Web page user interface development for business shoe stores

Gissela Gamboa · Jonathan Toapanta

Abstract: The user interface for web pages is very important and indispensable for many companies that want to thrive. It offers the perspective of creating designs for any type of company with a single software that allows coding and coloring web pages. The objective of this work is to meet the needs of the company owner with a design created in Notepad++ that is simple and freely available for users who wish to purchase the product. It involves simple manipulation and non-bold colors, as well as standard fonts that are visible to the customer. A satisfactory result was obtained through a survey conducted with people from the Giker company. We also designed the web page with four buttons that display each mentioned piece of information. Finally, we manage to meet the company's requested needs, achieving the appropriate design for user comfort.

Keywords User interface · Web page · Companies.

1 Introduction

Companies have been innovating within the technology field, enabling the creation of simple publications for everyone. It is essential that there are always means of communication such as websites and mobile applications available to those who are interested. The creation of a website is the primary tool for disseminating company information and making it freely accessible to the public.

Thus, companies tend to improve the design of their web pages with the aim of meeting existing needs. This generates the necessary recommendations to achieve a user interface that is easy to use, with attractive and practical elements to fulfill its purpose [1]. The design of the user interface is challenging and costly, which is why automated generation may become increasingly important in the future [2]. The user interfaces are designed to avoid eye problems, including visual fatigue, tired eyes, irritation, redness, and blurred vision [3]. A user interface includes software and tools that help developers design and implement the user interface. These tools have had a significant impact on today's developers, as practically all modern applications are built using some form of user interface tool [4]. The execution of a user interface is primarily automated by existing tools, but the design remains a manual task [5].

This interface incorporates a wide range of functionalities aimed at achieving optimal system performance, proper management of available robotic resources in the environment, and providing the user with real-time information about everything happening in reality [6]. Colors and visual design are the primary languages for expressing emotions and the content of a web page. The design of a web page is crucial based on user preferences. The title, image, colors, and structure of a website affect the design style of its visual interface [7]. Software is designed to provide primarily web pages and designs that offer markup code, screenshots, and web tags [8]. Cyber-physical systems and the Internet of Things represent two different levels of vertical digital integration. The integration of websites with devices connected to the Internet of Things has required the creation of new designs and development strategies for web pages, where websites are designed with the permutations of smart devices in mind [9].

Today, companies acquire attractive websites; the creation of user interfaces involves a complex process that includes various actors such as project managers, designers, and developers. It streamlines the process, which can democratize access to the web for non-experts [10]. The effectiveness of using websites is strongly dependent on their ergonomic qualities, which directly impact the business. This is particularly significant when it comes to e-Commerce, especially for lesser-known companies [11].

Currently, the use of services through the Internet has become increasingly essential in people's lives. However, the low usage of websites by individuals suggests that their interfaces do not hinder the cognitive and

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physical abilities of people. To address this inclusive challenge, a guide for web interface design was developed based on a review of the literature and organized into the following categories: visualization, navigation, communication, cognitive support, and user security [12].

In related work, a new web application development platform is found that uses declarative programming and the business process. A business process is defined that can efficiently and flexibly organize the program process [13]. The structure of the proposed platform consists of four essential components: the business process, the user interface engine. The business process defines the program flow and provides both the business logic and the user interaction logic for a web application [13]. In other research, the user interface is described in web pages for businesses, where an XML configuration component was used [14] to build HTML pages using a generic interface, which could also organize widgets or build textual representations [14].

Another study focused on the development of a color-based classification method for websites. In that study, they present methods for the analysis of websites of companies based on visual information using their color-based classification method for the web [15]. Furthermore, other research has also been conducted on the creation of a web page, resulting in the need to make it as dynamic and user-friendly as possible to attract a larger user interface when visiting the site and generate more business advertising, while ensuring that the information provided there is clear [16].

This work presents a proposal for designing a sales user interface within a company, using a website and Notepad++ software. The document is structured into five sections: Section 1 provides an introduction, Section 2 contains methods and materials, Section 3 presents the research results, Section 4 includes the discussion, and Section 5 offers the conclusions.

2 Materials and Methods

It is necessary to have a computer for research and to download the appropriate software in order to create a user interface design for web pages for businesses. Additionally, programming within the software using a basic language is required, which allows us to work on our design. The website will feature a navigation menu design that includes images of the company and basic information. These elements can be displayed quickly by simply clicking on the desired button.

In order to validate our website, a link to the website was sent to three individuals from the company 'Giker' so that they can assess its functionality for one week. Based on the feedback from the company, we will be able to determine the pricing for the website design. Table 1 shows the five usability test questions [17], which will be evaluated on a scale of 1-5. One indicates 'completely disagree,' two is 'disagree,' three is 'neutral,' four is 'agree,' and finally, five is 'completely agree.'

