



UTM
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Video Games Website Analysis Using Google Lighthouse

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Abstract. In recent decades, the significance and societal influence of video games have grown exponentially. Video games have a significant influence on how we use our free time, having evolved from its modest origins in arcades to become the most popular form of entertainment and cultural expression today. The open-source automated program Google Lighthouse is a valuable ally for evaluating and improving the quality of web pages. Its many features include accessibility, search engine optimization (SEO), and more, going beyond performance measurement. The goal of this project is to examine video game websites using Lighthouse in order to find insights that will be useful to both players and creators

Keywords: Video games, Analysis, Google Lighthouse, Website

1. Introduction

Video game is any type of game where the player interacts with a user interface to produce visual output on a display device. A reward system, like a score, may be present in video games and is dependent on the player completing objectives inside the game. Some examples of popular video games are minecraft, roblox and many others. We can play video games by ourselves or with our friends. Video games also exist in online or offline mode [[Video game. \(n.d.\)](#)].

2. Literature Review

2.1 Websites

A webpage is an assortment of files and associated materials that may be accessed via a domain name on the Internet and the World Wide Web. Arranged around a "homepage" (also known as a "landing page"), it is a leading platform for mass media and mass communication [[Ray, M. \(n.d.\)](#)]. Some websites are used to serve different purposes such as delivering information, helping people to do the work, and other things. Games also have gone digitally from board games to video games.

2.2 Playstation

A division of Sony, Sony Interactive Entertainment is the business that invented the Playstation console game. Ken Kutaragi and Sony Japan created the Playstation, with assistance from the United Kingdom. Gran Turismo and Final Fantasy are only two of the video game brands that were developed specifically for the PlayStation, which made its debut in November 1995 [[PlayStation \(console\). \(n.d.\)](#)].

The first strength is, the value of the video games is displayed through the summary. Thus, users can know the price immediately and decide whether to

buy it or not rather than clicking on the video games just to discover that there is no price tag as shown on the left.

On the other hand, our analysis of these websites reveals several flaws. The first is that, on some devices, the image displayed on the page does not appear natural since it is not in the right ratio. The proper aspect ratio should be used by the developers. Additionally, there are many iterations of the same game being advertised here. Since new buyers aren't interested in the other game versions, developers should put the original versions of their titles on the site instead of the updated versions.

2.3 Nintendo

Nintendo Co., Ltd. is a renowned developer, producer, and marketer of home entertainment products, including consoles like Nintendo Wii and Nintendo DS, along with software for gaming devices. Established in 1889 by Fusajiro Yamauchi in Kyoto, Japan, Nintendo also offers international consumer electronics and traditional Japanese games like trump cards and Karuta.

The website excels in installability, supported by its app manifest and service worker. Leveraging Progressive Web App features like push notifications, offline mode, and add-to-homescreen is made possible by the service worker technology. Additionally, the content is appropriately scaled for the viewport, ensuring optimization for mobile displays. Besides that, we also discover several weaknesses from this website. Firstly, this website serves images with low resolution. Image natural dimensions should be proportional to the display size and the pixel ratio to maximize image clarity.



Figure 1: Nintendo's website images

2.4 XBOX

Xbox, established by Microsoft, is a leading video game business. Since its inception in 2001, it has evolved through generations including Xbox 360, Xbox One, and Xbox Series X/S. Originally focused on gaming, these consoles now

offer multimedia functions like streaming and web surfing. Xbox Live, Microsoft's online gaming platform, allows users to download games, interact with others, and access additional content. The brand has expanded to include Xbox Cloud Gaming for streaming to compatible devices and Xbox Game Pass, offering a monthly subscription for access to a library of games.[[Xbox. \(n.d.\)](#)].

The Xbox website has a sleek and modern design, offering users a visually appealing experience that enhances navigation and information retrieval. Additionally, the website offers a lot of content, including trailers, screenshots, and detailed descriptions of Xbox products, services, and games, improving the user experience and providing comprehensive information.[[7 Qualities of a Great Website. \(n.d.\)](#)].

