between pieces of content parsed out in tabs or accordions, a user might naturally try to use the browser "back" or "forward" buttons. These basic browser functions do not work with content in tabs or accordions, because, technically speaking, the content is on the same page: something that is not obvious to the user. The "back" button will take them to a previously viewed page, rather than a previously viewed tab.

ForeSee usability experts have rated us poorly because of this issue. In the same report, they also pointed out that tabs cause the heading of each section to be moved further and further to the right; straining the user's ability to match it with the displayed content.

Tabs and accordions limit users' ability to interact with the content.

Accordions and tabs intentionally **limit user interactions** with the content to small snippets at a time. They prevent users from printing the full text of a page to paper or PDF. They prevent copying and pasting multiple segments of a page at one time. They limit using CTRL + F for searching a page to just that text that is exposed/open.

The 2014 Nielson Norman article points out that plain text is more accessible for users with disabilities than accordions are. Pages and widgets must be coded with accessibility in mind, which is an added development effort. In contrast, plain text is inherently accessible.

Tabs present the same usability problems as accordions do, since only one can be open at a time. Only being able to have one tab open at a time, like accordions, taxes the user's short term memory if they have to switch back and forth between tabs for the information they need. Jakob Nielson, has said, in an article on bad website design elements, that the use of tabs should be used **only** to switch "between alternative (but related) views [rather] than for navigating to unrelated locations."

Tabs are only appropriate in limited specific circumstances.

Nielson later published an article on how to correctly use tabs, in which he reinforced the same point: that tabs should be used to display a different view of the same information. In his two examples from the Yahoo Finance home page, the tabs are "roughly parallel in nature." Data is presented assuming users would not need to simultaneously see the content from multiple tabs.

Tabs and accordions prevent users from finding the content they need, and make users think our search appliance does not work.

Google and other search results show a snippet of content from each result with the user's search terms rendered in bold (known as "keyword in context"). These snippets help users to decide if the link is one they want to click on. Google does index text hidden by accordions and tabs, but it **does not display that hidden text** in the search results.
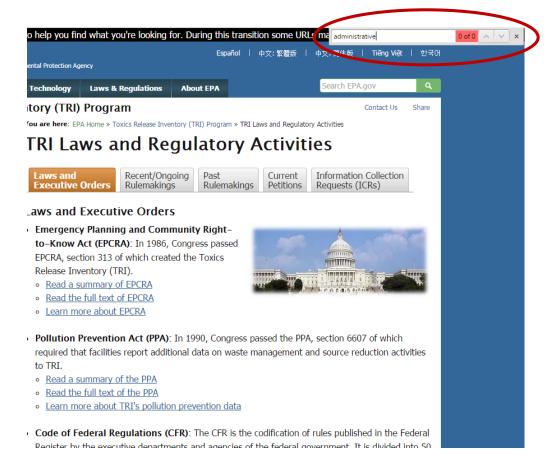
In pages with the query terms hidden by accordions/tabs, Google simply displays the first couple lines of text regardless of the actual query. This makes it less likely a search user will select pages that contain accordions/tabs, as the connection between their query and the page content is frequently unclear.

This example search for specific TRI information shows how the scenario might play out. The user is unlikely to choose the top result because other pages in the results list include both their terms in bold.

If, however, the user does choose the top result, which matches the query best; and navigates to that page, the trouble has just begun. That page will open with the first tab visible, by default, but that first tab **does not contain the content that the user was seeking**. As noted in the aforementioned Wright State guidelines, tabs bury content the user wants to find behind additional clicks. The user may leave the page without visiting other tabs.

Using the same search example from above, we can see what happens when the user clicks on the first search result. Since the user does not immediately see "administrative" on this page, he/she might try using Ctrl+F to search for the term on the page.

to help you find what you're looking for. During this transition some URLs ma

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Laws and Executive Orders

- **Emergency Planning and Community Right-to-Know Act (EPCRA)**: In 1986, Congress passed EPCRA, section 313 of which created the Toxics Release Inventory (TRI).
  - Read a summary of EPCRA
  - Read the full text of EPCRA
  - Learn more about EPCRA

- **Pollution Prevention Act (PPA)**: In 1990, Congress passed the PPA, section 6607 of which required that facilities report additional data on waste management and source reduction activities to TRI.
  - Read a summary of the PPA
  - Read the full text of the PPA
  - Learn more about TRI's pollution prevention data

- **Code of Federal Regulations (CFR)**: The CFR is the codification of rules published in the Federal Register by the executive departments and agencies of the federal government. It is divided into 50

Where is the user's desired content? It was **not visible in the search results**, and is still **not visible on the page** itself. The content can only be found when the user opens the correct tab.

