Application that Assists Modern Website Positioning: Modern SEO

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Abstract—The article describes the immense potential of using websites and their optimization in technical and content aspect, with the aim of building prominence in natural Google Search results. The study also presents the functionality of service research tools, website return links, and website research tools.

Index Terms—SEO, Search Engine Optimization, SEM, Search Engine Marketing

I. INTRODUCTION

OWNING a website is one of the factors required of contemporary online store owners, local stores, shopkeepers, dealers, and other forms of business activity. Having a website that helps to find information quickly is a success, but its proper optimization with respect to internet browsers does wonders. Modern SEO is based on management, optimization, editing contents on your page, and actively obtaining links to the page. This is what largely adds to the page being in the TOP10 results of a particular searched phrase/keyword.

Without a doubt, the most popular browser in Poland is Google. Millions of people use it everyday on their mobile devices, personal computers, and laptops. It contains the biggest resource base (websites, photos, videos, PDF documents, and other) that web crawlers collect and save daily.

II. WHAT IS A WEB CRAWLER?

It is a program that runs through internet links and sends information about the pages to its database. [1]

Thanks to its work, we can view different resources in the search results. The more often a web crawler visits our page, the more useful information will be delivered to Google database. The web crawler works in two ways. Its work is divided into two parts: semantic analysis and lexical analysis.

Semantic analysis consists in checking the code of a given page, attached libraries, external CSS files, JS and other, page coding, links used on a page, downloading meta data and checking everything in a HEAD section of a particular webpage. Thanks to that, web crawlers quickly specify and check what a page has to offer in a semantic sense.

Fig. 1. How a web crawler work (source: http://oneclicksong.com/search-engine-optimization/how-search-engine-works/)

Lexical analysis consists in checking the contents included on a particular website. Google appreciates the unique contents with high user value that will be useful for them. The browser regularly checks if pages included in its index have valuable contents that are intended for users, and not for web crawlers (artificially packed keywords and other techniques for which Google can impose a fine). The algorithm is named **Panda**. Google used it for the first time in January 2011. It was supposed to lower the rankings of the pages that do not have valuable contents.

The updates that Google used so far in their algorithm can be seen as a Timeline on https://moz.com/google-algorithm-change.

III. KEYWORD ANALYSIS

Keyword analysis is one of the most important steps that should be taken immediately after publishing a page on the Internet [1]. It consists in choosing right keywords that will direct users to our page. Depending on what we are going to offer – products, service, information, blogs – this must always be done. Thanks to that, we will be able to immediately check and determine the words that will direct the users to our page [2].

To check how popular particular keywords are, a few supporting tools can be used. The most important tool is Google Keyword Planner. It is powered by data that Google gathers on words that are being searched on the Internet. This tool is the most efficient one.

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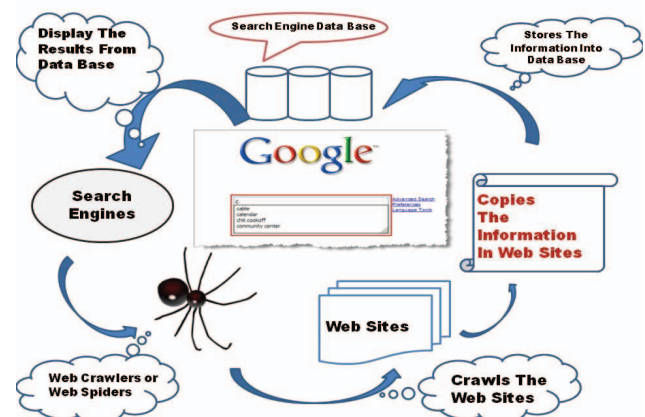
Figure 2 shows the interface of the Keyword Planner tool. This application allows us to specify the country, language, and date range, in which we want to examine given keywords. Thanks to that, we obtain the information about a particular word/key phrase.
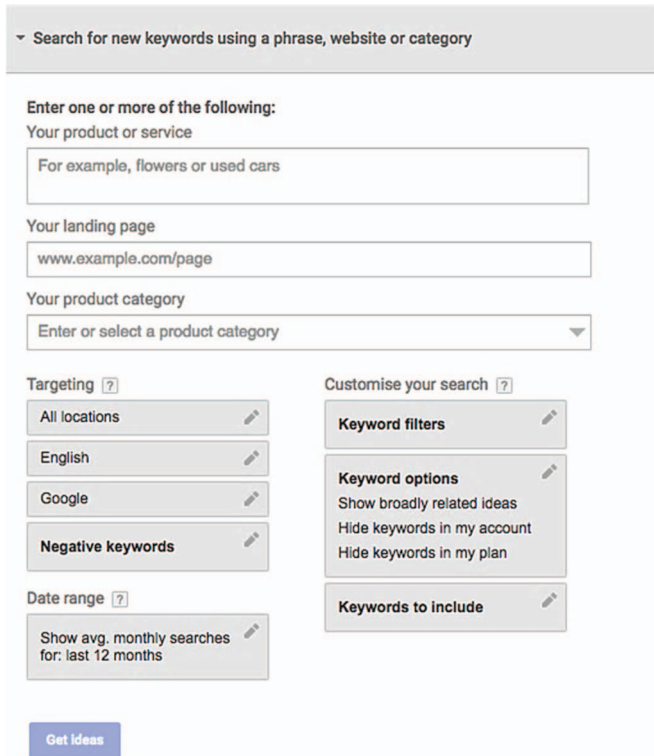

