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Information architecture on websites of chosen federal American agencies: CIA, DEA, and FBI

SUMMARY The purpose of this article is an attempt to verify the hypothesis that the websites of Central Intelligence Agency (CIA), Drug Enforcement Administration (DEA), and Federal Bureau of Investigation (FBI), as modern communication technologies of federal American agencies are qualitatively good in terms of information architecture (IA) within user interface (UI). The United States is a world power and should be a model for other countries. CIA, DEA, and FBI are powerful, famous institutions, strongly promoted not only by American politics but also pop culture. The high quality of federal American agencies' websites is important to create good image of these institutions, as their activities are secret and websites are one of sparse public communication channels, necessary to stay in contact with users. The IA research (i.e. research of four systems: organizational, labeling, navigation and searching systems) is needed to check if access to information on the websites is easy enough for users and if they were designed taking into account all the principles of functionality. The research methodology includes comparative analysis and qualitative assessment of the IA and own observations. The article is characterized by a special cognitive value as to the knowledge of the author, no scientific publication has been published on this subject yet.

KEYWORDS CIA, DEA, FBI, IA, labeling systems, navigation systems, organizational systems, search systems

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Introduction

Communication technologies of federal American agencies of the United States, so among others websites, should be designed in a high quality, as the ones are sources of social trust. Websites are especially important to reach internet users all over the world. It should be ensured that the access to information is not hindered for these users. On the website of the Library of Congress, there is a long list of Official US Executive Branch Websites (see: LOC, 2021). The author decided to choose three agencies located under two headings from the list. Under the heading “Independent Agencies”, the author chose the Central Intelligence Agency (CIA), and under the “Department of Justice (DOJ)” two agencies: the Drug Enforcement Administration (DEA) and the Federal Bureau of Investigation (FBI). CIA, DEA, and FBI are the three powerful and famous institutions that are strongly promoted not only by American politics but also pop culture. Activity of these agencies, especially CIA and FBI, affects also security in other countries, including Poland. Today, organized crime in drugs is global and reaches i.a. Poland, so therefore, the DEA, by fighting these crimes, indirectly also influences the security of the Polish state.

Central Intelligence Agency (CIA) is “[...] a U.S. government agency that provides objective intelligence on foreign countries and global issues to the president, the National Security Council, and other policymakers to help them make national security decisions” (CIA, 2022a). They also write about themselves that their mission “[...] is straightforward but critical: leverage the power of information to keep our Nation safe” (CIA, 2022a). According to the website, CIA collects foreign intelligence, produces objective analysis, and conducts covert action, as directed by president. CIA was established in 1947.

From the website of the Drug Enforcement Administration (DEA), a user get to know that the mission of DEA is “[...] to enforce the controlled substances laws and regulations of the United States and bring to the criminal and civil justice system of the United States, or any other competent jurisdiction, those organizations and principal members of organizations, involved in the growing, manufacture, or distribution of controlled substances appearing in or destined for illicit traffic in the United States; and to recommend and support non-enforcement programs aimed at reducing the availability of illicit controlled substances on the domestic and international markets” (DEA, 2022a). Since many drugs are psychoactive, stimulant, or have other properties that could cause them

to be misused, the DEA controls them. Therefore, any company that manufactures or distributes these pharmaceuticals, all physicians authorized to supply or prescribe them, and all pharmacies authorized to fill such prescriptions must be registered with the DEA. This institution was established in 1973.

Federal Bureau of Investigation (FBI) is the largest investigative agency of the U.S. federal government, established in 1908 to prosecute crimes threatening the internal and internal security like espionage, counterintelligence, sabotage, and external state security, some economic crimes, but also, among others: trafficking in human beings, racketeering, air piracy, kidnapping people etc. (PWN, 2022). They write about themselves that “The FBI is an intelligence-driven and threat-focused national security organization with both intelligence and law enforcement responsibilities” (FBI, 2022c). Their vision is to “[p]rotect the American people and uphold the Constitution of the United States” (FBI, 2022a). From the website, a user get to know that to their priorities belong: protecting the U.S. from terrorist attack; protecting the U.S. against foreign intelligence, espionage, and cyber operations; combating significant cyber criminal activity; combating public corruption at all levels; protecting civil rights; combating transnational criminal enterprises; combating significant “white-collar crime”; and combating significant violent crime (FBI, 2022a). The aforementioned term “white-collar crime” refers to financially motivated, nonviolent or non directly violent crime committed by individuals, businesses and government professionals (FBI, 2022d).

The high quality of websites of federal American agencies is important to create good image of these institutions, as their activities are secret and websites are one of sparse public communication channels, necessary to stay in contact with users. Research on information architecture serves to improve the quality of online space.

Information architecture

Information architecture (IA) is a field of research in the scientific discipline of communication and media. The term was introduced in 1976 to characterize the skills related to the structure of information messages (Roszkowski, 2004). The American architect and graphic designer Richard Saul Wurman was the first to combine the concept of architecture with the concept of information (see: Wurman, 1997). It is a first term that describes the practice and learning of organizing and labeling hypertext and intranet sites, software, online

communities, and different areas (see: Kosobucka, 2020), just to support the usefulness of information and facilitate access to it (IA Institute, 2020). Wurman treats IA as the design of understanding (see: Wurman, 2017).

The practical task of the IA is to improve access to information in a selected source. The IA includes four systems: organizational, labeling, navigation and search ones. The organizational systems can be understood as the mechanisms responsible for the hierarchization, classification, and categorization of information. The labeling systems concern, i.a., the appearance of the labels, appropriate tab naming and properly selected representative icons. In turn, navigation systems are link structures that allow a user to access information objects or content areas. The purpose of well-designed navigation systems is to guide the user to the information that interests him. The search systems are based on all search options, including, at best, advanced filters, relevant suggestions for search terms, etc. (see: Rosenfeld, Morville & Arango, 2015).

