

# The Computer Management – SEO Audit

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## **Abstract**

*Any Internet connection without strong management at base is a big source of risk for the user. Considering the currently role of the Internet in society, its vulnerability becomes directly a vulnerability for the human society.*

*The management regarding to the Internet involves activities organized inside of specialized groups in information security, in processing of web pages content or in electronic commerce. All of these things contribute to ensure the quality of web sites used by users.*

*The quality of a website is reflected by a good indexing and positioning in search engines. SEO audit represents an analysis to the problems faced by a web page about to be optimized and the solutions to them.*

**Keywords:** *management security, audit analysis, information security.*

**JEL classification:** M19, M10

## **Introduction**

In the year 2008 it was found a number of devices connected to the internet greater than the population of the entire world. The dependence on information technologies is a current factor that appeared in the general trend of using interconnected computers in all economic and social areas. The confidence of the actors involved in the use of the computer systems or in the exploitation of results provided by them in the framework of an entity is determined both by the quality of the information obtained, and the degree to which it ensures the use of the computer technologies as accessible and friendly tools in the current work.

The operation of the computer systems and the services they offer to users is based IT management which involves a strategic planning of information technologies, necessary for the administration and directing of all IT resources in line with the current requirements and standards. This management aims to change and development in the field through the implementation of policies, procedures and controls to ensure that the systems work according to the requirements, are

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reliable, controllable and inexpensive, have a safe control of the integrity of the data and satisfy the needs of users (Rojă, Nastase, Valimareanu, 2014).

Fulfilling the responsibility of the management is provided by the auditors in the examination of the policies and procedures specific to the activity of each entity. The control objectives related to the computerized environment focuses on: the assessment of the quality of management, physical security of the IT system in general, the system continuity and functionality of the applications. The audit aims to assess the existing IT infrastructure, as well as the level of information security, with the aim to identify potential risks to the audited entity and to provide professional solutions to avoid or fix them (Androniceanu, Drăgulănescu, 2012). This assessment is a sure guarantee that the hazards on the company, but also the possible losses of the data are removed successfully.

The audit of the computer systems is a relatively new subject and not very different from the audit of the other systems quality by making his way, but only by the directions, the matters pursued, the content of the audit questionnaire, but especially by the way in which evidence is presented, in the sense that most of these cannot be provided on paper to the auditors for evaluation. The auditors access in an organization's network may pose a threat, and the organization is obliged to take measures to be able to provide all the audit evidence and at the same time to protect the secrecy of information existing in the system (Năstase, Predișcan, Roiban, 2013).

We must also pay attention to the way that even the organizations that deliver education evolve and perform. They are embedding more and more ITC in their didactic and research activities and there must be a good correlation between the cost associated with hard and software investments and the results obtained (Ioanăș, Tuțu, Gruiescu, 2013). Performing IT audit is indispensable in the context of web sites, because their quality encourages competitiveness and maintain profitability in the field. For this purpose they created sites to be able to get an analysis of online audit offering a vision to both the users and those who are in charge of sites, about the current state of the SEO requirements. An example of such analysis is presented in this paper to show what are the main features of a site that determines the optimization in the search engines.

### **1. The Content Management – SEO (Search Engine Optimization) Audit**

The content management refers mainly to the totality of the content processes on the Internet or of the computer resources (text, images, video) and the Internet pages of web sites (archiving, archive management, resource management) (GMROI, 2014).

It is important to note that Management entails mainly a strategic and integrated vision on the future of the organization, the establishment of realistic goals, and the efficient allocation of resources for organization's development and also for its different components (Ionescu, Grigore, 2016).

One of the most important objectives in the management of web content is meeting the criteria of SEO. To achieve this optimization it is necessary the result provided by an SEO audit. SEO audit represents the procedure of analysis of the characteristics of a website that are important for obtaining a better positioning in the search engines and is the first procedure in the list of activities specific to the process of optimization. A SEO audit should contain information primarily related to the indexing of current website pages by the search engine, the issues related to optimization, as well as recommendations for solving the problems identified (Volkman, Tokarski, Grunhagen, 2010).