Fig. 2. Google Keyword Planner panel view

Another tool that is worth using while conducting a keyword analysis is Keyword.io. This application works in a very similar way that the previous one does, but it operates on a different database – it is an enhancement to the previous one.

Fig. 3. Keyword Tool panel view

We should remember that the more information on a word/key phrases we gather now, the better website we will be able to prepare.

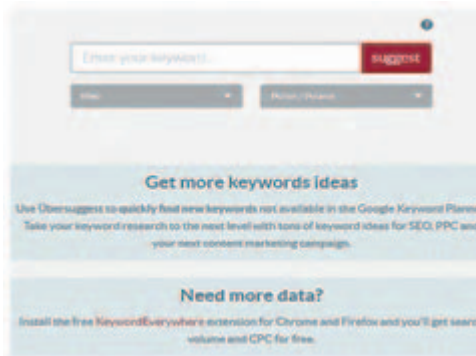Another application we can use to choose the keywords is the Ubersuggest tool.

Fig. 4. Uber Suggest panel view

This tool does not give us information about the amount of searches of a particular keyword, but it gives us a number of other possibilities, such as how users could have typed in the inquiry data.

Gathering information with these 3 applications allows us to prepare a vast pool of phrases/keywords that we will be able to use in optimizing our service with respect to its contents.

The contents that we submit to a website are important for a few reasons:

- they **increase the credibility of our website,**
- they increase service rank in natural search results of given key phrases,
- **they increase organic traffic** on target pages.

Each website has a few key elements that, with respect to technical and content aspect, have a great influence on our page status in the organic search results. Those are:
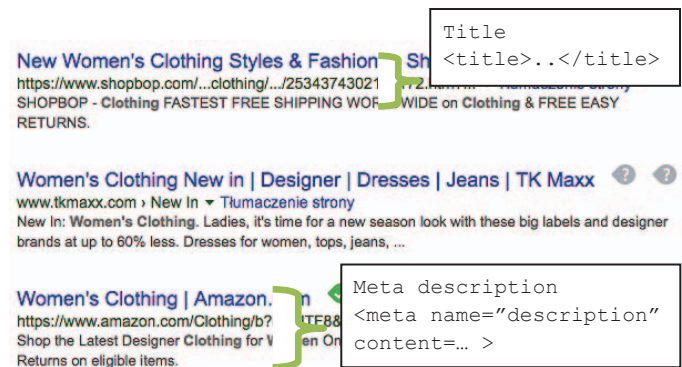
- Page titles
- Meta descriptions
- H1 headings

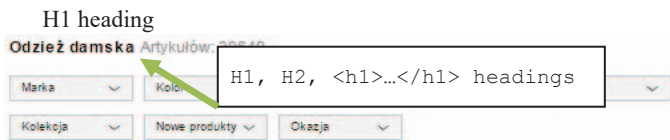Fig. 5. Search results view

H1 heading

Fig. 6. Website heading view

Alternative photo descriptions

Fig. 7. Product page view

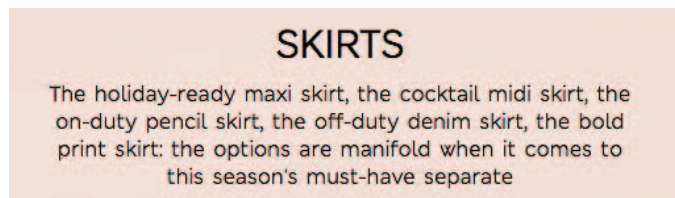Text (product category descriptions, articles, etc.)