The aforementioned IA systems are as follows:

1. Organizational systems:
 - 1.1. Alphabetical scheme of organizing information,
 - 1.2. Chronological scheme of organizing information,
 - 1.3. Thematic scheme of organizing information,
 - 1.4. Task-based scheme of organizing information,
 - 1.5. Open / closed / hybrid scheme of organizing information,
 - 1.6. An „audience” scheme (designed for concrete kind of users),
 - 1.7. A „metaphor” scheme (referring to potential users’ associations),
 - 1.8. Narrow and deep hierarchical model,
 - 1.9. Wide and shallow hierarchical model,
 - 1.10. Database model,
 - 1.11. Hypertext model.
2. Labeling systems:
 - 2.1. User-understandable text and graphic labels,
 - 2.2. Well-functioning hyperlinks,
 - 2.3. Correct hierarchy of headings.
3. Navigation systems:
 - 3.1. Semantic navigation including built-in and auxiliary navigation,
 - 3.2. Social navigation,
 - 3.3. Global navigation as built-in navigation system,
 - 3.4. Local navigation as built-in navigation system,
 - 3.5. Contextual navigation as built-in navigation system,

- 3.6. Site map as an auxiliary navigation system,
 - 3.7. Tag cloud as an auxiliary navigation system,
 - 3.8. Alphabetic indexes as an auxiliary navigation system,
 - 3.9. Guide as an auxiliary navigation system,
 - 3.10. Search as an auxiliary navigation system,
 - 3.11. Mechanism of export of results and metadata as an auxiliary navigation system,
 - 3.12. Step-by-step navigation as a navigation path mechanism,
 - 3.13. Page navigation as a navigation path mechanism,
 - 3.14. Scrolling as a navigation path mechanism,
 - 3.15. Location paths with highlighted labels,
 - 3.16. Paths containing search filters,
 - 3.17. Attribute paths with direct access to parent categories,
 - 3.18. Tree-like navigation,
 - 3.19. Horizontal menu,
 - 3.20. Vertical menu,
 - 3.21. Dynamic menu,
 - 3.22. Context menu,
 - 3.23. Drop-down menu,
 - 3.24. Visual navigation.
4. Search systems:
 - 4.1. Search engine located on the home page and / or elsewhere on the website,
 - 4.2. Advanced search engine with various methods of filtering and sorting the search results,
 - 4.3. System suggesting search terms in the form of e.g. ready queries before starting the search,
 - 4.4. Transparent form of presentation of search results,
 - 4.5. System that suggests search terms like e.g. „see also” after displaying the default search results,
 - 4.6. System showing results adequate to the search term entered (i.e. a system that understands the given search phrases),
 - 4.7. System that allows user to estimate the number of search results received,
 - 4.8. Well-functioning mobile search engine.

Also, there are some additional elements, not included in separate systems. These are as follows:

- appropriate footer quality, i.e. updated dates, information about the owner, text limited to a minimum;
- actual headings on the website;
- the appropriate amount of text on the website;
- a secured link;
- the ability to adapt cookies to one's preferences;
- possibility to set the contrast, larger letters and alternative graphic descriptions for the visually impaired.

As all these elements are too complex to be briefly described, there is a possibility of checking out the online source with definitions of all elements contained in a separate external document (see: Kosobucka, 2021).

The IA is the subject of numerous studies, including publications of following researchers: Martyn Dade-Robertson (2011), Nathaniel Davis (2010), Peter Van Dijck (2003), Wei Ding, Xii Lin & Michael Zarro (2017), Ewa Głowacka (2016), Amir Hossein Seddighi (2021), Veslava Osińska (2014), Stanisław Skórka (2011, 2021), Barbara Sosińska-Kalata (2013), and others.

Organization and methods of research

The main purpose of the research is an attempt to verify the main hypothesis (H0) that the websites of CIA, DEA, and FBI, as modern communication technologies of federal American agencies, are qualitatively good in terms of IA within UI. Other hypotheses sound as follows:

H1: The websites differ from each other in terms of the IA quality within UI.

H2: Errors or missing elements of important elements in the IA are noticeable in every analyzed website.

H3: The websites are generally easy enough for users and they are designed taking into account all the principles of functionality.

The selected research areas are: the CIA website (see: CIA, 2022b), the DEA website (see: DEA, 2022b), and the FBI website (see: FBI, 2022b). The research methods are qualitative assessment of the IA and comparative analysis of chosen websites. The research was carried out in the period from November 2021 to January 2022 and was updated in the months: July – September 2022. The criteria for qualitative assessment of the IA are presented in the table 1. 22 points are to be awarded in total.

Table 1. Evaluation criteria based on IA systems

IA systems	Criteria and scoring
design of organizational systems	all the organizational schemes (1 point) and all the hierarchical models (1 p.) included on the website; proper organization of information (1 p.)
design of labeling systems	appropriate tab naming (1 p.); proper amount of representative icons (1 p.); correct placement of labels on the website (1 p.)
design of navigation systems	structures allowing a user to access information objects or content areas (1 p.); advanced auxiliary system (1 p.) including especially tag cloud (1 p.); a guide (1 p.) or visual navigation (1 p.)
design of search systems	properly functioning search engines (1 p.); their correct placement (preferably in the upper right corner) (1 p.); advanced search (1 p.); various methods of filtering and sorting results (1 p.); suggesting search terms (1 p.)
additional elements of IA	appropriate footer quality (1 p.); actual headings (1 p.); the proper amount of text (1 p.); a secured link (1 p.); adaptation to the needs of people with disabilities (1 p.); ability to set cookies options (1 p.)

