Application of web design in the influence of positioning, based on SEO methodology, applied to the company the company EuroPerú S.A.C.

Wilson Lazo^{*a*}, Wilver Auccahuasi^{*b*}, Yvette Plasencia^{*c*}, Gabriel Rodriguez^{*d*}, Diana Chipana^{*e*}, Miguel Quispe^{*f*}, Alejandro Paredes^{*g*}, Karin Rojas^{*h*} and Esteban Medina Rafaile^{*i*}

^{a, d, e} Universidad Continental, Huancayo, Perú

^b Universidad Privada del Norte, Lima, Perú

^{c, f} Universidad César Vallejo, Lima, Perú

^g Universidad Nacional Federico Villarreal, Lima, Perú

^h Universidad Tecnológica del Perú, Lima, Perú

ⁱ Universidad Nacional Santiago Antúnez de Mayolo, Àncash, Perú

Abstract

The project consists of the implementation of the SEO methodology to the website of the company Europeru S.A.C under the brand name "modaGuiss" with the aim of generating a presence on the internet and positioning it in the first Google search results; to increase the passive and active traffic of the page and therefore, increase in potential customers, interactions, followers, etc. Finally, the web application "ModaGuiss | Footwear and Shoes" starting from the design of the page through the analysis of the competition with free tools for searching and filtering meta information for subsequent implementation of indexing in the consoles of the aforementioned search engines. With what was obtained as a result, appear in the search results with the words: ModaGuiss, Zapatos Guiss, Zapatos Huancayo, etc. However, to climb positions it was necessary to generate backlinks to our page and maintain constant activity. At the end of the development of the web app and the positioning, good results were obtained such as the positioning of the brand and domain name, by comparing the page without SEO and the page created with SEO, it was possible to specify that the SEO methodology allows you to position quickly in search engines, unlike not using it, which takes months or years to position your page.

Keywords 1

Satellite image, edges, matris, sobel, characteristic

1. Introduction

The SEO Methodology is an organic positioning that helps to carry out a set of positioning techniques for a website, generating traffic and authority. Throughout the years the SEO methodology has been used by many companies. In 2014 MERCEDES, Moráguez and LILLIAM Perurena, in their scientific article, "Proposal of factors to consider in the positioning of health websites" [1] show that "The development of information technology, together with the growing development of computer technologies, as well as the progressive increase in websites of various themes, has led to the use of search engines, it is from this moment when web positioning, search engine optimization or also known as SEO (Search Engine

ORCID: 0000-0001-8820-4013 (Wilver Auccahuasi)

© 0222 Copyright for this paper by its authors. Use permitted under Creative Commons License Attribution 4.0 International (CC BY 4.0).

WAC-2022: Workshop on Applied Computing, January 27 – 28, 2022, Chennai, India. EMAIL: <u>wilver.auccahuasi@upn.edu.pe</u> (Wilver Auccahuasi)

CEUR Workshop Proceedings (CEUR-WS.org)

Optimization for its acronym in English), plays a fundamental role as a marketing tool when you want to promote a website on the Internet."

In 2016 SERRANO Jorge, in his scientific article," SEO: Introduction to the discipline of search engine positioning" [2] mentions that "Optimization had its necessary birth within the industry. At some point in the 1990s, companies realized that if they wanted to increase traffic to their sites, they had to make sure their pages had search engine visibility. And the latter could only mean that the contents of your site had to appear among the first positions of the search engine results page. From here he naturally followed the professional profile of the person in charge of website optimization. These professionals had to scrutinize as efficiently as possible how to analyze and index the information that each search engine followed (yes, there was a time when it made sense to use the term in the plural). In parallel, the academics of our discipline studied and criticized search engines as information systems in equal measure. "

In the year 2020 GONZALES Javier, FONT Cristina I. AND ORDUÑA Enrique, in their scientific article "Universities in Google: towards a multilevel analysis model of academic web positioning" [3], mention that "Web visibility has been located in the epicenter of the different actions required to build the online reputation of universities. The interest in these tasks (which combine different areas such as documentation, communication, marketing, advertising and computing) on the part of universities has been due in large part to the popularity of the Web Ranking of World Universities (Aguillo and others, 2006), prepared since 2004 by the Cybermetrics Laboratory of the Higher Council for Scientific Research (CSIC), and whose website currently receives more than 800,000 visits per month (webometrics.info)."