There are two types of optimization: on-page and off-page. On-page optimizing is carried out at the level of content, metatags, structure body, and at the level of the site content so that it can be indexed on a better position by the search engine (Bogdan, 1997). This optimization is performed at the source code level and at the level of content. The first level refers to the HTML and CSS codes of the pages so as to reduce their size and to be complied with the rules required by the algorithms of search engines. The optimization is carried out at the level of meta tags, images, links and number of elements with active content (Dorata, 2008). Improving the level of content refers to the creation of a optimal density of the keyword, using tags H1-H6, the size of the pages and keeping the number of links in a limit accepted by the search engines (Heise, Lierse, 2014).

The audit chapter properly on-page optimization comprises an analysis of the site content from the point of view of the search rules of the engine used. The chapter on off-page optimization contains reports related to the number of page rank links and the site domain. After the implementation of the suggestions resulting from the SEO audit is possible requesting a re-audit to check if the implementation was done successfully.

The optimization process does not end at the time that the site was indexed on the first page of the search engine, whereas it may occur at any time changes in the indexes of the latter, because the algorithms of search engines are constantly changing (Gates, 2014). The more a site is indexed on a better position, the efforts required to maintain or to get a better position, are higher. A maintenance activity of the site is required in order to retain or to improve the site indexing. Maintenance activity provides for re-enrolling site in the directories where it has already expired the entry and respectively, the entry in the new guidelines obtained by studying the competition (Allen, Gale, 2000).

## **2. The Management and the Audit of the Information Security**

The management of the information security, present in the ISO/IEC 27001 standard, lies in the implementation of procedures to prevent obtaining unauthorized access to data or critical programs and to ensure the confidentiality, integrity and credibility in the environment in which operate computer systems (Datta, Guthrie, Basuil, Pandey, 2010). Objectives of control relating to the security management system are: IT security policy, identity management,

management of user accounts, security testing, monitoring, the definition of security incidents, management of cryptographic keys, the prevention, detection and neutralization of the malicious software, the security of the network (Makela, Näsi, 2010).

An audit of information security refers to both the physical security of the information (servers where they are stored), and logic security of the information, having regard in the first place the programs used (Fransman, 2011). The specialists who carried out the audit follow a series of essential steps for the identification of security breaches, vulnerabilities and the degree of performance of IT systems. IT audit complies with several standards (ISO 27001, ISO 27002, ISO 20000, ISO/IEC 27005), rules and guides of IT audit, national and international, relating to information technology and the certification of the adequacy of the audit to the management systems of security risks information.

InfoSEC includes all protective measures and structures of information processed, stored or transmitted via information and communications systems, as well as of other electronic systems, against threats and any actions that may prejudice the confidentiality, integrity, availability, authenticity and non-repudiation of information as well as impaired functioning of computer systems, regardless of whether they occur accidentally or intentionally (Gojocar, Guzun, 2012).

### **3. The Audit Analysis of a Website**

To understand better the concept of SEO (Search Engine Optimization), it will be presented an audit analysis of a website (identified on the basis of the URL address), performed using an application online. The site auditor, [www.zadroweb.com](http://www.zadroweb.com) generates a report that describes in detail the elements that determine a good indexation of the sites audited in search engines. The report shall contain, for each factor analyzed, problems identified, and recommendations to remedy them in order to SEO (DuBrin, 2011). To help the user to interpret the results of the analysis, there are used the terms "warning" and "error" to indicate partial failure, i.e. total of a factor. In the case in which the criterion analyzed complies with SEO, it is checked.

A term commonly used in SEO report is "meta tag". This is a word or a key phrase that provides information about the content of a web page and define that page to the spiders and search engines. Meta tags are not visible to users of the site, they can only be viewed in the source of a page. Meta tags are HTML elements, inserted in the code of the site, with the aim of providing information or instructions. There are used by the robots of search engines to describe the page content and indicates how this to be indexed. Basically, they provides search engine a site's content, and if they are optimized correctly, improve your chances to

get a better rate of click in the results, since they can directly influence the decision of users to click.