Source: own study.

CIA – qualitative assessment of the IA within the UI on the official website

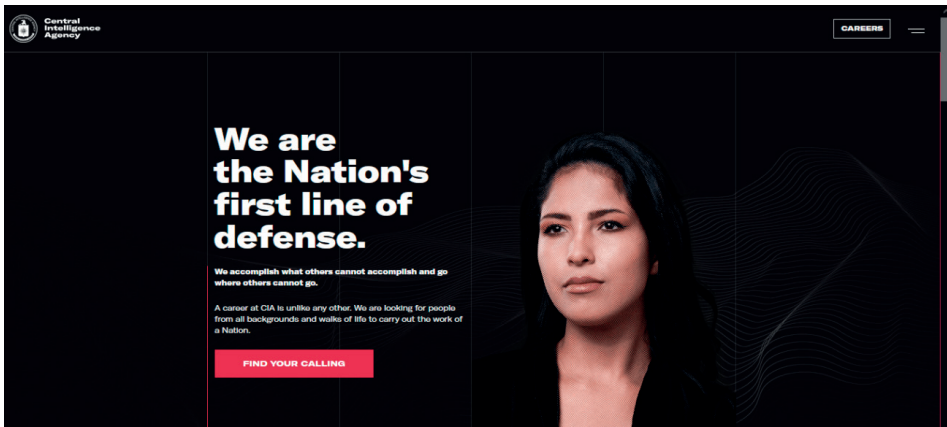


Illustration 1. An excerpt from the top of the CIA homepage

Source: *Central Intelligence Agency – CIA*. Retrieved from: <https://www.cia.gov/>.

The CIA website level refers to the image of the CIA as a “high-ranking” institution; the style of this website refers to the cinematic, even a “Hollywood” character of this institution (see: illustration 1.). Even the facial expressions

of the model in the photo show seriousness, responsibility, striving for truth and high ambitions. Picture of a model changes after refreshing a webpage but all models have similar face expressions. The message is enhanced with a highlighted headline. Admittedly, the illustration 1. shows the site view at 67% of the screen size, because at the default of 100%, the model's face is clipped and not all of the text can be seen (although the header does not disappear) – possibly this is a deliberate maneuver because while scrolling down, immediately to the user's eyes there is displayed the continuation of the page with the "Find your calling" button. Also, scrolling makes the top bar disappearing; until this process, the logo of CIA changes into only three letters (CIA) and the "career" label, as well as menu graphic label, are hiding.

The website design is very minimalist – this contributes to easy access to information from the user's perspective and, incidentally, good perception of the website. The used colors, i.e. black, white and red, as well as matching fonts, testify to the very professional approach of the creators. Below the main banner, there is a short biogram of the Agency with a highlighted button leading to more information; this button highlights even more in a dynamic way (like a fast-loading bar) after the cursor hovers. Similar dynamics is designed within the next button in the next section with information about Legacy. Underneath there are tiles with Stories; three tiles with a picture and a short title surrounded by a simple scheme of box including a "read more" option with an arrow. Also, there is a button with a label "explore all stories". A creative section below this one is called "The World Factbook" which may be visited at another subpage. The site map is divided into three columns ("Agency", "Careers", and "Resources") and it is extensive, and "graphically pleasant"; on the right side there are three letters set vertically, facing the right edge of the screen: "CIA". All hyperlinks are highlighted, and in the footer there are also graphic labels of social media which become dynamic after the cursor hovers. A bottom part of the footer includes labels in a form of broad and shallow hierarchical model: "Search CIA.gov", "Site Policies", "Privacy", "No FEAR Act", "Inspector General", "USA.gov", "Sitemap" (see: illustration 2.).

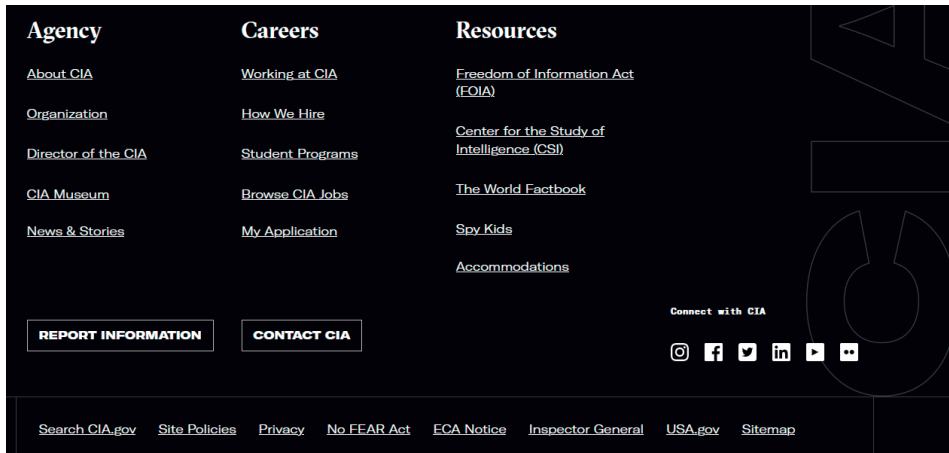


Illustration 2. An excerpt from the CIA homepage – a footer

Source: *Central Intelligence Agency – CIA*. Retrieved from: <https://www.cia.gov/>.

