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Build an E-Commerce Platform

Jeet Dhaduk, Hina Dudharejiya

Department of Computer Science & Engineering, Parul University, Vadodara, Gujarat, India

(Mentor) Asst. Professor, Department of Computer Science & Engineering, Parul University, Vadodara, Gujarat, India

ABSTRACT: One of the new business booms is e-commerce. Electronic commerce is referred to as e-commerce. E-commerce, or electronic commerce, is the buying and selling of goods and services as well as the transfer of funds or data via an electronic network, most commonly the Internet. Electronic commerce, or e-commerce, is a paradigm shift that affects both consumers and marketers. Instead, e-commerce is more than just a means of enhancing current business operations. It is bringing about a radical shift away from traditional business practices. Globally, this fundamental shift in business strategy is booming, and India is no exception. E-commerce has expanded thanks to widespread internet usage, and start-ups in particular have been using this alternate mode to set themselves apart from the competition.

I. INTRODUCTION

In recent years, e-commerce has become one of the most preferred methods for conducting transactions. Across the globe, revenue from online trade has been steadily increasing. Between 2014 and 2017, it nearly doubled, reaching approximately 2.3 trillion US dollars. Projections indicate that by 2021, this figure could rise to 4.88 trillion US dollars [1].

The success of online sales depends on multiple factors, with web-based platforms playing a crucial role in their execution. Modern digital marketing tools are continuously evolving, transforming e-commerce websites from simple purchasing platforms into comprehensive systems that assist and guide consumers throughout their shopping journey. To remain competitive and maximize their online revenue, retailers are constantly seeking new methods to assess the effectiveness of their e-commerce websites. An activity is considered effective when it optimally achieves the desired outcomes [2].

This report introduces a methodology for assessing e-commerce websites by utilizing a set of indicators that monitor performance and identify both strengths and areas for improvement in online stores.

II. E-COMMERCE WEBSITE EVALUATION

Evaluation of e-commerce websites has a major impact on sales growth and the generation of incomes from online marketing. It is part of the overall E-commerce analytics process, which includes all the activities for analysis of systematic data that are performed to improve the business results of companies that sell online [3]. Web site evaluation should be planned in detail and then used as fully as possible. The following main phases of the e-commerce web site analysis process can be listed:

- Identification of the business objectives of the analysis;
- Selection of the criteria for the analysis;
- Collecting and integrating data;
- Evaluation according to the selected criteria;
- Forming reports and analyses of the obtained results;
- Development of a plan for making improvements.

Choosing the most appropriate criteria for analysis is the most crucial part of the overall process of analyzing the e-commerce website. Researchers have used a host of criteria to analyze e-commerce websites. For example, in this article, Mark Hayes, has a study that examined 67 indicators for evaluating eCommerce with the following categories: Sales, Marketing, Customer Service, Manufacturing and Project Management [4]. Oracle suggests getting analysis of



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the e-commerce platform by the following areas: Scalability, Product Catalog, Business User Control, Search, Agility, Reporting and Analytics, Standards, Integration, Interoperability, Synergy [5]. Other researchers have used the OSSpal methodology, which examines both quantitative and qualitative software assessment measures within seven categories: Functionality, Operational Software Characteristics, Support and Service, Documentation, Community and Adoption, Development Process [6]. Bezes considers three primary objectives in measuring websites which consider them as: information systems, communication channels and retailing channels [7]. According to Davidaciene, the criteria which represent the five most important features are: easy to use, navigation, security guarantee, real time help, and information [8]

All these studies have many common aspects regarding e-shop analyses. Each of the mentioned researchers prioritizes different criteria because they have set a specific task for themselves, such as evaluating e-shops in a particular area, researching an activityrelated aspect, such as consumer satisfaction, use and adaptation of an existing evaluation methodology. We believe that in order to understand the strengths and weaknesses of an e-commerce web site, it is essential to analyze key indicators, such as those that result from quantitative and qualitative assessment, and those that result from expert judgment. This will allow a comprehensive assessment to be carried out in several areas such as: evaluation of the website's visitability; evaluation by specific e-commerce indicators; evaluation of e-commerce website's functionality; evaluation of the e-commerce website as a marketing tool