While Malaysian visitors to the Xbox website can select from languages such as English (MY), there are several issues with localization that may negatively impact the entire experience. The discrepancies in the user experience between translated versions and the main website may annoy or dissatisfied users who anticipate consistent functionality and information across all language options [[9 Common Website Problems and How to Fix Them.](#)].

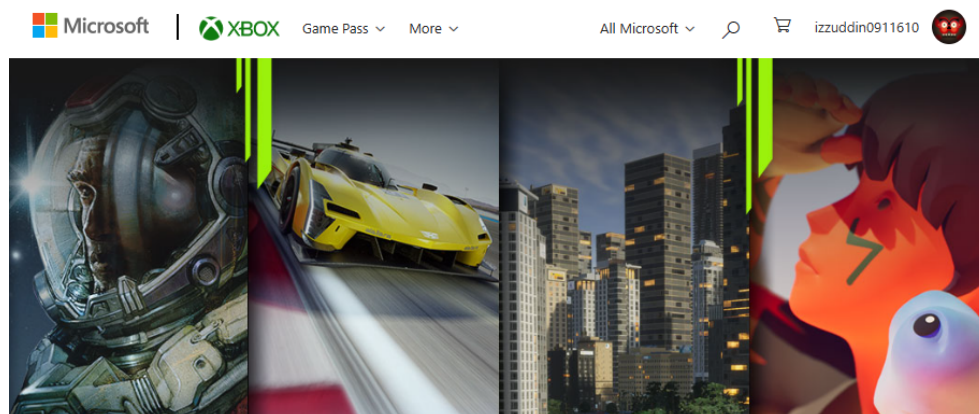


Figure 2: Microsoft XBOX Home Page

2.5 Epic Games

Epic games is a famous video game and software development company, they are famous for games such as Fortnite, Rocket league and Gears of War. The company was established in 1991 and has been a key player in the gaming industry as they offer the widely used Unreal Engine for game development. The company is known for its innovation, frequently updating games with new content and supporting developers through initiatives like Unreal Engine grants [[epic games wikipedia.](#)].

The Epic Games Store homepage highlights games, underscoring its role as a gaming platform. Displaying user reviews and ratings directly on the store page enhances transparency and aids customers in making informed purchasing

decisions. Integration with Epic Games accounts streamlines profile management and grants swift access to the user's library of purchased games, contributing to a seamless and user-friendly experience overall. [[7 Qualities of a Great Website. \(n.d.\).](#)]

Users might struggle with the interface of the Epic Games Store due to perceived clutter. Multiple sections and advertising banners competing for attention can overwhelm users. A visually busy atmosphere, filled with promotional banners and sections, may confuse users and hinder effective interaction with the platform. [[9 Common Website Problems and How to Fix Them.](#)].

2.6 Gameloft

Leading the gaming industry since 1999, Gameloft is a well-known developer and publisher. Millions of players worldwide continuously receive high-quality and engaging experiences from Gameloft due to its extensive portfolio that spans all genres. [[Gameloft Brand. \(n.d.\).](#)]

The Gameloft website boasts several strengths that enhance user experience. Firstly, its solid visual design, enriched by Gameloft's expertise in game creation and design, features captivating multimedia components and visuals, reinforcing the brand's identity. Secondly, the website offers easy navigation with intuitive menus, facilitating users in finding desired products or information effortlessly. This clear navigation encourages exploration of the site's content, enhancing usability. Lastly, the website likely incorporates a responsive design, ensuring accessibility across various devices, enabling consistent browsing experiences for users.