The search systems are very well developed. After going to the link through the “careers” tab, one can see the basic search engine through which a user can search for a profession. The researcher decided to search for the profession “Graphic Designer”. The researcher’s eyes were full of search terms offered by the system. After selecting an interesting term, the search results are being displayed with many advanced search filters, provided with a large font size and consistent with the entire style of the page. Moreover, a rare option is the ability to save the search results for later. There are more search engines, e.g. on the previously mentioned “The World Factbook” subpage under the headline “Explore Countries” (CIA, 2022c). The researcher checked “Poland” as a search term and it turned out that there are possibilities to see photos of Poland and there are also advanced filters of exploring pictures (“All”, “Capital”, “Space”, “Places” and “Landscapes”). There is also information about flag of the country. What is more, it is possible to view country map, locator map, and to download country documents. The extended table of context on this page contains the following tabs: Introduction (about history of Poland), Geography, People and Society, Environment, Economy, Energy, Communication, Transportation, Military and Security, Terrorism, and Transnational Issues. These headings are full of actual data. In addition, the labels of subpages the user are on stay highlighted. From the perspective of the homepage, after expanding the graphic menu icon, the full-page menu is displayed, and its labels are very large and also highlighting in a dynamic form.

The researcher did not notice any changes in the appearance of the website between January 2022 (the first attempt of the research) and September 2022 (updated research). The evaluation of the CIA website is presented in the table 2.

Table 2. Evaluation of the CIA official website

IA systems	Criteria and scoring
design of organizational systems	organizational schemes – 1 p.; hierarchical models – 1 p.; organization of information – 1 p. In total: 3/3 p.
design of labeling systems	appropriate tab naming – 1 p.; representative icons – 1 p.; correct placement of labels on the website – 1 p. In total: 3/3 p.
design of navigation systems	structures allowing a user to access information objects or content areas – 1 p.; advanced auxiliary system – 1 p.; a tag cloud – 0 p.; a guide – 0 p.; visual navigation – 0 p. In total: 2/5 p.
design of search systems	properly functioning search engines – 1 p.; their correct placement – 1 p.; advanced search – 1 p.; various methods of filtering and sorting results – 1 p.; suggesting search terms – 1 p. In total: 5/5 p.
additional elements of IA	appropriate footer quality – 1 p.; actual headings – 1 p.; the proper amount of text – 1 p.; a secured link – 1 p.; adaptation to the needs of people with disabilities – 1 p.; ability to set cookies options – 0 p. In total: 5/6 p.
	In total: 18/22 p.

Source: own study.

The footer is characterized by the lack of a date but some more updates are located in many different sections of the website – that is why 1 point was awarded here. Also, even if there are no additional options for people with disabilities, the website itself is characterized by very large letter size and contrasts so the adaptation is done. In advanced navigation there are missing elements such as social navigation, tree-like navigation or context menu but the huge advantage is the presence of alphabetic indexes on “The World Factbook” subpage. It is a rare but very helpful navigation system, especially if it is assisted by another system like step-by-step navigation (see: illustration 3.).

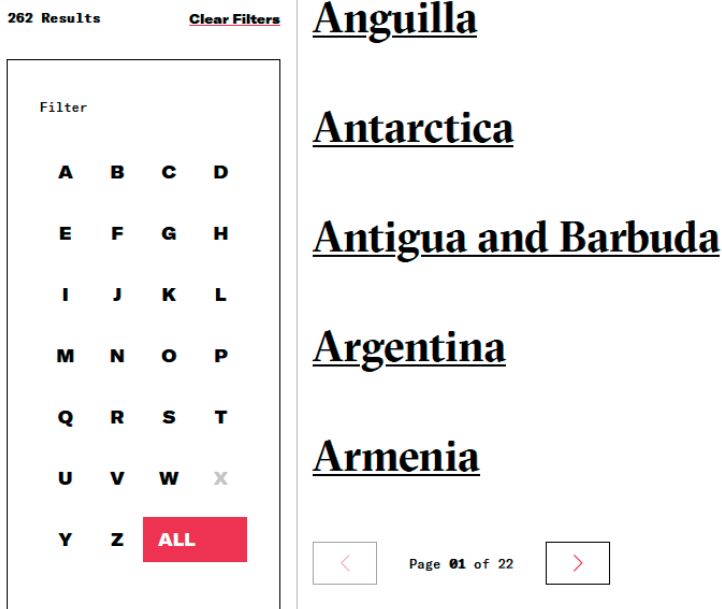


Illustration 3. An excerpt from the CIA website's subpage showing alphabetic indexes and step-by-step navigation

Source: *Countries – The World Factbook*. Retrieved from: <https://www.cia.gov/the-world-factbook/countries>.

DEA – qualitative assessment of the IA within the UI on the official website

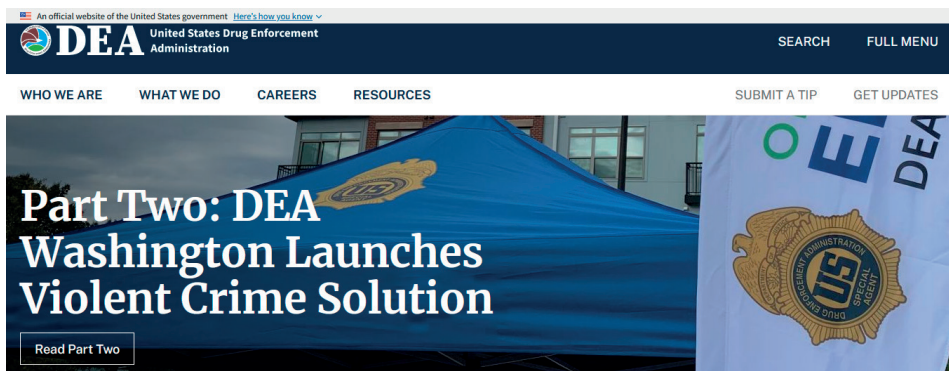


Illustration 4. An excerpt from the top of the DEA homepage – January 2022

Source: *Home | DEA.gov*. Retrieved from: <https://www.dea.gov/>.