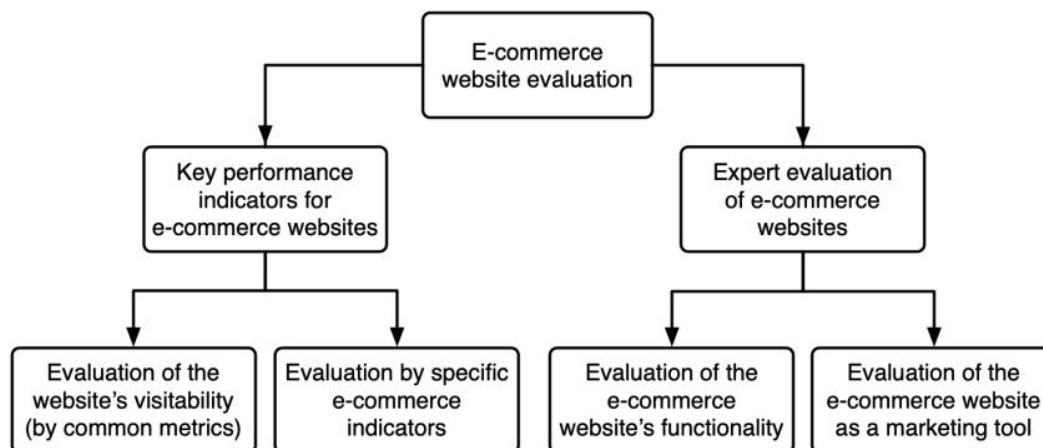


Fig. 1. E-commerce website evaluation

The proposed system for evaluating e-commerce web sites is an analytical framework of analysis indicators, with many characteristics included different areas of the analyses. Key performance indicators can be calculated from stored data and used for the areas of evaluation of the website visibility and evaluation by specific e-commerce indicators and the analysis in the other two areas is based mainly on expert judgment.

III. KEY PERFORMANCE INDICATORS FOR E-COMMERCE WEBSITES

We have divided the key indicators for e-commerce website evaluation into two main groups: common metrics that are valid for all websites and indicators specific for some e-commerce sites.

The indicators for e-commerce website visits can be called common as they are essential for e-commerce but are also valid for all other types of websites. These indicators are calculated using existing web analytics tools, such as Google Analytics. Out of them, the following have a key meaning in the evaluation of online sales websites.

- **Visits** – the activation of the e-shop in a browser or through a mobile application is considered the start of the visit, and exiting the site or interrupting the session is considered to be the end. If the e-shop is not closed after a long period of time, the user session is usually interrupted. After a 30-minute interval a new session begins. The traffic to an e-



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commerce site is essential because the more visitors there are, the more likely they are to become buyers. When traffic is targeted, it brings more profits.

- **Unique visitors** – the calculation is required because a visitor can generate multiple visits that are separated over time. To track this metric, users' IPs are tracked, and cookie technology is used. It is worth mentioning that the number of unique visitors cannot be calculated with absolute accuracy because the user can use a web browser with a setting not to store the cookie information, yet this metric is a good enough indicator of how many of all the visitors are different.
- **Returns** – shows the percentage of visitors who have already viewed the e-shop. Calculation also uses cookie technology. This indicator shows that the e-shop is liked, interesting, and useful to customers.
- **Time on site** – shows the approximate time a visitor stays on the website in minutes. It is calculated from the time of accessing the page until the time of opening the next page. The stay on the site is the sum of the time it takes to visit each page. The length of staying on the last visited page is considered to be 0 minutes. This indicator also takes into account the extent to which the site manages to attract the attention of visitors. However, if the length of the stay is too high, it should also be considered whether this is not due to poor site organization, poor navigation, difficult-to-understand content, or a complex ordering system.
- **Bounce rate** – shows the percentage of visitors who view only one page and then leave the website. Reporting the rate of the site's exit is important because an eshop can have many visitors and still a large part of them might not have become its customers and may have immediately left it. An e-commerce site is successful if the bounce rate is as low as possible.
- **Top exit pages** – shows from which pages the e-shop visitors most often leave. An analysis of those pages can show the reasons why people left the website and why the content of these pages is not appealing to users.
- **Pages viewed per visitors** – is calculated as the ratio between the total number of pages viewed and the number of visitors to the website. In general, it is good to have a large number of viewed pages, but in some cases, this may indicate that the site needs to be reprocessed because in order to find the information you need it is necessary to browse through many pages.
- **Top visited pages** – the most frequently visited pages of the e-commerce website. This is an indicator that can draw insights into the interests of visitors, optimizing the supply and make offers that best match their expectations and preferences.
- **Traffic source** – shows where visitors come from and how they discover the site, whether through organic search, paid ads or social media.
- **Top visitors per country** – gives information about which geographical locations the visits to the e-shop are from and this can serve to offer goods tailored to the national characteristics, traditions, culture of potential buyers.
- **Revenue per visitor** – it is calculated by dividing the total revenue by the total number of visitors to the site, the value of each additional e-shop Informatics 29 visitor is estimated. It can also calculate a visit's value by the type of customer and by the country.
- **Conversion rate** – it is calculated by dividing the total number of visitors by the total number of conversions. It shows the value of a visit and is an important indicator when determining the quality of traffic because an e-shop can have many visitors but only a few of them could generate its income. The performance of ad campaigns is most often measured via the value of a visit.
- **Shopping cart abandonment rate** – how many users add products to their shopping cart but do not make a purchase. It is better for this criterion to have as small a value as possible.



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- **Step completion rate** – shows how well users use the site, successfully discover a product, and make a purchase through the site.
- **New customer orders** – shows how many purchases have been made by new customers and measures customer growth rate.
- **Returning customer orders** – shows how many of the purchases have been made by previous customers, which shows their loyalty
- **Customer loyalty** – it is determined by monitoring the ratio of new and existing customers. An increase in the number of loyal customers leads to a direct increase in the income from commercial activity.
- **Product relationship** – identifying products that are viewed consistently, which can help effective cross-selling tactics

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