Table 1 Questions delivered to the users

Question
Do I think I would like to use this system frequently?
Did I think the system was easy to use?
Did I feel very confident using the system?
Did I find the system very complicated to use?
Did I need to learn many things before starting with this system?

2.1 Web-page requirements

The requirements considered for the web page design can be formulated as: it should have an understandable design; the page's color should be suitable for the user's view; the font size should be neither too large nor too small; it should use a standard font; it should contain concise, summarized, and understandable information about the product. Finally, the navigation menu should have sections for viewing and purchasing the product.

Table 2 Company necessities

Necessities	Solution
Online Sales Application	Webpage
Company Information	Webpage window with the complete company information
Product Description	Category Section displaying the product with images.
Payment Methods	Contact Section where users can find account numbers
Product Delivery Method	Through the contact numbers, send the home address where the product will be delivered along with your personal information and a photo of the payment receipt.

2.2 Web Page Design

This website is designed through coding, where on the main page there is a bar with four buttons. Two of them lead to another window, and the remaining button displays two options that will take you to another window based on your selection. It will also include images of the company.

The first button provides information about the company, where you will find images depicting the company's history. On the other hand, we have the 'catalog' button, which will take you to a new page displaying shoe models, sizes, and prices based on your selection
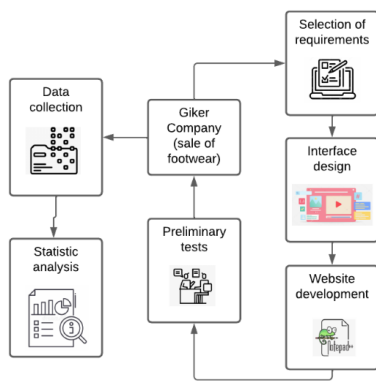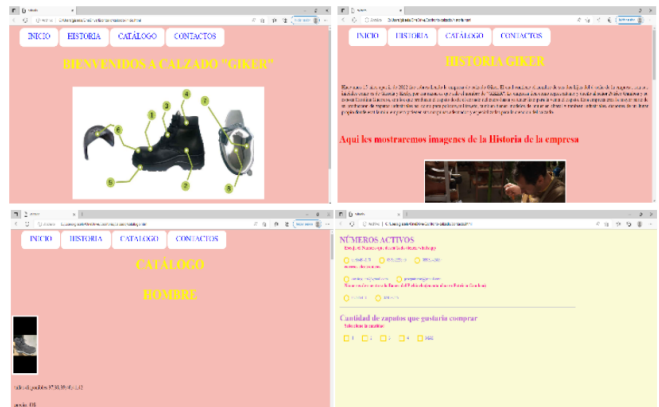
Fig. 1 Webpage diagram

Fig. 2 Web Page Design (Home, History, Catalog).

Fig. 3 WebPage Development

is a good website and suitable for the company. These individuals are employees who have been with the company for more than three years.

Table 3 Participants

Work Area	Age	Work Experience
Accountant	45	4
Manager	30	3
Saleswoman	39	2

2.5 Data Collection

The company is located in Ambato and is engaged in the manufacturing of footwear for both men and women. It has employees and the appropriate machinery for the production of shoes. Giker footwear company began to excel. The name 'GIKER' is derived from the initials of the owner's two daughters, Gissela and Kerly. The company is represented and owned by Patricio Gamboa and his wife, Carolina Guerrero, who oversee the shoe production from leather cutting to the finished product ready for sale. This company primarily produces industrial footwear, including shoes for police and military personnel. They also offer women's models in patent leather and industrial styles. They have their own facility where the mini-company is located, complete with specialized machines for shoe manufacturing.

2.6 Website Testing

In Table 3, we present the tests performed along with their errors and relevant solutions. The first test, regarding user-friendliness, revealed an issue with strong colors that could strain the user's eyes. We quickly addressed this by modifying the design style. In terms

for men or women. Finally, we have the 'contacts' button, which opens a section with an email address where people can reach out for any issues or questions. In addition, contact numbers will be provided.

2.3 Web Page Development

"Notepad++ software was used to design the user interface for Web pages for businesses. We employed a dynamic and visually appealing design method to make it easier for customers to access and navigate the website. Figure 1 illustrates the development of each section that the web page will feature.

2.4 Participants

A link to the website was sent to three Giker company employees, who had the opportunity to test the website for one week. They will be the ones to assess whether it

of response time, we encountered a slowness problem, which we resolved by reviewing the code. Regarding image sharpness, we identified pixel issues that affected image clarity. To rectify this, we improved the image format. Finally, due to a complex payment process, we changed the payment method to something safer and more practical.