- Organic Keywords

Organic traffic refers to that traffic which comes from search of keywords in a search engine and clicking on the natural links (not sponsored). SEMRush is a tool of this type of traffic used for the analysis of the organic keywords, competitors in organic search, keywords AdWords and many others. The organic words are those keywords associated with a root domain what is the part of the URL address, of the form \*.name.extension (domain name together with the domain extension). The organic words are the most important on the page and relevant to the content. So, it is recommended that these words be simple, general, and as close as possible to the domain name of the site.

- Title

SEO Standards recommend that the length of the title should not exceed 55 characters so that it can be included among the top options of all search engines. One of the most important search engines (Google) only displays 65 characters, everything that follows after are the points of suspension. Also, the title is an opportunity to provide a concise description of the web page contents, being the basic keyword in realizing the search.

- Description

This meta-tag of a page describes in a little more detail its content. If the description is optimized and written so that the phrases to be logical and to contain the keywords, the engine displays the results as a whole and not as a fragment of the content. It is desirable that the text should contain keywords and have a length between 150 and 160 characters. On the other hand, exaggerated use of the keywords is not recommended because, over time, can be penalized by the search engine.

- Keywords

Keywords are terms or phrases used to create a correspondence between the content of the sites and search terms of users. At the end of the '90s, he was one of the most important meta-tags, but began to abuse him. His role was the same as that of meta title and meta-description: to tell the search engine what you will find on the page. Currently, meta-keywords are taken into account by few search engines.

- Heading Tags

Heading tags H1-H6 define the structure in the HTML of the site for both search robots and readers. It is a method of organizing and prioritizing the content in the page. There are 6 H tags, H1 indicating the most important title of the page, and H6 the least significant. These tags are taken into account indexing in search engines, thus it is required the existence of at least one tag H1 for each page of a site. The advantages of these heading tags can be classified into three categories:

- for the readers of the page: determines the organizational structure of the content that will be easy to read;
- for those who publish articles on a website: is a method of presentation of the content. The basic version automatically sets the H1 for the site name, H2 for the site description, and H3 for the title of the article. Most of the times, the authors use a maximum of 3-4 H tags, the other being useful only for very long items;
- for the robots of search: parse and evaluate the contents more easily. They consider the H1 tag as the title of the article in the indexing process. If a reader landed on a page, read its title and continues with the content, that means he does not return to the results page and gives a signal to the robot that he is satisfied by what he found.

- o Images

When you add an image in the article or on a web page, a description ("other tag") of the image must be completed in the right place. The "Alternative Text" tag makes the search engines to understand what this is all about in the picture and also helps it to appear in search results for the relevant keywords.

- o Robots

Meta robots tag tells search engines (the robots that scan your website) if the content of a page may or may not be indexed and whether links on the page to be considered (follow) and evaluated. For example, if we want an image not to be indexed you should use other tag along with the robots.txt to block indexing. To block parts of the content of a web page using noindex tag, and to not take into account a link, use nofollow.

- o Site-map

Sitemap.xml is the file in which the indicated pages (as url) associated with the metadata which specifies the date of the last update, the rate of change and the relevance of the data relative to other urls in the site. Using such a file does not ensure that the search engine will index binding that site, but facilitates the process of indexing.

- o Contains Inline Code

Javascript is used to increase the interactivity of the web sites, and inline CSS for formatting the content. They improve user experience while browsing, but the excess of their use increases the size of web pages which leads to the decrease in the speed of loading.

- o Flash

Through the Flash objects are increased the dynamism of a page and facilitated interaction with the user. In contrast, a site built on the basis of flashes will have only one URL, one for the home page, and the lack of other URLs for the links between pages can be assumed fewer occurrences of that site in the search results.

- Facebook Open Graph Tags

The effective promotion of a website through social networks requires optimizing the site by using the tag of the Open Graph. This helps social networks to identify more easily the content on a web page that is desired to be promoted.

- Social Links

Search engine robots “focus” on the interest of a website on social networks. So, the site has more links to social networks, the more increase the chances of indexing. This is one of the most simple and effective methods of a site promotion.

- URL Keyword Matches

This parameter of the analysis delivered by the auditor site shows, in the following a comparison, if there is a connection between the URL and the title, and description of the page audited. These three elements, URL, address and title are important for SEO because they appear in every search result.