Fig. 8. Category description view

While using keywords in optimization, we should also focus on so called Long-Tail phrases that are frequently typed in.

Very general phrase: dresses – popularity 135 000 searches monthly

General phrase: fashionable dresses – 9 900 searches monthly

Long-Tail phrase: fashionable summer dresses – 140 searches monthly

Long-Tail phrases usually consist of 2 to even 5 connected keywords. Thanks to applying such constructions, it is possible to search a particular product/service that interests us. Typing vague queries will give very general answers, while Long-Tail phrases give specific results.

IV. How to Create Contents on a Page?

Properly prepared website contents help users to take an action, for example to add products to cart, publish a piece of an entry on a different blog, like a photo, etc. The contents must engage the user to read further. Thanks to this technique, we will be able to stimulate some of the users' behaviors. It is necessary to make sure that the contents were saturated with keywords accordingly [4]. Saturation consists in placing a given word/key phrase a few times throughout the contents of the whole publication. Different forms of a particular phrase/word should be used, so it would look most naturally.

Thanks to that, the text on a page will be received better by the Google search engine bots, it will encourage users to seek further information, read and browse a particular website.

V. Valuable Contents, Meaning What?

While answering this question it is necessary to highlight a few important aspects connected with contents.
Valuable contents, meaning:
- addressing the current trends
- popular, searched frequently
- keywords
- prepared diligently
- showing an expert approach
- formatted appropriately
- attractive for a user
- unique and original
- encouraging to share them

If we create the contents that address user's preferences, we can be sure that our website will be successful.

What do we get from developing content on a page?
- Increase in users' trust
- Increase in Google bots' trust
- Increase in website visibility
- Better website rankings

Submitting articles to external web portals:
- Building reputation among users
- Obtaining valuable return links
- Increasing the value of a target page
- Supporting off-line campaigns

VI. Strategy for Creating Content on Websites

While developing content on our website, we have to determine a strategy that will be continued later:

Strategy
Key assumptions:
- aims and target groups

Analysis:
- of target groups, discussions, market trends and the competition

Strategic idea:
- consumer insight and the big idea

Action plan:
- content and advertisement agenda, channels and schedule

KPI:
- success and budget measures

Studying the measure of success and specifying the budget that can be spent on developing the content will be one of the most important factors during making decisions about extending the content section on different subpages/page categories.

Supported by the earlier word analysis, to determine if the words that we want to use will bring to our page valuable traffic from organic search results.

VII. LINKS, LINKS, LINKS... WHY ARE THEY SO IMPORTANT?

Internet websites that were launching their business activity a long time ago (perhaps at the dawn of the Internet) exchanged cross-references, so that the users could reach from one subpage to the contents on other websites.

The links are unique paths that direct web crawlers and users to our website.

Speaking of links, it is necessary to mention that what counts is their quality, not quantity. The value of a link is determined on the basis of the domain from which the link originates. To specify these parameters we use tools that are available for commercial use, or for free (with limited options).

The tools used most frequently by the experts are:
- Majestic.com
- Ahrefs.com

Figure 9 presents Majestic tool. After typing in the URL address of the page studied, we obtain a number of information that help us in specifying whether a given website has good statistics:
- Information we obtain is:
- The amount of links redirecting to the page studied,
- The amount of domains building links to the page studied,
- Positioning of the anchor texts that lead to the page
- How much credibility does the tool give to the links redirecting to the page studied,
- Quantity to quality ratio of the links redirecting to the page

Studying a website with respect to the above is also a crucial phase that should be systematically repeated and analyzed.
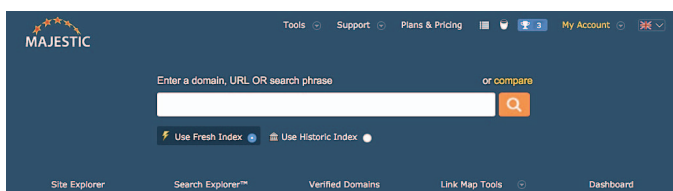