In the same year INJANTE Richard, MAURICIO David, in their scientific article: "Method to recommend personalized positioning factors in the Google search engine" [4], mention that "The main problem for all website owners regarding To these search engines it is the low positioning, the low traffic and the lack of visibility in them, so to improve their positioning they have to use different positioning techniques; In this way, bad practices or the inappropriate use of these techniques are often incurred, which then generates penalties for the website and seriously damages its positioning. Many studies provide different positioning factors to use; However, due to the frequent change of Google's ranking algorithm, website owners run the risk of applying factors that might be prohibited.

2. Materials and Methods

To treat the project, the following methods were used: deductive - inductive with a quantitative approach, likewise with a pre-experimental design aimed at seeing and analyzing the changes that the application and the SEO methodology may present. According to the main results of the page, without implementing some type of content strategy, it can be inferred that the application presents elements that can be optimized, improved or discarded due to their lack of efficiency. The presence of these items has had an impact on the performance of the application, content quality and, as a major impact, the positioning it presents in search engines.

We will carry out a preliminary investigation of trends and keywords currently used to establish a context or peak point of popularity according to our footwear sector, likewise, it will be accompanied by elements that may be of interest according to searches related to local and national level.

Currently the SEO methodology is not a strategy with defined steps, since it depends on the benefit of each organization or capacity of use to a certain degree, so the line of actions for this work will be as follows.



Figure 1: Flowchart of SEO and Web Development methodology

In this series of processes, different types of results are obtained, whether they are typical of the web application or external as scores and what interests us the most, the place of positioning in search engines.

For SEO web optimization, some programming elements called "meta-tags" will be used. These items are not usually displayed on the web application pages, since they are readable by search engines, bots, social networks or other objective depending on the type of meta-tag or its function. As a proposal, it is recommended that we use a specific meta-tag to optimize and "place" our web application in a context or trend theme, however, these meta-tags are optional and of a medium influencing nature, which means that their use does not guarantees the first positions of positioning.



Figure 2: List of HTML meta-tags

As for the technical part of web development, the project was carried out with HTML, CSS3, JQUERY, BOOSTRAP, JAVASCRIPT and PHP language due to the design advantage it provides when developing the web application, in addition to helping good dynamic development of a web page, these were used in turn to create the front-end and the back-end, thus providing a web app of quality and functionality. In the part of the database MYSQL was used since it is compatible and efficient when connecting with PHP. For the design of the web app, Adobe XD was used, an excellent tool to create didactic designs close to reality, this helps to create an excellent prototype of the application.

And through the MVC pattern, a form or programming model that seeks the organization of elements or packages of a software, including their relationships, components or calls, also called the controller view model, the components of the application could be grouped according to several layers, at the same time that it demonstrates a clean, orderly and safe organization of elements for the edition, evolution or follow-up of any interested party.

Also, other items of use in parallel with SEO optimization include the use of RobotsTXT and SiteMaps, these elements are web pages not necessarily located for the general view of the users, since these are more analyzed by search engine bots or trend On the one hand, the ROBOTSTXT file is a page with a .txt ending that allows reading, analysis and subsequent location in search engines according to the

type of bot that you allow to analyze within the web application, these bots range from article analysis, news, recipes, product sales, etc.



Figure 3: Implementation Syntax in Robots.txt

On the other hand, SiteMaps are files with an .xml ending, that is, it is a page with structured data about all the domains, sub-domains, events, changes and contents of a web application, in order to analyze trends, type of content, update frequency, among other faculties of a web application, these make it easier for search engines to analyze all the elements of a web domain and therefore score points when locating a web application in the positioning places.