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Petition(s)

Any person may petition EPA to add a chemical to or remove a chemical from the TRI list. Additionally, under the Administrative Procedure Act (APA), federal agencies must give interested persons the right to petition for the issuance, amendment, or repeal of a rule, which allows interested persons to solicit changes to the reporting requirements for TRI. 5 U.S.C. § 553(e).

Current petitions being considered by the TRI Program:

- Petition to Add the Oil & Gas Extraction Industry to the List of Facilities Required to Report Under TRI
  - Federal Register Notice
  - Docket

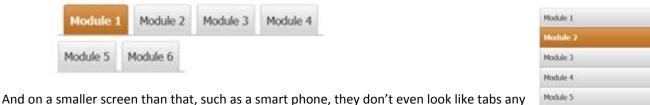Contact Us to ask a question, provide feedback, or report a problem.

This risk actually increases when searching with our own epa.gov search appliance, which does not use the bolded "keyword in context." With our search results, the user is even more likely to have to choose a result that might not have their search term in the title or description (which is all that our search results show), and makes the user **less likely to look for, or find, their tab-hidden content** on that page.

This contributes to user complaints that our search engine "brings back too many non-relevant pages." In examples like this, the content is relevant, but hidden. The user leaves the site believing their information need was not met AND that our search engine performs poorly.

Tabs and accordions function very poorly on mobile devices.

By shrinking the browser window, we can see how tabs look on smaller screens. At roughly tablet screen size, tabs wrap to a second row, which breaks the visual metaphor of the tabs.

And on a smaller screen than that, such as a smart phone, they don't even look like tabs any more.
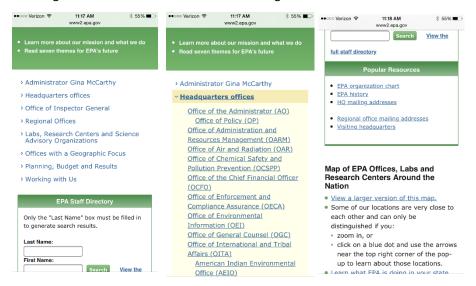
Accordions do not have that kind of visual problem, but on a smaller screen, having one accordion open separates the headings above it from the headings below, splitting them up so the user cannot see all the headings together. The user could easily miss or forget about the headings above or below, and has to scroll back up to close the opened accordion.

Another issue with accordions on smart phones is that after clicking on the first accordion link, then reading/scrolling down to click on the second; it opens such that the user's view is the middle of the second link's text rather than at the top of the second link.

In the example below, the user opens the "Headquarters offices" accordion, then scrolls down to click on the OIG link. The third image shows that the user has to scroll up before even viewing the content they selected. Forcing a lot of scrolling on a device that is not kind to scrolling adds to user frustration.
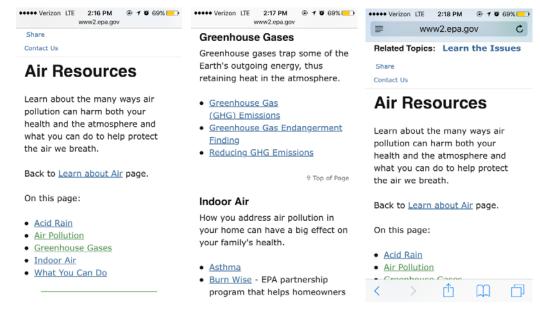

If accordions and tabs are a bad choice, what is a better one?

Instead of using accordions and tabs, providing a table of contents at the top of the page with anchor links to their respective page sections is preferable. The anchor links allow the users to skip over content they may not need, but without hiding any content from the user, or from the search engine. They also allow the user to view and use (search, print, copy/paste) multiple sections at a time. An expert from the User Experience Stack Exchange agrees, saying, "I am inclined to show content in a *stacked* list with anchor links because it provides overview without forcing the user to only see one type of content at any time."

"Top of Page" links are another feature that make this format preferable. As the user reaches the bottom of a section, he or she has the option to either continue reading the next section, or return immediately to the contents menu.

The anchor links format also makes for a better mobile user experience, reducing scrolling and disorientation. In this example, the user chooses Greenhouse Gases from the page menu, then clicks "Top of Page" when she is finished and returns to the table of contents.

Where page length is still a concern, **edit the content**. Consider limiting the scope of the page, and possibly breaking content into discrete pages. Shorten

sentences and paragraphs, and be sure to present information at an eighth grade reading level. Incorporate more headings, subheadings, and bulleted lists to make information easy to scan and digest.

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