Fig. 9. Tool interface view https://pl.majestic.com/

VIII. AHREFS TOOL

Figure 10 presents Ahrefs interface. This tool allows an extensive examination of the links redirecting to the website studied. To examine the full functionality of the tool, it is recommended visiting www.ahrefs.com and learning about all of its advantages.
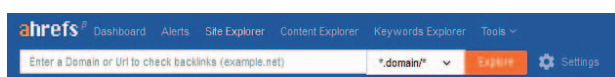

Fig. 10. Tool interface view http://ahrefs.com

Ahrefs tool delivers also information that is a complete set of data. Having data from these two tools provides us with a great database to analyze links redirecting to our page.

Links redirecting to our website are one of the most important factors influencing the ranking of our page in search results. The better the link building domain, meaning the domain that places a link to our page on subpages of its website, the more beneficial it is for our site.

The factors that influence the quality of a domain are:
- Domain age (domain registration date)
- Quality of the contents,
- Quality of links redirecting to the page,
- Quantity of outbound links on a domain,
- Website clarity,
- Open Graph usage,
- Unique contents,
- Page loading time,
- Structural data usage,
- Content appearance on a website,
- HTTPS protocol usage,
  and many other which are only our presumptive.

One of the factors that can also influence website visibility in the search results, is website visibility in Social Media.

Using Social Media to promote your website is one of the most frequently chosen directions. It gives the opportunity to reach a lot of people with a very limited budget. Creating an image in Social Media is essential, because that is how the users associate our website with a brand. It is no secret that caring about a perfect appearance of a business brand is a basic factor that influences clients' trust.

By giving users highest quality products, at the same time we underline our professionalism, engagement, and prestige.

IX. RESPONSIVE WEB DESIGN – A CRUCIAL ELEMENT OF EVERY WEBPAGE

To show concern for the users who browse our website on computers and mobile devices, we need to remember that the contents should be presented in a clear, readable and intuitive way. The contents presented on computer browsers will be formatted differently than the ones on mobile devices [4].

Responsive Web Design lets us create page template in a way allowing easy page adjustments for different devices. Thanks to implementing Responsive Web Design we do not have to invest in special website versions for mobile devices and computers.

Google requires that websites present their contents in a readable way on all devices.

An example of Google taking interest in mobile users is the fact that from May 4th this year, they published another browser algorithm update that is supposed to lower the rankings of pages that are not adjusted to displaying contents on mobile devices.

Google allows us to check if our website is well-displayed on mobile devices. To do this, they prepared a few tools that easily and quickly show us, how 'mobile' users view our website.

To do this, Google prepared 2 tools:
- Page Speed Insights
- Mobile Friendly

Page Speed Insights tool is mainly responsible for testing technical elements on a website, such as:
- Specifying redirections,
- Browser memory cache usage,
- Website compression on a server,
- Graphics optimizing,
- and other important elements.

The tool informs us what a studied website looks like on a particular device: a mobile device or a laptop.

Fig. 11. Tool screenshot
https://developers.google.com/speed/pagespeed/insights/

More information about the tool available at: https://developers.google.com/speed/pagespeed/insights/

The next tool that specifies if a website supports mobile devices is Mobile Friendly. The tool is available at: https://www.google.com/webmasters/tools/mobile-friendly/

As a result of a query, we get information on whether the website is mobile-friendly or not.

Fig. 12. Tool screenshots
https://www.google.com/webmasters/tools/mobile-friendly/

Owning a website that adjusts to a device is essential. The amount of mobile devices increases daily, more and more people use smartphones, so our website has to be adjusted for all users who are interested in our products/services.

X.   USING JAVASCRIPT ON A WEBSITE

Presenting contents in an intuitive and accessible way, regardless of the platform on which it is displayed, is an extremely important factor. We cannot allow one of the JQuery libraries used by our website to be unavailable. If displaying information on our website relies on JavaScript library availability, it has to be modified. Google recommends contents to be presented in the simplest way possible, such that does not require using external libraries. If contents on our website are not visible after disabling JavaScript support, it should be modified.

The best method is to present the contents with HTML code only. Markers of this code are 100% visible and indexable by the browser bots.