XML Sitemap	
Generated by YoastSEO, this is an XML Silemap, mean	nt for consumption by search engin
You can find more information about XML sitemaps on	Itemaps.org.
This XML Sitemap Index file contains 14 sitemaps.	
Silemap	Last Modified
https://yoaat.com/post-aitemap.xmt	2018-10-03 18 52 +02:00
https://yoaat.com/page.sitemap.xml	2018-10-03 17:11 +02:00
https://yoast.com/yoast_plugine-alternap.ami	2018-10-00 18:04 +02:00
https://yoast.com/yoast.dev.article.sitemap.ami	2018-09-21 12:12 +02:00
https://yoast.com/yoast.courses.alternap.aml	2018-10-05 18.59 +02.00
https://yoast.com/yoast_jobs-sitemap.kml	2018-02-27 15:50 +02:00
https://yoast.com/yoast_avents-alternap.emi	2018-10-03 09:48 +02:00
https://yoaat.com/yoaat.employees-alternap.aml	2018-09-25 11:42 +02:00
https://yoaat.com/bategory-sitemap.ami	2018-10-03 16:52 +02:00
https://yoast.com/post_tag-aitemap.aml	2018-10-03 18:52 +02:00
https://waat.com/yoast_dev_category-silemap.aml	2018-09-21 12:12 +02:00
https://yoast.com/yoast_jobs_category_stemap.emi	2018-09-27 18.90 +02:00
https://yoast.com/author-aitemap.xml	2010-10-01 21:44 +02:00
Hitps://yoaat.com/Vdeo-aitamap.ami	2018-10-08 10.02 +08.00

Figure 4: General Structure of a SiteMap

Although the mentioned elements are the most used for a search engine positioning, there are other files, elements or code related to establishing a theme or trend of an application or website, such as exclusive SiteMaps for images, videos, calls from bots that use only certain search engines such as Bing or meta-tags developed by ranking pages or social networks such as Facebook or Twitter through the use of their own libraries and others that can help improve popularity, interactivity with users or promote the contents of a website.

3. Results

3.1. Web page design

The design of the web page was carried out according to the functional and non-functional requirements of the company, in addition the designs made were created using the adobe XD platform, it is a graphics editing tool that works to create interfaces of web pages and applications. Allows the designer to focus on the user experience when browsing, with a minimum range of error and in the shortest possible time.



Figure 5: Adobe XD layout

3.2. Front-end development

The development of the Front-end was carried out using the JavaScript and Php language, a framework such as bootstrap, CSS3 design language and Html5 hypertext markup language was also used, which serve for an adequate creation of the front-end, in addition to security and code order the MVC model was implemented (model, view, controller).



Figure 6: Frontend code

3.3. Backend development

The Backend development was carried out using the JavaScript language, Php and LTE admin template, framework such as bootstrap, CSS3 design language and Html5 hypertext markup language were also used, which serve for an adequate creation of the backend, in addition to security and code order the MVC model was implemented (model, view, controller).



Figure 7: Backend Code

3.4. Competitor Analysis

For the analysis of the competition, three free tools were used Serpstat, SpyFu and Semrush, tools that are used mainly to analyze data related to the field of SEO, that is, web positioning, as well as to develop strategies to get backlinks to a website or build advertising. It is also very useful to detect and analyze the competition.