The DEA website (see: illustration 4.) is professionally designed, with a minimalist approach to the presentation of information in terms of text (but not as much minimalist as it was in the case of the CIA website) which is still a benefit. However, some areas require optimization. At first glance, one can see that the creators of the website wanted to reach as many people as possible, including the visually impaired, because the font sizes of headings are very large, and the promoted entries display in the form of tiles are located two in a row and one takes up the area of half the screen of the monitor; this is related to the middle part of the site, talking about homepage. The author decided to continue the review of this page from the top bar, composed of two layers, constituting a hierarchical model (a wide and shallow menu). The first layer contains the logo on the left side, and on the right there is a text label of the search engine and the “full menu” label. After clicking on this tab, the hierarchical model, i.e. a narrow and deep dynamic menu slides out with many tabs and there is also global, local and contextual navigation. Above the main content of the top of the website, there is information that sound (sic): “an official website of the United States government Here’s how you know” (from “Here’s...”, the link begins). The top layer of the bar is white, and the font is black (the link is blue). The DEA logo consists of four colors: purple, green, blue, and white. Under the navy blue bar there is a second layer of bar – or just a second bar – in white, with labels: “who we are”, “what we do”, “careers” and “resources” with navy blue font on the left side, and on the right: “submit a tip” and “get updates” with gray font. Below the bars, there is a banner with a photo in the background with a dark glow and a large header with a white font, and under text there is a highlighted button, directing a user to read the entire news. Under the banner there are the aforementioned tiles with huge headings. Underneath there is list of “Most Wanted Fugitives” (also half a screen) and on the right side of a screen, a next tile with a heading “Submit a Tip” is located. Scrolling down the site, there is a blue and white bar with a label: “Report Fraud” as a hyperlink. Below this one, there are two more other tiles under the label of “Resources”. Scrolling more, a user can see a list of “Recent News Releases” and on the right side, there is a shared post of DEA from Twitter which can be embedded further by the user via the same social medium which is also a good option from the perspective of the user’s needs. However, the researcher did not notice more export options, e.g. for search results. The big advantage in the user interface is the “SAMHSA Behavioral Health Treatment Locator” with the basic

search engine at the bottom of the page. Also, another huge advantage from the perspective of the auxiliary navigation system is the extensive site map. In the footer, a hyperlink with the label “Contact the Webmaster” deserves special attention; this leads to a subpage with three forms with headings: “Do you have a suggestion to improve or enhance our site?” – the first one, “Is there a broken link or other issue with a page?” – the second one, and “Other Feedback?” – the third one. This procedure indicates a special emphasis on the quality of the website and the improvement of the IA. Back to the footer, social media icons are one of the few, if not the only, graphic labels on this site. The researcher noticed the correct hierarchy of headings from the perspective of the entire website, as well as updating information on a regular basis. From the perspective of the search system of the IA, the search engine label located on the homepage is a big advantage. Its hyperlink refers to a search engine that opens in a new window.

As it turned out, there were some advanced search filters, but their number is quite moderate. After clicking on a specifically designed command, a large yellow frame is displayed around the search engine, which in fact is not needed. The search engine interface is somewhat “archaic”. After clicking on other links, also located on the main page, the button is sometimes surrounded by a blue frame, which disappears after a while. The researcher decided to test the search engine by entering a search term that would certainly give the search results. She used the sample search term “Xanax” which gave 220 results and indicated step-by-step and page navigation. The results are powered by Search.gov. What is more, there are no location paths, i.e. labels after going to a given subpage are not displayed, but there is a very large header with the name of the subpage; and on hovering over, the label is underlined; there is also no such tab as “recently viewed headlines” which is also a determinant indicating the lack of localization paths. A researcher noticed an error from the perspective of the mobile version of the website. In vertical layout, the search engine cannot be used on a mobile device because the label of search engine is covered with a gray bar at the top of the screen. The situation changes when one sets the view layout to horizontal. However, it should be possible also in the vertical layout.

The researcher noticed three main changes on the website that have been made between January 2022 and September 2022. The updated research shows that a new option has appeared: it is a possibility of change the website language to Spanish (a button: “EN/ES” – see: illustration 5.). Also, under the main banner, a message is displayed: “As part of DEA’s ongoing efforts to educate the public

and encourage parents and caregivers to talk to teens and young adults about the dangers of fake pills and illicit drugs, DEA has also created a new resource, [link] What Every Parent and Caregiver Needs to Know About Fake Pills” (DEA, 2022b). The message is displayed in a gray frame with black text and blue link. Another change is related to the gray bar with information about affiliation of the website to the government of the United States. In January (see: illustration 4.) it looked like there was a blank space under the logo on the top bar, as well as under the options of wide and flat menu on the same bar, and that these logo and options were fully aligned to the top. Such a visual impression was made by the previously mentioned narrow gray bar that was overlapping the main bar. Nowadays, it is correctly aligned but in turn, the banner under the white bar is aligned too low because of an (probably) unnecessary *div* (see: illustration 5.) which caused a real blank space.