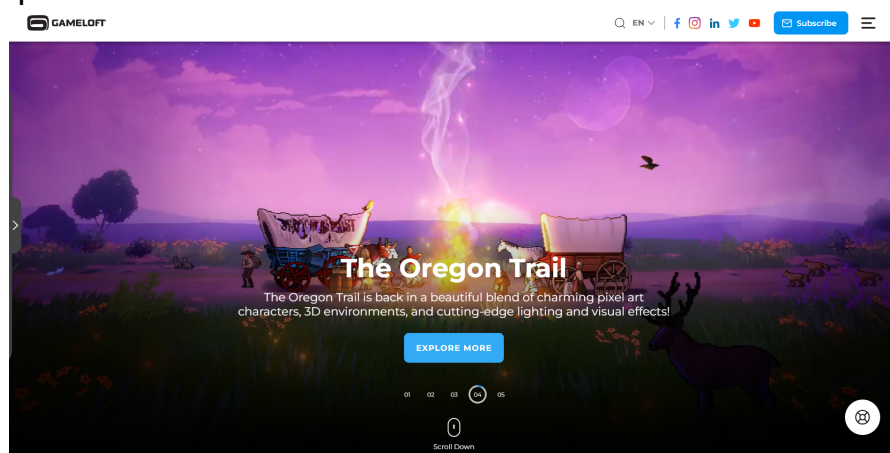


Figure 3 : Gameloft's website shows solid visual design

The Gameloft website has flaws as well. The first weakness in this website's design is suboptimal page speed optimization. Gameloft's website still has some pages or parts that perform poorly. Next, This website lacks multilingual support as this website only supports English and French languages

and could be a bit of a hassle for users who don't speak that provided language in their website.

3. Google Lighthouse

An open source program called Lighthouse is used to conduct technical website audits. Google built the tool, which examines a URL's performance, accessibility, best practices, progressive web app, and search engine optimization. [[Google Lighthouse – SEO Glossary. \(n.d.\)](#)]

3.1 Method Introduction

Lighthouse offers audits in five optimization categories: Progressive Web Apps (PWA), SEO, Best Practices, Performance, and Accessibility [[Google Lighthouse: What It Is & How to Use It.](#)]. The score is given between 0 to 100 according to the metrics that have been analyzed. Customers can choose to examine one, several, or all five categories based on the features of their website that they would like to examine.

The first category, performance. In this audit, this extension will measure the time taken for a website to load and how quickly users can access it. The next category, accessibility. This test analyzes how well people use the assistive technology from your website. It evaluates how easily users of assistive devices can navigate your website. In Addition, the best practices, Lighthouse will check whether the page is built on the modern standards of web development.

The next category is testing for technical SEO. Technical SEO is about improving your website to make it easier for search engines to find, understand and store your content.[[What Is Technical SEO? Basics and Best Practice](#)]. Last but not least lighthouse will check the (PWA) for validation whether the web application uses modern web capabilities to provide an optimal user experience. [[Google Lighthouse: What It Is & How to Use It.](#)].

3.2 Performance Analysis

Video Games	Performance(%)	Accessibility(%)	SEO(%)	Best Practices(%)
Playstation	26	81	75	48
Nintendo	32	91	93	90
XBOX	4	96	77	52
Epic Games	29	85	74	79
Gameloft	70	66	100	78

In the Performance Analysis from Google Lighthouse, each website shows varying results across different elements. The Gameloft website stands out with the highest performance score at 70%, boasting a Total Blocking Time of 40ms for a smooth user experience. For Accessibility, the XBOX website leads, offering easy navigation for users. Gameloft also excels in Search Engine Optimization (SEO) with a perfect 100% score, indicating optimized elements according to best practices. Lastly, Nintendo earns the highest score in Best Practices with 90%, showcasing adherence to recommended web development standards.

4. Conclusion

In conclusion, analysis of gaming websites such as PlayStation, Nintendo, Xbox, Epic Games and Gameloft reveals both strengths and weaknesses in design, functionality, and user experience. These platforms play a crucial role in providing gamers with access to information, game purchases, and community engagement.

These websites offer compelling multimedia content, clear navigation, and user-friendly interfaces, enhancing user immersion and satisfaction. Integration with user accounts and personalized features like game recommendations and reviews further enhance engagement. However, weaknesses such as page speed optimization, limited language support, and inconsistent brand messaging can detract from the overall user experience and accessibility.

Overall, while these gaming websites excel in content presentation, engagement, and technical functionality, there is room for improvement in areas like optimization, localization, and user interface design. Addressing these shortcomings can bolster gaming companies' positions in the industry, enhance community engagement, and elevate user experience.