			SERPSTAT			SpyFu			SEMRUSH	
Comp	Competencies		user traffic	keywords	number of visitors	user traffic	keywords	number of visitors	user traffic	keywords
Footlose	FOOTLOOSE	0.165 - 68.452 Average number of views per month: 23	1200 - 7300 Average traffic per month: 4800	Footlose shoes sneakers Pasarela vizzano	2 - 73 Average number of views per month: 26	800 - 6500 Average traffic per month: 4300	adidas f36483 F35040 rebook fsm dmx talla 40 shoes by catalog	126 per month	2962 per month	bata.pe peru bata bata shoes bata leather men's clothing
Platanitos	% platanitos.com	273.117 - 349.093 Average number of views per month: 296	12575 - 12700 Average traffic per month: 12636	platanitos nike air force sneakers fila sandals skechers peru	200 - 500 Average number of views per month: 350	10000 - 15000 Average traffic per month: 12000	Sports footwear wallets platanitos women's clothing dress shoes	440 per month	18000 per month	platanitos platanitos boots for women platanitos boutique peru platanitos com pe lima sandals for women
Estilos	estilos	60.494 - 88.548 Average number of views per month: 72	223760 - 514314 Average traffic per month: 399000	estilos arequipa estilos store estilos store in lima estilos catalog styles srl dress styles data polo shirts	50 - 75 Average number of views per month: 63	22000 - 55000 Average traffic per month: 31500	women's clothing	31 per month	382009 per month	boots styles de arequipa styles peru lima styles royal regiment perfume
Bata	Bata	0.098 - 11.772 Average number of views per month 5	300 - 80274 Average traffic per month: 23700	Shoes dress shoes sneakers star weinbrenner tiger sneakers	1 - 15 Average number of views per month: 8	50000 - 80000 Average traffic per month: 65000	ankle boots dress shoes men shoes women shoes	3 per month	2697 per month	women's ankle boots gummers bubbles peru store boots and ankle boots gummers bubble shoes women's shoes
Calimodstore		8.379 - 14-868 Average number of views per month: 10	29812 - 65919 Average traffic per month: 49000	calimod shoes calimod ipanema calimod store calimod peru men's nautical shoes men's boots lima	5 - 10 Average number of views per month: 7	20000 - 70000	shoes catalog criptaculous calendar	6 per month	61000 per month	barbie by chabely marcabia jojo siwa backpack leather shoe renovator

Figure 8: Competitor Analysis

3.5. Keyword Search:

For the keyword search, 3 free tools widely used in SEO positioning were used, Ubersuggest, WordTracker and Google Trens. These help to obtain reliable keywords, saving time and increasing the rankings in search engines.

			Ubersuggest			Word Tracker			"Google Trends"			
D	Keyword	Volume	Use of Competition	State	Volume	Use of Competition	State	Volume	Use of Competition	State		Final Statu
1	Shoes	18100	High	Approved	35771	High	Approved	60	High	Approved	26935,5	Approvent
2	Dress Shoes	5400	High	Approved	10333	Medium	Approved :	20	Low	and the second second	7866,5	Approved
3	Ankle Boots	3600	Medium	Approved	6022	Medium	Approved	35	Low	Approved.	4811	Approved
4	fomen's shoer	720	High	Address of	1788	Medium	Approved	25	Low	Approved	1254	Approved
5	analogs Shoel	90	High	Departure.	223	LOW		40	LOW	State and	156,5	
2	e boots for wo	1900	Low	Approved	1031	LOW	Approved	30	High	the second	1465,5	Approved
8	is and ainkle b	90	Medium	the sector is	1859	LOW		45	High	Approved	\$74,5	
30	Leather Boots	\$20	High	Support and	9798	High	Approved :		Low	Same and	5059	Approved
11	nen's dress sh	190	High .	Reported.	1.14			-20	Low	STREET, STREET	390	
15	noes by catalo	70	Low	Approved				0.80	Low	Statute of	70	Approved
26	luandayo Shoe	0	Low	Building to the local division of the local	1.4.1	1 6 M		310	Data	Summer of	0.	
37	leather shoes	.70	Medium	Approved	268	LOW		sin	Deta	discussion of	569	Approved
28	Vomen's Shoe	50	LOw	Approved	247	LOW		2/11	Dote	A REAL PROPERTY.	348,5	Approved
35	m's high heel	110	High	and subject and	(1993) 	1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 -		sin	Data	A Property lies	130	
20	Elegant Boots	30	Low	Dejected	384	Low		sin	Deta	and in the other	197	
22	Fashion Shoes	720	Medium	Approved	69619	Medium	Approved	30	1	Approved	35169,5	Approved
22	shien for wom	90	LOW	Approved	2919	Medium	Approved	49	1.4.7	Sector Sector Sector	1504.5	Approved
23	holesale Shoe	20	High	STREET, DOIL	2458	Lów	Approved	100	Data	and the second s	1229	Approved
24	Fashion Store	.90	Low	Approved	2151	Medium	Approved	24	19 J	Support of the local division of the local d	1120.5	Approvers
25	Party shoes	110	Low	Approved	\$752	Medium	Approvent	0.		Sectors 1	931	Approved
26	Depart Shoes	340	LOW	Approved	6873	Medium.	Approved	-25		Approved	3506,5	Approved
27	ing shoes for w	20	Low	No include	e			ain.	Data	And in case of	10	
28	ligh Heel Shoe	40	High	ARCTOR OF	350	LOW		\$10	Data	ALC: NOT	200	
29	rted Leather 5	0	Low	Second State	+	4		sin	Deta	Contraction in the	0	
				-		Weportance	Index.					