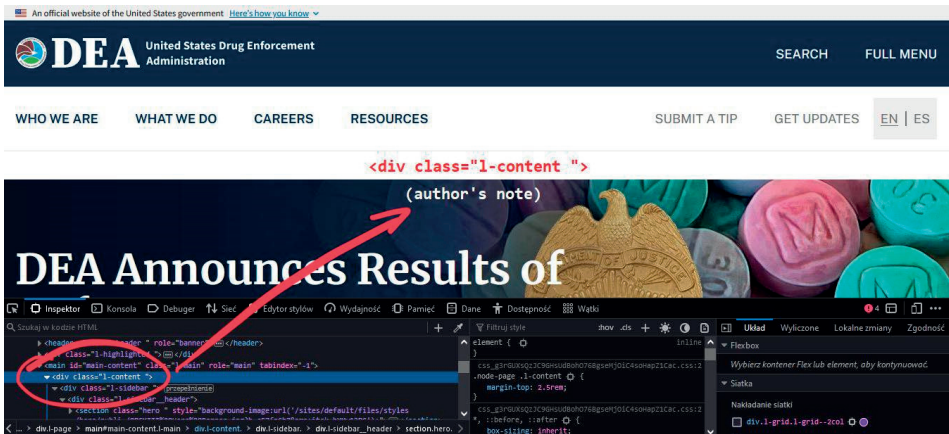


Illustration 5. An excerpt from the top of the updated DEA homepage and a fragment of the source code

Source: *Home | DEA.gov*. Retrieved from: <https://www.dea.gov/>.

The evaluation of the DEA website is presented in the table 3.

Table 3. Evaluation of the DEA official website

IA systems	Criteria and scoring
design of organizational systems	organization schemes – 0.5 p.; hierarchical models – 1 p.; organization of information – 1 p. In total: 2.5/3 p.
design of labeling systems	appropriate tab naming – 1 p.; representative icons – 0.5 p.; correct placement of labels on the website – 1 p. In total: 2.5/3 p.
design of navigation systems	structures allowing a user to access information objects or content areas – 1 p.; advanced auxiliary system – 0 p.; tag cloud – 0 p.; a guide – 0 p.; visual navigation – 0 p. In total: 1/5 p.
design of search systems	properly functioning search engines – 1 p.; their correct placement – 1 p.; advanced search – 1 p.; various methods of filtering and sorting results – 0.5 p.; suggesting search terms – 0 p. In total: 3.5/5 p.
additional elements of IA	appropriate footer quality – 0.5 p.; actual headings – 1 p.; the proper amount of text – 1 p.; a secured link – 1 p.; adaptation to the needs of people with disabilities – 1 p.; ability to set cookies options – 0 p. In total: 4.5/6 p.
	In total: 14/22 p.

Source: own study.

Only half a point was awarded for the lack of alphabetical organization scheme, too less graphic labels, no data in footer, and no ability to set cookies preferences. Also, as filter options exist, sort options are not available. As for the navigation system, it can hardly be called advanced. There are missing too many elements such as not only social navigation, alphabetic indexes, tree-like navigation and context menu, but also: mechanism of export of search results, scrolling as a navigation path mechanism, location paths with highlighted labels, attribute paths with direct access to parent categories. As it was in the case of the CIA website, even if there are no options for disabled users, the contrast and larger letter size let users move on the website.

FBI – qualitative assessment of the IA within

the UI on the official website



Illustration 6. An excerpt from the top of the FBI homepage

Source: *Welcome to FBI.gov* – FBI. Retrieved from: <https://www.fbi.gov/>.

The FBI website (see: illustration 6.) starts with the top menu bar, located at the top of the page – and above it, there is the information, like in the case of DEA’s website, that it is an official website of United States. The FBI logo is displayed under that black top bar with a white font. The banner is designed in shades of blue and includes a map of the world, a cartographic grid, a binary system and circles.

Below the banner, there is the main full-width cover photo of a woman facing away from the lens. This section contains the main headline that sounds: “We protect the American people and uphold the U.S. Constitution” and it is displayed with the button “Read more”. Under this section, there is another section named “I Want To”, containing three-column layout with three rows of options of navigation, with graphic and text labels. When the user goes to the next parts of the home page, an arrow icon appears, following by automatic smooth scrolling to the top of the site (see: illustration 7.).

I Want To

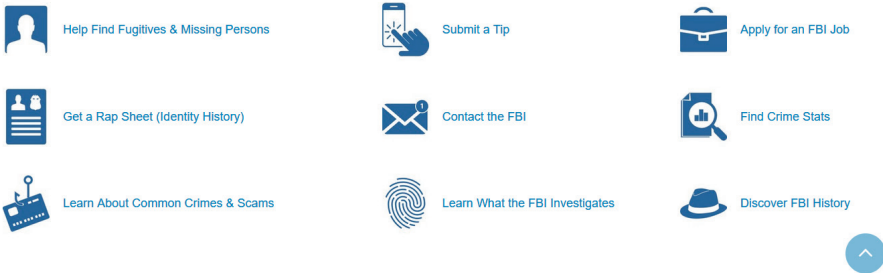


Illustration 7. An excerpt from the FBI website – 3-column layout section with graphic and text labels

Source: *Welcome to FBI.gov* – FBI. Retrieved from: <https://www.fbi.gov/>.

Below on the website, there is another 3-column layout section named “Featured Content” and contains news (one column – one news, i.e. headline, picture and short description). Under this section, there is a label “News” with another 3 columns: “Stories and Podcasts”, “Press Releases”, and “Twitter Timeline”. The first two columns contain headlines preceded by a date of the news, and a short description below. The last column shows embedded Twitts. At the bottom of the page, there is an extensive site map and below there is a footer that complies with the functionality rules, but does not include the website update date.