If the browser bots find problems with viewing our website's code, such that make it impossible to index it, the bots will not be able to check the contents on our website. Despite all our efforts to prepare keyword/phrase analysis and suitable contents, we will not succeed, if we do not display information adequately, with technological aspect in mind.

Only by meeting these requirements can we appear in the top rankings in Google's organic search results.

XI.   WEBPAGE TESTING TOOL

The tool presented here is a website that uses Simple_HTML_DOM library to test pages in a semantic sense. Using the application allows us to check headings occurrence, titles, descriptions, and internal link building on a particular page.
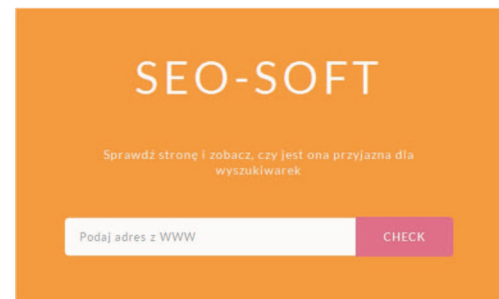

Fig. 13. Main screen screenshot

The tool is very intuitive and requires only the URL of a studied website. A URL address is a unique address of each of the subpages of a website that at the same time determines its existence.

Fig. 14. Main screen screenshot

After typing in the studied URL address, we obtain information on website title <title></title>, description <meta name="description" content="…."/>, and the tool checks if the website uses robots.txt file, whether web crawlers can index the subpage. Annotations in robots.txt file define, if the website is visible in search results or not.

The tool in question determines how long a particular element is, in this case, a subpage title; it also specifies if the length of the text is appropriate. Depending on element's length, the fields change their appearance – font color and commentary content.

According to research and publications posted recently by Google, organic search results can display titles 70 to 71 characters long.

The publication contains information describing in detail the issue and the update https://www.searchenginejournal.com/google-titles-and-descriptions-2016/163812/.

It is necessary to remember that each subpage title should be easy to read, properly saturated with keywords and no longer than 71 character. This is how we use the full potential of a website title. Next issue worth mentioning is page description. Information included here describe a given subpage. They must be specific, without excessive keyword usage. Page description was presented in previous paragraphs of the article.

Another crucial element that should be checked while testing the file, is the presence of the robots.txt and sitemap.xml files.

Fig. 15. Main screen screenshot

Using those files can be key to indexing the page by web crawlers.

File robots.txt contains information that can block access to web crawlers, or that can block access to specific server resources.

File sitemap.xml is a file that contains all URL addresses within a domain. By using this file, web crawlers can quickly find all subpages of a website; they reach them quickly and index them. Thanks to that, the website will be visible with more phrases in limited search results.

Figure 16 shows heading usage on a studied subpage. In previous paragraphs concerning content optimization, there is a description of a H1 heading usage (unique heading on each page) and other headings, with the aim of using the potential of all keywords.

Fig. 16. Main screen screenshot

Another screenshot presents internal link building that occurs on each subpage. We should pay attention so that there were as few outbound links as possible. The tool shows all outbound links on a given page.

Fig. 17. Main screen screenshot

The tool in question differs from others; it is freeware and there are no limits on how many subpages we can test. Competing tools allow us to test 5 subpages for free, but after that we have to pay. There are a lot of similar tools on market, but we should pay attention to this one: www.woorank.com. It is more complex than the previous one, but it is expensive and uneconomic for a private use.

Fig. 18. Main screen screenshot

The tool gives information about webpage graphics in a simple way. If any website graphics lack the alt attribute, the tool will inform us about it. Using the alt tag was described earlier in the article.

XII. RECAPITULATION

The world goes forward, technology addresses people's needs more and more, and thanks to that, we have much more freedom to use it every day.

If we want to appear on the web, we have to be diligent in preparing proper contents for our website, and take care of technical aspects and links redirecting to it.

The results of SEO are not visible immediately. It is a process that aims to achieve the best website visibility possible to the number of phrases in organic search results. If we are determined enough and we have a clear vision of our work, we can rest assured it will bring profits in the future.

The contents are a crucial factor that Google takes into consideration during positioning a website according to the keyword.

The contents on websites should be above all created for people, not web crawlers. Each action that aims to extend the contents on a website must be supported by a previous analysis, to which is strongly encouraged.

The tools presented enable us to quickly and effortlessly gather all information that should be taken into consideration while optimizing a website.

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