Figure 9: Keyword search

3.6. SEO web optimization:

A specific meta-tag was implemented to optimize and "place" our web application in some context or trend theme, however, these meta-tags are optional and of a medium influencing nature, which means that their use does not guarantee the first places of positioning.

DOCTVPE html	
<html lang="en"> <bmad></bmad></html>	
<pre>course charset="UTF-8"></pre>	
Sector char sec= off=0.9	
<title>Zapatos Moda Guiss</title>	
<pre><meta content="L</pre></td><td>a Empresa Moda Guiss empodera tu estilo,</td></tr><tr><td>ofrece los mejores zapatos de vestir a</td><td>la moda,los mejores calzados de temporada." name="description"/></pre>	
<pre><meta <="" contenet="zap</pre></td><td>oatos, zapatos de vestir, zapatos de moda, botines, zapa</td></tr><tr><td>os para mujer, botines para mujeres, bo</td><td>otas de cuero, zapatos por catalogo, calzados de cuero,</td></tr><tr><td>alzados para mujer, moda para mujeres,</td><td></td></tr><tr><td>calzados al por mayor, tienda de moda,</td><td>zapatos para fiesta, zapatos elegantes/" name="keywords" td=""/></pre>	
<meta content="widt</td><td>h=device-width, initial-scale=1.0" name="viewport"/>	
cmeta name="viewport" content="widt	h=device-width, initial-scale=1">
<pre>cmeta property="og:url"</pre>	content="https://www.modaguiss.com/" />
<pre>cmetin property="og:type"</pre>	content="article" />
<pre><metm <="" pre="" property="og:title"></metm></pre>	content="ModaGuiss Calzados y Zapatos Huancayo" /
<pre><metm <="" pre="" property="og:description"></metm></pre>	content=" últimas novedades de nuestro catálogo!" /
<pre>cmutu.property="og:image"</pre>	content="https://i.imgur.com/BeiImys.png" />
<pre>cmeta name="title" content="Zapatos</pre>	y Calzados Huancayo"/>
<pre><multi content="Wilson</pre></td><td>lazo tapia" name="author"></multi></pre>	
<pre><meta-name="copyright" content="Mod</pre></td><td>la Guiss, Europerú"></meta-name="copyright"></pre>	
<pre><muta content<="" http-equiv="language" pre=""></muta></pre>	

Figure 10: SEO web optimization code

3.7. Domain Authority:

For domain authority, the sitemap.xml, robots.txt, image-sitemap.xml and BingDiteAuth.xml were made, code to give authority to your domain and this in turn can be quickly recognized by google.

Figure 11: sitemap.xml

```
User-Agent: *
Disallow: /top.php
User-agent: Googlebot-news
Allow:
User-agent: Googlebot-Image
Allow:
Disallow: /top.php
User-agent: Mediapartners-Google
Allow:
User-agent: Googlebot
Disallow: /top.php
Sitemap: https://www.modaguiss.com/sitemap.xml
```

Figure 12: robots.txt

```
<?xml version="1.0" encoding="UTF-8"?>
<urlset
    xmlns="http://www.sitemaps.org/schemas/sitemap/0.9"
    xmlns: image="http://www.google.com/schemas/sitemap-image/1.1">
</urlset>
```

Figure 13: image-sitemap.xml

```
<?xml version="1.0"?>
<users>
<user>F5A5604B7744EDF8CECD638F85B630C1</user>
</users>
```

Figure 14: BingDiteAuth.xml

3.8. Content Strategy:

In the content strategies, a google Lighthouse extension was used, this tool offers you help and recommendations to reach 100% in SEO, such as changing the image format, correcting programming errors, among others.