An interesting feature from the perspective of facilitating the user’s access to information (so also the practical purpose of IA), is the displayed bottom bar, offering users to stay connected. It is displayed after the user enters the website for the first time. The information is as follows (sic): “[here: envelope icon] Stay connected Get FBI email alerts”. The user can react to the newsletter proposal by clicking “Subscribe” or “No Thanks”. Staying on the topic of bars, the above-mentioned top bar is a wide and shallow hierarchical model, and includes labels (all written with Caps-Lock) such as: “More” with three horizontal lines icon, “Most Wanted”, “News”, “What We Investigate”, “Services”, “Resources”, and “Sumbit a Tip” (see: illustration 6.). A browser window is pushed to the right side of the top bar. On its left side (and still the right upper corner of the page) there are social media icons. What is more, the extensive search system with built-in advanced filters is noteworthy. After entering the search term “FBI”, the system generated the exact number of results (17.681). 20 results are displayed on one page. However, regarding search mechanisms, there is no step-by-step navigation; there is only page-based with the label “Next >”. At the end

of this paragraph, it is worth mentioning that when a user clicks on certain labels, then they are surrounded by a rectangular frame with a dotted outline, which gives an interesting visual effect.

The researcher noticed some changes on the website that have been made between January 2022 and September 2022. Some headings were different in the first half of the year but this has no effect on scoring changes. The main change happened on the top of the website. In January 2022, the layout included a section covering 2/3 of the screen and parallel to it, a side column covering 1/3 of the screen, instead of a full-width section. See the previous appearance of the website on the illustration 8. The evaluation of the FBI website is presented in the table 4.

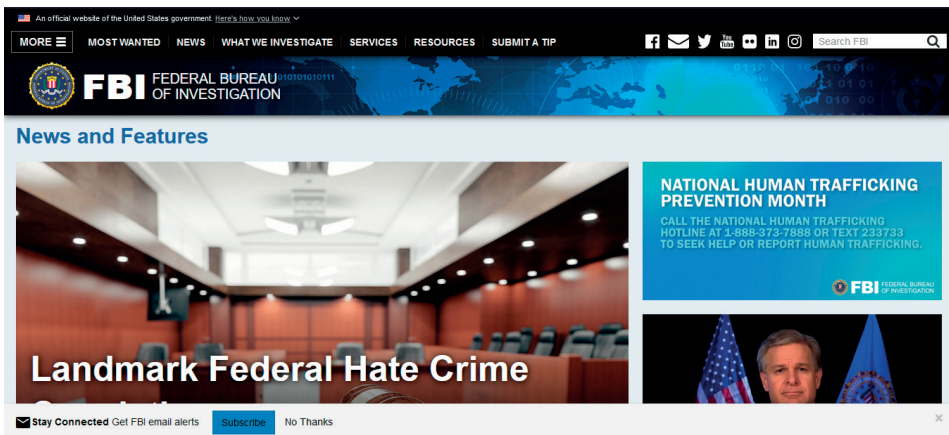


Illustration 8. An excerpt from the FBI website – January 2022

Source: *Welcome to FBI.gov* – FBI. Retrieved from: <https://www.fbi.gov/>.

Table 4. Evaluation of the FBI official website

IA systems	Criteria and scoring
design of organizational systems	organization schemes – 0.5 p.; hierarchical models – 1 p.; organization of information – 1 p. In total: 2.5/3 p.
design of labeling systems	appropriate tab naming – 1 p.; representative icons – 1 p.; correct placement of labels on the website – 1 p. In total: 3/3 p.
design of navigation systems	structures allowing a user to access information objects or content areas – 1 p.; advanced auxiliary system – 1 p.; tag cloud – 0.5 p.; a guide – 1 p.; visual navigation – 0 p. In total: 3.5/5 p.

IA systems	Criteria and scoring
design of search systems	properly functioning search engines – 1 p.; their correct placement – 1 p.; advanced search – 1 p.; various methods of filtering and sorting results – 1 p.; suggesting search terms – 0 p. In total: 4/5 p.
additional elements of IA	appropriate footer quality – 0.5 p.; actual headings – 1 p.; the proper amount of text – 1 p.; a secured link – 1 p.; adaptation to the needs of people with disabilities – 0.5 p.; ability to set cookies options – 0 p. In total: 4/6 p.
	In total: 17/22 p.

Source: own study.

The FBI website was awarded only half points for the lack of alphabetical organization scheme, no data in footer, no ability to set cookies preferences, and no options for disabled users. In the case of CIA and DEA websites, there are no such options as well but the letter size of their design, according to the researcher, is more accessible for people with disabilities. However, alternative descriptions of graphics are an advantage (see: illustration 9.).

```

<div class="cover-image-container cover-container slightly-dark" style="height: 460px;">
  ::before
   event
  <div class="cover-image-background"> FBI
  </div>
</div>

```

Illustration 9. An excerpt from the FBI website's source code showing alternative description of a graphic file

Source: *Welcome to FBI.gov* – FBI. Retrieved from: <https://www.fbi.gov/>.

On the FBI website there are some more missing elements like: no step-by-step navigation, no tree-like navigation, no scrolling as a navigation path mechanism, no paths containing search filters, and no context menu. However, there are some interesting solutions on this page that have enriched the navigation systems. Even if there is no specific tag cloud, there is a possibility to search by tags displayed in the drop-down list. This option is located on the FBI Multimedia website, which is linked to the fbi.gov domain (see: FBI Multimedia, 2022). What is more, there is no mechanism of export of search results but instead there is a possibility to export news to social media or by e-mail. Another half a point was awarded to the mobile version of search engine which even if is well-designed, it does not allow a user to return to the parent categories in the form

of attribute paths. In turn, attribute paths with direct access to parent categories are present only on some subpages.