- Canonical URL

In general, a website can have multiple dynamic URLs. Therefore, the server that performed the search can return different content or other links than those sought. To solve this problem it is recommended that the page should have a unique URL or if there are other URLs, they should be directed to the canon one to help the search engine to take a decision in a process called “canonicalization” and it remains permanently.

- Friendly URL

For the page be easily accessed by the crawlers (“who burrows”) and search engine robots, it is necessary that the web page address or URL to be easily accessible to them. There are at least three ways through which you can get a friendly URL:

- the use of keywords in the description achievement when developing the pages of your site and their incorporation in URL. This can be beneficial as long as not overdoing it and the words still describe the content of Web pages;
- when developing the webpage and it loads the files in the host website it is prudent to make a simple structure of directories. This easily tell the robots of search engines and visitors to the site the location of the files so that they are seen avoiding in-depth exploration caused by the placement in the multiple subdirectories;
- avoiding the creation of two versions for the site URL. This will divide the "reputation" of the site, and the search engine will split your pages ranking.

By following these three tips to obtain better results in the process of optimization for the search engines to your target site, in getting quality and desired results.

#### **4. Questionnaire**

The use of Internet and the security issues related to the use of different applications by the users made the subject of a questionnaire based research. We present below some of the issues that we paid attention to, following that the research results to be widely presented in a future paper.

##### **a. The objectives of the research**

Starting from the main purpose of this project, determining the degree of information of the users in terms of the quality of the services offered by the Internet, the realization of this questionnaire has as central objectives the following:

- determine the impact that they have provided services on users.
- determination of the main elements of web pages that increase the competitiveness in the field.
- to identify the level of information and appreciation in regards to the necessity of an audit.
- the determination of the degree of influence of the security in terms of the quality of a web site.
- the identification of security problems most often encountered by the users questioned.

##### **b. Research hypotheses**

Its stated objectives, as well as theoretical and practical knowledge form the basis of formulating the following hypotheses:

- Users are either not sufficiently informed in connection with current methods of optimizing a site, either don't know at all what the subject of the question supposed.
- For most of the users is the important content of a web page, the main elements which determine its quality being the truthful, the aesthetic appearance and security.
- The majority of respondents do not know what is the concept of SEO and how it helps its implementation.
- The majority of people surveyed gives a special importance to the security of the web pages.
- The most common security issues encountered by users are the inappropriate content, online unreliable payments, stolen accounts, personal data stored by the sites, the most common referring to viruses and advertisements in excess or false.

### **c. The method and technique used in the research**

The tool of data collection: questionnaire

The stages of the study were the following:

- the objectives development of the study and of the research tool;
- establishing the sample of students and the application of the questionnaire;
- data collection: the questionnaire and entering the data on the basis of data;
- data processing and static analysis;
- preparing the research report.

### **d. The limits of the research**

The limits of the research were derived from the characteristics of the students: reduced availability and sometimes the lack of seriousness of the respondents that have hampered this research. The questionnaires were applied simultaneously to the entire population of students.

## **Conclusions**

It is expected that in the future almost anything will be connected to the Internet, thus competitiveness in the field of these services will increase enormously. Their quality is the only thing that will make the difference, and when we say quality we mean everything which means content is always put under the issue of security. IT audit is and will be one of the main ways used to maintain the high standards, in order to optimize and ensure the services whose quality must grow exponentially with the expectations existing in the market.

According to the audit presented in this paper, there is a set of rules that must be respected, and they represent the minimum in terms of optimizing a web page. Because in the Internet age everything is in a continuous change, and the novelty is a necessity in the field, it needs original ideas to provide new services to the users. It has proven many times in the IT sphere that innovative ideas are generally simple, and in the case of sites they must be established on the basis of the rules presented in the analysis of the audit (Vlăduțescu, 2012).

With the help of the criteria of the SEO audit that you can perform online free of charge, anyone who owns a website can increase the chances of developing it in the top results of a search engine by applying the solutions offered by the analysis of the audit. In the case of the ordinary user, which holds, for example, accounts on social networks, it may, by fulfilling the criteria SEO, to make the personal page more "visible" to be found more easily by the friends. Also, you can decide if you want the link to his page in the social network to appear in search engines or not, at the time that it is searched by name by other people.

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