Figure 15: SEO positioning in the Web app

3.8. Social Media Strategy:

In the social media strategies, Facebook was used, a powerful marketing tool as well as a good tool for SEO positioning. The code for connecting the social media with the web page can be seen in Figure 10.

4. Reports and Improvements:

The tables show how the SEO methodology allows you a high probability of positioning your website compared to not using it.

N° Tests 1 month	Position without SEO	Now with optimization SEO	N° Tests 1 month	Position without SEO	Now with optimization SEO
1	-	80.5	16	154	11
2	-	50.5	17	136	8
3	-	74.5	18	137.5	8
4	-	45	19	137.5	38
5	-	32	20	151	24.5
6	219	68	21	151	34
7	170	41.5	22	151	32
8	170	26	23	189	21
9	201	26.5	24	189	35
10	201.5	44	25	162	35
11	201	52	26	154	3
12	-	56	27	154	11
13	-	16	28	191	32
14	-	23.5	29	191	46
15	154	11	30	191	31

Figure 16: Entire results of search engine rankings

N°	Defined keyword	The KeyWord is filtered in the queries of search engines	Now with SEO optimization
1	Shoes	No	No
2	Dress Shoes	No	yes
3	Stylish shoes	No	No
4	Ankle boots	yes	yes
5	Shoes for woman	yes	yes
6	Ankle boots for women	No	No

7	Leather boots	No	yes
8	Huancayo footwear	No	yes
9	Leather Footwear	No	No
10	Women's footwear	No	No
11	Shoes for woman	No	yes
13	Fashion store	No	No
14	Elegant shoes	No	No
15	Fashion guiss	No	yes
16	Guiss	No	yes
17	Shoes in Huancayo	No	yes
18	Huancayo shoes	No	yes
19	Leather shoes	yes	yes
		Average 15.78%	Average
		Are indexed	57.89% Are indexed
		16 No / 3 yes	8 No / 11 yes

Figure 17: Entire results of search engine rankings

The KeyWord is filtered in the queries of search engines	Now with optimization SEO
Average 15.78% Are indexed	Average 57.89% Are indexed
16 No / 3 yes	8 No / 11 yes
Positioning without SEO	Positioning with SEO
Average Position: 172.70	Average Position: 32.5
all the results position the moda guiss website among the page 13 to 19	All the results position the moda guiss web between page 1 to 5 of google

Figure 18: Entire results of search engine rankings

5. References

- [1] MORÁGUEZ BERGUES, M. y PERURENA CANCIO, L. Propuesta de factores a considerar en el posicionamiento de los sitios web de salud (Proposal of Factors to be considered for positioning of Health Websites). [En línea]. GECONTEC: Revista Internacional de Gestión del Conocimiento y la Tecnología, Vol 2, P10-30. 2014. [Fecha de consulta: 06 de Diciembre 2020]. Disponible en: https://www.upo.es/revistas/index.php/gecontec/article/view/960
- [2] CODINA, L. SEO: Introducción a la disciplina del posicionamiento en buscadores. [En línea]. Jorge Serrano-Cobos. Ediotiral UOC,2015. Colección EPI Scholar n. 3, P200. Revista Española De Documentación Científica. 2016. [Fecha de consulta: 06 de Diciembre 2020] ISBN 978-84-9064-956-5. Disponible en:

http://redc.revistas.csic.es/index.php/redc/article/view/952

- [3] GONZALES LLINARES, Javier, FONT JULIÁN, Cristina I. y ORDUÑA MALEA, Enrique. Universidades en Google: hacia un modelo de análisis multinivel del posicionamiento web académico. [En línea]. Revista Española de Documentación Científica, Vol 43. 2020 [Fecha de consulta: 06 de Diciembre 2020]. Disponible en: https://doi.org/10.3989/redc.2020.2.1691
- [4] INJANTE ORÉ, Richard y MAURICIO, David. Método para recomendar factores de posicionamiento personalizados en el motor de búsqueda de Google. [En línea]. CYBERTESIS. Universidad Nacional Mayor de San Marcos. 2020. [Fecha de consulta: 06 de Diciembre 2020]. Disponible en: https://hdl.handle.net/20.500.12672/11732