A huge advantage on the FBI website is a guide. Search system, in the subpage of search results, shows an announcement: “To narrow your search, select a content type option listed under »More«. To broaden your search to other FBI sites, select a subdomain listed under »Source«”.

Discussion and conclusions

Table 5. Comparative analysis of the IA on the CIA, DEA, and FBI websites – scoring

Researched agency:	Organizational systems	Labeling systems	Navigation systems	Search systems	Additional criterias	Total:
CIA	3/3	3/3	2/5	5/5	5/6	18/22
DEA	2.5/3	2.5/3	1/5	3.5/5	4.5/6	14/22
FBI	2.5/3	3/3	3.5/5	4/5	4/6	17/22

Source: own study.

According to the table 5., the CIA website ranks first in the table for scores, the FBI website ranks second, and the DEA website ranks third. The quality of websites may be related to the size of federal American agencies’ budgets but this conclusion cannot be said lightly. However, the latest data show that the budgets of the three chosen institutions increase in direct proportion to the quality of websites in terms of the IA.

Table 6. The federal American agencies’ budgets growing in direct proportion to the quality of researched websites in terms of IA

Researched websites of agencies:	Budget (dated on 2021):	IA analysis (in points):
DEA	\$3.1 billion	14/22
FBI	\$10.5 billion	17/22
CIA	\$60.8 billion	18/22

Source: own study based on data retrieved from: DEA, 2021, <https://www.dea.gov/data-and-statistics/staffing-and-budget>; Bubl , 2021, <https://www.govexec.com/management/2021/06/fbi-director-makes-case-increased-staffing/174916/>; IC Budget, 2022, <https://www.dni.gov/index.php/what-we-do/ic-budget>.

The budgets of these institutions (see: table 6.) are relatively large. Even if the difference in scores is small, the larger the budget, the greater is the expenditure on the website. It is quite possible that in financial plans of these institutions, their websites are not of the highest importance. Anyway, the CIA website is designed in very high quality and can be a role model for the other websites. It should be also noted that there is only one point difference between the CIA and FBI websites. However, it is very important in the inference that the CIA website design is enriched and improved in every way. The FBI website is much simpler visually, which is also in line with the budget. The IA systems were scored, i.e. the functioning of options facilitating the user's access to information – and not design itself. This explains the small point difference. The relatively weakest page appearance is represented by the DEA which also fits in with the budget. Although the examined websites undergo dynamic changes.

The main purpose of the research was an attempt to verify the main hypothesis (H0) that the websites of CIA, DEA, and FBI, as modern communication technologies of federal American agencies, are qualitatively good in terms of the IA within UI. This hypothesis has been confirmed. According to other hypotheses, the websites do differ from each other in terms of the IA quality within UI (H1) and some errors or missing elements of important elements in the IA are noticeable in every analyzed website (H2). There were no “scandalous” errors like inconsistent navigation within the website or broken links, but a few elements of the IA were missing; the websites are generally easy enough for users and they are designed taking into account all the principles of functionality (H3).

During the research, the author encountered a limitation, which was the multiplicity of options being related to very extensive webpages due to their specificity, so the author might not notice all the elements despite all due diligence. However, in the context of assessing the interface adaptation to the visually impaired, it would be worth conducting research with the visually impaired users and drawing conclusions from a practical approach, which would improve the research.

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Architektura informacji w witrynach internetowych wybranych federalnych agencji amerykańskich: CIA, DEA i FBI

STRESZCZENIE Celem artykułu jest próba weryfikacji hipotezy, że witryny internetowe Centralnej Agencji Wywiadowczej (CIA, Central Intelligence Agency), Administracji do Walki z Narkotykami (DEA, Drug Enforcement Administration) i Federalnego Biura Śledczego (FBI, Federal Bureau of Investigation), jako nowoczesne technologie komunikacyjne federalnych agencji amerykańskich są jakościowo dobre pod względem architektury informacji (ang. *Information Architecture*, IA) w ramach interfejsu użytkownika (ang. *User Interface*, UI). Stany Zjednoczone są światową potęgą i powinny być wzorem dla innych krajów. CIA, DEA i FBI to potężne, znane instytucje, silnie promowane nie tylko przez amerykańską politykę, ale także przez popkulturę. Wysoka jakość stron internetowych federalnych agencji amerykańskich jest ważna dla budowania dobrego wizerunku tych instytucji, gdyż ich działalność jest tajna, a strony internetowe są jednym z nielicznych kanałów komunikacji publicznej, niezbędnym do utrzymywania kontaktu z użytkownikami. Potrzebne są badania IA (tj. czterech systemów: systemów organizowania, etykietowania, nawigowania i wyszukiwawczego), aby sprawdzić, czy dostęp do informacji na stronach internetowych jest wystarczająco łatwy dla użytkowników i czy zostały one zaprojektowane z uwzględnieniem wszelkich zasad funkcjonalności. Metodologia badań obejmuje analizę porównawczą i ocenę jakościową architektury

informacji oraz obserwacje własne. Artykuł charakteryzuje się szczególnym walem poznawczym, gdyż jak wynika z wiedzy autorki, nie ukazała się dotychczas publikacja naukowa na ten temat.

SŁOWA KLUCZOWE CIA, DEA, FBI, AI, systemy etykietowania, systemy nawigowania, systemy organizowania, systemy wyszukiwawcze

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