Table 4 Experiments

Tests Conducted	Errors	Solutions
User-Friendly interface	Strong colors	Modify style
Response Time	Slow	Check Code
Images resolution	Pixel errors	Improve Image Format
Payment Methods	Complicated	Change Payment Method

3 Results

The website has been successfully designed, and its most important feature is that it makes it easy for users to access a significant amount of information. Businesses typically create their websites to serve as a communication source for customers interested in the entity. This research ensured that there are categorized items, such as the 'home' section, where you can find some information about what the entity is about and what services and products it offers. Finally, in Figure 4, we see a person testing the design of the website. The result obtained, in relation to the outlined methodology, consists of four sections, with approval from the Giker company.
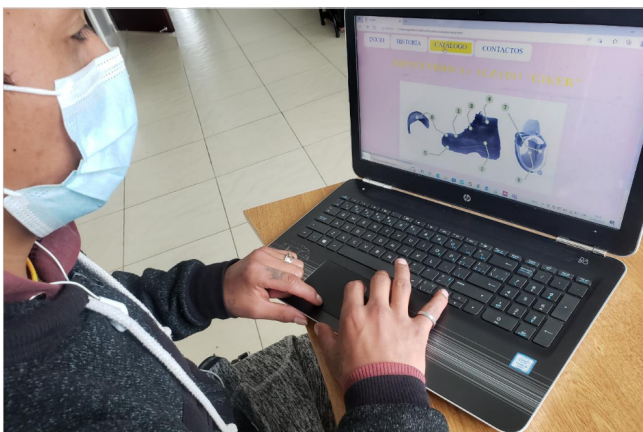

Fig. 4 Completed Website

3.1 Collected Data

For this survey, the following questions were asked to determine if the creation of the website is optimal. This helps to innovate or correct potential design errors because the product should be effective and not present

the same problems that exist on websites that are not user-friendly.

3.2 Usability

We obtained satisfactory results with the company's website design. The website is suitable for users who are new to comparing products online with the necessary security. This page is effective when navigating within the website, as it consists of buttons that quickly lead to other sections. The usability rating obtained is 72.5/100. According to studies conducted on websites, this work is above the established rating. Therefore, we have achieved an appropriate level of acceptance of usability.
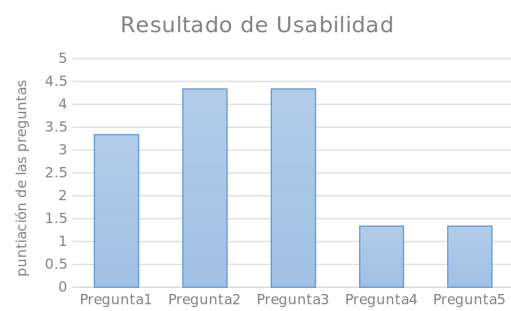

Fig. 5 Usability Result

4 Discussion

In this work, the usability of a website was determined, which indicates the use of the website as a user-friendly and easy-to-use website for any user. Similarly, [13] also indicates user acceptance of the website, which is easy to manage and manipulate. The platform's structure includes the business process and the user interface engine. Based on sales, the web page can efficiently generate each task, which facilitates the use of the website. We can see similarities in both of the two activities that involve an efficient and flexible business process. In addition, [14] mentions a design aspect, since the user interface on corporate web pages uses an XML configuration component. Similarly, for building HTML pages, it employs a generic interface, which is similar to this proposal based on HTML pages. Consequently, this work also received good acceptance, similar to that of the previous one.

Compared to [15], it was also well received in the business context because it developed a color-based classification method for web pages, improving user visualization. Contrasting with our design proposal, it relies on appropriate colors for user visibility and includes a

sales link for users to purchase products in a more colorful manner, which aligns with the work's focus. Finally, [16] also obtained an acceptance rate of 100% for all projects because they aim to create a more dynamic and publicity-oriented website for businesses, emphasizing clarity and user-friendliness. In conclusion, we have a successful track record in sales as we strive to increase advertising within businesses.

Table 5 Comparative Results

Attributes	[13]	[14]	[15]	[16]
Efficiency	94%	95%	70%	95%
Satisfaction	92%	91%	88%	89%
Errors	9%	9%	45%	10%
Learning capacity	89%	94%	89%	96%
Acceptance	90%	97%	70%	99%

5 Conclusions

The work carried out for the design of web pages has proven to be effective as it improves the user interface. Easy access to the digital platforms of each business was optimally executed, making it dynamic and providing all kinds of information required about the entity. The use of the software was developed using Notepad++. It offers three information options, including a bit of the company's history, products, and contact information for inquiries. The company location is also provided.

In comparison with other researched works, we conclude that we all have a common thread of work to follow to ensure that the web page is user-friendly. I conducted an analysis of specific questions that were posed to three people from the company. In future work, the goal is to use this website with more users and modify the interface design for a better user experience and a more impressive and recommended display.

Conflict of interest

The authors declare that they have no conflict of interest.

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